Republic of Tunisia

FOREST INVESTMENT PROGRAM IN TUNISIA

1. Independent Review of the FIP Tunisia

2. Matrix: Responses to comments and remarks of the independent expert

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I. Independent Review of the Forest Investment Plan of Tunisia

Reviewer: Marjory-Anne Bromhead
Date of review: (first draft review, 18th August 2016)

PART I: Setting the context (from the reviewers overall understanding of the FIP document)

Tunisia is the first country in North Africa and the Middle East to benefit from FIP support[1], and provides an important example of a country where climate change mitigation and climate resilience go hand in hand. Tunisia is largely "forest poor", with forests concentrated in the high rainfall areas in the north and North West of the country and covering only 5 percent of the territory (definitions vary). However rangelands are more widespread, covering 27 percent of the land area and are also a source of rural livelihoods and carbon sequestration, while both forests and rangelands are key to broader watershed management (Tunisia is water-scarce). Tunisia, together with the North Africa and Middle East region more broadly, is one of the regions most affected by climate change, with higher temperatures, more periods of extreme heat and more erratic rainfall. REDD actions will help to control erosion and conserve soil moisture and fertility, increasing climate resilience, while also reducing the country's carbon footprint; the two benefits go hand in hand.

Tunisia recently underwent a democratic revolution, and the FIP needs to be understood within this context. While there has been some economic disruption and slowdown, the new government is now committed to making institutions more accountable to people, to jobs and inclusive growth, to more participatory approaches and to more balanced regional development, and decentralization processes are ongoing. Forest and natural resource strategies and policies have been revised and are undergoing further review and revision. The FIP provides a real opportunity for the CIF to contribute to these processes.

Tunisia is also a middle income country with relatively high levels of literacy and well developed institutions. Although there are income and regional income disparities, there is relatively little extreme poverty, and Tunisia is well advanced in its "demographic transition" with average family size of two children[2] and urbanization rates of 67 percent. Rural populations have an older demographic than urban. There are no official statistics on poverty trends after 2010, but World Bank staff projections suggest that poverty incidence declined from 7.6 percent in 2013 to 7.1 percent in 2015 using the 2011 PPP US$ 3.1 per day poverty line[3] . The current FIP draft (paras 44-46) may need to be revisited in this context, since it suggests that 26 percent of the Tunisian population lives below a poverty line of US$ 1.6 per day, compared with over 30 percent in forested areas. The broader point, however, that

[1] At present funding has been provided only for preparation of the FIP; there are no commitments from the CIF for implementation
[2] The current draft states that over 60 percent of the population is between the ages of 15 and 24.. this may be a typo for "under 24".
[3] World Bank Tunisia country overview website

employment opportunities are lower in the forest and rangeland areas than in the more urbanized north- east and east of the country, certainly holds true.

The FIP, within this context, appropriately emphasizes economic, environmental and social development linkages. Economically, by improved use of agro-silvo-pastoral products, it aims to increase revenues from forests and reduce poverty for local communities; environmentally, by better protection, restoration and management of forests and rangelands it would reinforce all the ecosystem services provided by forests and rangelands (protection of soil and water resources, carbon sequestration and climate change mitigation, preservation of biodiversity); and socially, by more inclusive natural resources management and involvement of the local population and private sector, it would aim to reduce disparities (regional, men/women, youth) and lead to a more equitable sharing of benefits and voice in decision making.

It should be emphasized that the CIF has so far financed only preparation of the FIP; there are no CIF funds to support investment. The FIP needs therefore to be seen as a framework for bringing about consensus for policy change and for attracting the enhanced investments that help achieve the triple win of being good for forests, good for development and good for the climate. In this context the process of FIP preparation, bringing together government departments, multilateral development banks, the private sector and local communities in client countries is important. In Tunisia government to date has been the principle source of investment in natural resource management, providing 80 percent or more of funding between 2002 and 2011 (figure 6). This is likely to remain the case. Therefore, even with enhanced private sector and multilateral/bilateral/climate investments, the FIP needs to be consistent with national priorities and planning processes. Given also that additional funding sources have not been firmly identified, detailed project preparation may be premature at this stage.

Overall objective of the FIP IP

The stated objective is to increase carbon sequestration and enhance the production, improved use and value of the goods and socio-economic and environmental services of the agro-sylvo-pastoral landscapes[4]. There are three specific objectives:

--Strengthening the governance of the forest and pastoral sector;

--Optimize protection, carbon sequestration and the economic valuation of forest landscapes;

--Improve productivity, economic development and the sustainable management of rangelands.

The FIP is closely linked with the broader strategic objectives of Tunisia, regarding green growth, sustainable development, forest, rangeland and agricultural development, economic development and balanced regional development.

While objective 1 is cross-cutting, investment projects 1 and 2 are linked to specific objective 2, and project 3 to specific objective 3. FIP also includes an analysis of the current state of forest and rangeland management, of institutional/regulatory strengths and weaknesses, and of broader sustainable development strategies.

[4] This is the wording in the main text, and links to specific objectives. The current wording in the summary is a little different and may need to be revised for consistency

Project 1 integrated management of landscapes in the least developed regions in Tunisia

The project will focus on the agro-silvo-pastoral landscape units dominated by the Cork oak

Forest (North-West Tunisia), the pine forest of Aleppo Pine (governorate of Siliana and Kasserine) or alfatieres lands (governorates of Kasserine and Sidi Bouzid). It will support joint-management with communities, integrated at landscape scale, and largely on state land. It will also include agro-silvo-pastoral products value chain development, as well as enabling and cross-sectoral activities at national scale, to remove obstacles to the sustainable management of forests and rangelands. For site specific activities ten sites totaling 100,000 ha and covering 6 governorates have been selected based on agreed criteria. It supports:

(i) Improved management of agro-silvo-pastoral landscapes through support to a) territorial development planning, using participatory, multi-sectoral approaches and supporting also a national plan for afforestation; (b) implementation of landscape management plans, including support to local stakeholders in sustainable agriculture, forest management and regeneration, public-private partnerships for national parks or nursery privatization;

(ii) Development of agro-silvo-pastoral value chains through (a) capacity building of national institutions and entrepreneurs, including to business support centres and MSMEs in business development and preparation of proposals to submit to the Fund of Productivity and Innovation (FPI) (b) creation of the FPI, which will include two windows aimed at; companies and producers, and providers of specialized services

(iii) Strengthening the institutional and legal framework for natural resource management, including land rights and access to land, capacity building support to the restructuring of the MARHP (Ministry of Agriculture, Water Resources and Fisheries) and the CRDA (Regional Commissions for Agricultural Development) in line with the 2014-23 Sustainable Development Plan, with a special focus on decentralized administration and the Rangelands management organization

(iv) Improved knowledge and monitoring through support to (a) a new forest inventory and (b) development of a forest and rangelands monitoring system, to be compatible with the MRV system developed as part of REDD +

(v) Project management

Project costs are estimated at US$ 96 million. Estimates of carbon sequestration/reduced emissions would be made as landscape management plans are prepared.

Project 2: Investment for the restoration and improved use and value of private degraded land

Project n°2 will be developed on degraded private land in Northwestern and Northeastern Tunisian, with an incentive approach to encourage owners to invest in forestry, arboriculture, or agroforestry, based on the design of an innovative and attractive funding mechanism. The focus will be on implementation of a funding mechanism that will promote investment on degraded private land. It includes four components:

(i) Awareness raising among private owners, including on (a) the economic gains associated with improved land management and (b) communication of project activities

(ii) Establishment of an innovative funding mechanism to promote investment in sustainable management of degraded private land, including piloting of a PES (payment for environmental services) mechanism. The project would establish two separate funds, and the project would need to develop cooperation agreements between private land owners, the Forest Administration and a funding agency such as the Caisse des Depots. The fund could eventually support funding of REDD + activities; and (b) support to land owners to prepare funding applications

(iii) Support for investments developed under component 2, including (a) Forest Plantations, domestication of medicinal and aromatic plants and agroforestry; (b) Arboriculture and Agroecology; and (c) Strengthening the capacity of private owners

(iv) Management, monitoring and evaluation, including development of a MRV compatible system for monitoring GHG sequestration and emissions.

Project costs are estimated at US$ 34 million. The project description also provides an estimate of the carbon likely to be sequestered over the project life and beyond, depending on assumptions on the type of investments.

Project 3: Sustainable management of Tunisian collective rangelands

The project will focus on the large expanses of collective steppe rangelands of Central and Southern Tunisia , in the governorates of Gabès, Gafsa and Tozeur. It aims to improve the resilience and the conservation of the rangelands in order to enhance environmental services and economic opportunities for the local populations, sequester carbon stock in the rangelands and fight against desertification. Target areas will be selected within the 1 million ha of rangelands which cover these areas. The project would build on the ongoing Prodesud project (program for agro-pastoral development and promotion of local initiatives in SE Tunisia supported by IFAD), and would support

(i) Revisions to the Pastoral Code, including revision of implementing texts, capacity building and awareness raising among the local populations. The activity would be carried out in close coordination with proposed revisions to the Forest Code.

(ii) Agro-pastoral development of collective rangelands including (a) participatory sustainable development of pilot territorial units; (b) investments in improving the resilience and productivity of these rangelands, including set-aside areas for regeneration, production of improved planting material and rangeland plantings; (c) agricultural productivity enhancements and (d) building on Prodesud and Prodesul, development of pastoral value chains in Medouine and Tatouine governorates through support to development of investment proposals and micro-credit

(iii) Management and monitoring.

Project costs are estimated at US$ 28 million and broad estimates are made for likely biomass carbon sequestration, though not for increased soil carbon.

The project descriptions do not include a discussion of implementation responsibilities, either for the projects a whole or by component.

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<u>Part II</u>: General criteria: The *investment plan complies with the general criteria indicated in the ToRs* [5]

A. Country capacity to implement the plan	yellow

The FIP includes a thorough institutional assessment. It stresses that while institutions, planning and budget processes are relatively well established in Tunisia, and while the inclusion of agriculture, water resources, fishing, forestry and rangelands under one Ministry provides opportunities for coherence at national level, there are a number of constraints. These include poor inter-departmental coordination, misalignment of planning and budgeting processes, weaknesses at decentralized level, some inconsistencies in legislation, and, despite recent improvements, a long tradition of lack of participatory development and accountability to citizens. Furthermore data on forest and rangeland area and on carbon sequestration/emissions from vegetation and soils are poor.

While emphasizing that institutional transformation is a long term process, the FIP includes a number of measures to address these weaknesses, including support for revisions to regulations and Improved coordination between departments, a focus on decentralized, participatory approaches, and capacity building. It also supports a new forest inventory and improved approaches to monitoring, including establishment of MRV systems compatible with REDD+.

Project implementation arrangements are not explicitly described, either at local or at central or private sector level. While it would be premature at this stage to describe implementation and fiduciary modalities in detail, this question could usefully be addressed in a few lines; the FIP investments need to have "champions" and need also to be "implementable" within national contexts (this is the main reason for the "yellow" rating).

A further question concerns the proposals for the Productivity and Innovation Funds. Again while detail is premature, It would be helpful to provide more explanation about previous experience with these, links with existing financial instruments, and, if funding is secured and as programs are prepared, to gain an understanding of how the funds proposed under the different operations would link together.

B. Developed on the basis of sound technical assessments	yellow

The FIP includes a useful analysis of the current status of forests and rangelands, their role in providing both livelihood and regulatory services, and it identifies key information gaps and geographical/climate, institutional, regulatory, social and economic constraints to sustainable management. FIP programs are developed within this context, interventions are appropriately prioritized and targeted geographically (in the more forested areas of the north with forest and agro-silvi-pastoral landscapes, and in the rangelands of the south respectively .. see description summary above). There are a few areas which may need clarification, and which in turn may into feed into program design. Most of these could be addressed early in preparation but they do also have implications for broader FIP priorities.

[5] Each criterion is assessed in 3 colors: green = met the criteria; yellow = need for some additional work; red = did not meet the criteria yet.

Olives and fruit trees: by far the greatest source of woody biomass carbon sequestration appears to be from olive trees (see draft REDD RPP: out of a total of 4.1 million metric tons (mmt) per year, 2.45 mmt are produced from olive plantations, compared with 0.6 mmt from forests and 0.69 mmt from rangelands). Olives also provide employment opportunities for local populations and olive plantings are regarded as a means of securing rights to land use. Support for conversion of cereal/grazing land to olives and other fruit trees formed part of a GEF-supported climate resilience project in Morocco. While recognizing that a "granular" approach is needed, and that olives may not be suited to some environments, a closer examination of the role of arboriculture would be helpful. *It would be helpful for the FIP to consider providing explicit support for arboriculture, including more productive olives plantings/regeneration where appropriate as part of agri-silvo-pastoral landscape restoration.*

Woody biomass for energy: The background section to the FIP mentions that unsustainable use and conversion to agriculture are the main contributors to carbon emissions in the forest and rangelands sector. Use of woody biomass for energy (primarily heating in the hilly north) is not considered a major factor and is not quantified. The FIP does not discuss specific programs to support more sustainable use of wood energy. Yet the summary of the REDD readiness proposal states that use of fuelwood is the major source of GHG emissions (3.2 million tCO2 per year, compared with other wood uses of 400,000 tCO2per year). *It would be useful for the FIP to assess the potential of more sustainable use of fuel-wood, both by better forest management, improved charcoal conversion and/or improved stoves, and if appropriate to provide support for this.*

Livestock management: The FIP provides support for improved rangeland and pasture management and enhanced productivity (mostly in project 3). Yet there is little discussion of (necessary) complementary programs to manage herd size or to increase livestock productivity. (In India for example improved milk productivity from existing herds would play a major role in GHG emission reduction). There is also the question of possible planned large-scale private sector investments in rangeland and herd development, whose impacts on sustainable landscape management and poverty reduction/job creation could be positive or negative, depending on how they are managed. *It would be helpful for the FIP to discuss complementary programs, ongoing and planned, in this area, since improved pasture management alone may risk leading to increased herd size, and without better productivity measures would have impact below potential.*

Impact of urbanization/coastal developments and amenity values of forests: There is relatively little discussion of either at present. *It would be helpful to understand the significance, threats, opportunities and management challenges posed by urban development, especially on coastal forests.*

Productivity and Innovation Fund: Both projects 1 and 2 include proposals for a financial instrument. *It would be helpful to provide some insights into previous experience with such instruments in the rural development sectors*. There are also proposals for a pilot PES mechanism under project 2. While piloting such an instrument makes sense, there need to be "willing buyers" (sometimes water utilities as is the case in Costa Rica) as well as "willing sellers" and quantification mechanisms. It will be useful to establish whether the environment is favourable yet for such arrangements.

Socio-demographic dynamics: At present there is little detail on the socio-demographic dynamics of the potential beneficiary populations, although there have been natural resource development

programs in both project areas. (Projects 1 and 2 operate in similar areas). There is also little detail on the specific issues facing women and young people. *It would be useful early on in project preparation to build on information from existing operations to gain more insight into these, as well as to undertake area-specific social assessments*[6].

Area focus: Projects 1 and 2 operate in similar areas though the focus of project 2 is on privately owned land and associated landscapes and value chains. While the design is different, it would be helpful for the documentation to provide some more insights into the rationale for having two separate operations. (This reviewer supports the separation in the interests of "implementability").

The broader question behind this concerns the link between the context and analysis on the one hand, and the selection of the individual projects on the other. If "champions"(possible funding sources) have been identified for the investments, it would be helpful to name them. If they have not, it would be helpful (a) to consider how some of the areas mentioned above (ie wood energy, livestock management, arboriculture and olives, coastal developments and forest amenity values, specifically) might fit into a broader FIP; and (b) to consider prioritization/sequencing of activities. (The area-specific approach of the proposed operations is a strength in this context, since size can be adapted to the level of funding available. It needs to be emphasized more broadly, also, that experience indicates that support for policy/regulatory reform without accompanying investments is often not very effective. Effective policy reform generally needs, in addition to regulations, economic incentives/other measures and social marketing).

C. Demonstrates how it will initiate transformative impact	green
The FIP seeks to address key constraints in three major areas. It (i) focuses on participatory approaches to sustainable landscape development (all 3 projects) and seeks (ii) to involve private sector operators and develop value chains (projects 2 and 3). It also supports (iii) important institutional reforms at central and local level, and seeks to establish rigorous data collection and monitoring arrangements (especially project 1 but all 3 projects). It is well grounded in government' broader efforts to transform government, create job opportunities and recognize that sustainably managed landscapes can be a source of growth. It is the first FIP in North Africa and illustrates well the inter-connections between climate resilience and climate change mitigation. (However it does not address some of the stress factors identified .. see section B).	

D. Prioritization of investments, lessons learned, M&E, links to the results framework	Green (premature)
Investments are prioritized and related to key constraints and opportunities (see table 15 pages 87) though there are some gaps (see section B above).	

[6] This would be a separate exercise from any social safeguards review and would be broader, guiding program design

The FIP summarizes lessons learnt from previous NRM operations in both the north and the south; these have also involved participation and lessons will certainly inform FIP project detailed design.

FIP includes support for a new forest inventory and establishment of forest/pastoral landscape monitoring systems which would be consistent with MRV under REDD+.

The FIP includes estimated costs and a breakdown by component.

Detailed project monitoring and results framework mechanisms would be developed in the course of detailed FIP project preparation.

E. Stakeholder consultation and stakeholder engagement	Green

The FIP envisages use of participatory mechanisms during implementation, involving not only local land users and local farmer associations but also local government organisms, private sector operators, voluntary organizations (which are less well developed in Tunisia and in some country).

FIP design has involved widespread consultations with government, private sector, civil society and development partners. It has not yet involved detailed stakeholder consultation with local communities. It should be noted, however, that funding has not yet been secured so there are issues with raising expectations.

The FIP could elaborate further the progress that has been made already with decentralization and strengthening local accountability to citizens, since decentralized or deconcentrated organizations will play a key role in FIP implementation.

F. Social and environmental issues, including gender	yellow

The FIP includes a thorough discussion of the natural resource management issues facing Tunisia, and provides a useful institutional as well as technical perspective. The emphasis on linkages between NRM, economic and employment opportunities, policy constraints, climate resilience and climate change mitigation is strong

As mentioned above in the technical assessment, during individual FIP program design there will need to be more "granularity" regarding social assessment and design of programs to address specific challenges. At present the FIP document mentions that populations in the project area are poorer than elsewhere in the country, have an older demographic and that young people face particular challenges, and that programs need to be designed in order to increase opportunity and voice for them (see para 184). But at present there are few specifics regarding program design adapted to either gender or youth issues, and little on any specific characteristics populations in the different project regions may have.

G. New investments or funding additional to on-going/planned MDB investments	green

Over the last 50 years most funding of NRM programs has come from the Tunisian budget and this is likely to continue to be the case, though the objective is to increase private sector funding. No investment funding is presently committed from the FIP. The FIP document discusses ongoing MDB and bilateral programs. While recognizing that a major focus of the Country Partnership strategy is job creation, a proposed World Bank participatory landscape management project, for example, has been identified within the government strategic and FIP framework and would likely include many of the features of project 1. Project 3 builds on an IFAD supported project for agro-pastoral development in the south east of the country. And there are some similarities between project 2 and a possible operation under preparation for AFD support.

If investments have been identified in relation to possible funding sources, it may be helpful to say this, as well as to explain how the FIP process has brought value added to these. Project 2 covers broadly the same area as project 1 though it addresses privately owned land. It would be helpful to provide a clearer rationale as to why there are two separate operations (it may relate to likely availability of funding).

H. Institutional arrangements and coordination	green
The FIP document includes a strong institutional and legal analysis and identifies clearly strengths and weaknesses. It aims to support increased collaboration and coordination between different government agencies, and between technical and financial partners. It emphasizes the challenges (linked in part to competition for budget), but highlights improved collaboration in recent years. A Joint Steering Committee is proposed to support coordination at central level, and at local level program is anchored in the CDRAs (Regional commissions for agricultural development). The document is quite realistic about the challenges, however.	

I. Poverty reduction	green
The FIP program targets regions with higher levels of poverty than the average, and rural populations within these regions. By supporting improved landscape management, productivity and value chain development, it aims to increase and diversify economic opportunities in the program areas, contributing to poverty reduction. Project-specific poverty targeting measures, if appropriate, would be developed during project preparation.	

J. Cost effectiveness of proposed investments	Green (premature)
At present it is too early to assess cost effectiveness. This would require more detailed project preparation and economic/environmental analysis. Project 2 and 3 include estimates of sequestered carbon from project activities; one feature, especially in the drier areas of Tunisia (project 3) is the importance of soil carbon as opposed to above-soil carbon. The FIP emphasizes however co-benefits in terms of climate resilience and economic and social benefits.	

Part III: Compliance with the investment criteria of FIP

Comment on whether the investment plan complies with the criteria specific for FIP (see TORs).

(1) Complies with the principles, objectives and criteria of the FIP as specified in the design documents and programming modalities.

FIP principles: *In addition to the Governance Framework of the Strategic Climate Fund (SCF), the principles (i) to (vi) apply.*	
(i) National ownership and national strategies	green
The FIP is embedded in national strategies (see Box 2 page 65 and the box on page 84, figure 10, and chart on page 86 as well as broader discussions). These include the National Strategy for the Development of Forests and Rangelands (NSDSMFR*); a more specific discussion of the links of the FIP with the 2016-20 Development Plan would be welcome*	
(ii) Contribution to sustainable development	green
The FIP document has a strong focus on promoting economically, environmentally and socially sustainable development. It emphasizes that the FIP must be seen in the context of co-benefits for local people including climate resilience, as well as of climate change mitigation.	
(iii) Promotion of measurable out-comes and results-based support	Green (premature)
With no firm commitments for funding yet, the projects are not yet prepared in sufficient detail for outcomes to be measured and results frameworks have not yet been prepared. Outcomes have been identified and would include improvements in the regulatory, governance and institutional framework mainstreaming of participatory mechanisms for integrated landscape management and public-private partnerships; establishment of forest and range landscape monitoring mechanisms, improved productivity, vegetation cover and reduced erosion, increased GHG sequestration and reduced erosion; value chain development, and increased job opportunities with a focus on young men and women.	
(iv) Coordination with other REDD efforts	green
A REDD readiness proposal has been prepared and should be submitted for funding by late 2016. Studies are ongoing, supported by different financial and technical partners, on forest and pastoral land, the needs for REDD+ institutional anchorage and for establishment of a forest monitoring system. Draft documents are consistent with the FIP, which could help develop the mechanisms for REDD implementation. The draft REDD + RPP has a detailed discussion of institutional and coordination issues as well as information gaps, measurement issues and inconsistencies, and summarizes also the results of the 2010 GHG inventory. Table 23 of the report summarizes annual woody biomass production at 4.1 million TMS per year of which more than half is from olive trees. *Further cross referencing of the RPP readiness proposal and the FIP would be helpful.*	
(v) Cooperation with other actors and processes	green

Programs supported by the Tunisian government and development partners are summarized. The FIP highlights that there have in the past been some coordination issues, linked in part to competition for budget. It includes proposals for improved coordination, but emphasizes that these will depend on willingness to cooperate as well as on formal structures.	
(vi) Early, integrated and consistent learning efforts	yellow
The FIP discusses transposition and replication potential (within Tunisia and potentially over North Africa more broadly), emphasizing that project activities will enable the checking and modifying of different approaches to sustainable ecosystem management, to institutional and governance strengthening at sub-national level, and to coordination processes. Detailed proposals have not yet been prepared; as project preparation proceeds these will form a key part of project design. *It would be helpful at this stage, nevertheless, to provide some more proposals of how the FIP will facilitate learning, both within Tunisia and with other countries.*	

FIP Objectives:	
Providing up-front bridge financing for readiness reforms and public and private investments identified through national REDD readiness strategy building efforts, while taking into account opportunities to help to adapt to the impacts of climate change on forests and to contribute to multiple benefits such as biodiversity conservation, protection of the rights of indigenous peoples and local communities, poverty reduction and rural livelihoods enhancements.	
a) To initiate and facilitate steps towards transformational change in developing countries forest related policies and practices[7]	green
The FIP would support transformational change (e.g. in governance, monitoring and landscape management (project 1); in value chain development and private sector finding mechanisms for small private land-owners (project 2 ;); and in enhanced rangeland management and value chain development (project 3). It must be seen, however, in the context of the broader change that has recently taken place with regard to the democratic revolution; the Tunisian authorities are committed to more participatory and integrated forest, rangeland and agricultural landscape management, more inclusive development and a greener development path. A particular feature of the Tunisia FIP is the link between climate resilience and climate change mitigation in improved landscape management.	
b) To pilot replicable models to generate understanding and learning of the links between the implementation of forest-related investments, policies and measures and long-term emission	green

[7] This should be done through
(i) serving as a vehicle to finance investments and related capacity building necessary for the implementation of policies and measures that emerge from inclusive multi-stakeholder REDD planning processes at the national level;
(ii) strengthening cross-sectoral ownership to scale up implementation of REDD strategies at the national and local levels;
(iii) addressing key direct and underlying drivers of deforestation and forest degradation;
(iv) supporting change of a nature and scope necessary to help significantly shift national forest and land use development paths;
(v) linking the sustainable management of forests and low carbon development;

reductions and conservation, SFM and the enhancement of forest carbon stocks in developing countries	
FIP implementation would provide very useful lessons, especially for semi-arid countries, with special focus on the "triple win" of enhanced carbon sequestration/reduced emissions; enhanced climate resilience and restoration of productivity; and increased economic opportunities for local people, as well as in the effectiveness of governance reforms. While recognizing that FIP provides only project outlines, *it would be helpful to provide some more details on potential replication processes both inside and outside Tunisia.*	
c) To facilitate the leveraging of additional financial resources for REDD, including through a possible UNFCCC forest mechanism, leading to an effective and sustained reduction of deforestation and forest degradation, thereby enhancing the sustainable management of forests	green
FIP lessons in principle could help leverage such financing, promoting interest in landscape restoration and forest regeneration.	
d) To provide valuable experience and feedback in the context of the UNFCCC deliberations on REDD	green
Tunisia FIP experience would be of particular interest in discussions on possible mainstreaming agricultural landscapes into REDD processes, and in on integration of climate change mitigation and climate resilience actions.	

FIP Criteria (FIP design document, additions as per FIP Investment Criteria and financial modalities: *Identify the theory of Change behind the proposed interventions (projects) identified and how they contribute to the overall programmatic approach. Consider how the IP can also effectively meet criteria set by other funding sources, especially the Green Climate Fund, FCPF and Biocarbon Fund.*	
a. Climate change mitigation potential	green
FIP actions under all 3 projects would contribute to increased carbon sequestration/reduced emissions.	
b. Consistency with FIP objectives and principles	green
The Tunisia FIP is consistent with FIP principles and objectives.	
c. Drivers of deforestation and forest degradation	yellow
The FIP identifies the main drivers of forest and rangeland management deforestation and degradation, and the draft RPP readiness proposal, if supported, would provide further opportunities for synergy. *As mentioned above, there could be more landscape-specific discussion of the role of olive trees (since they are a major source of sequestration and provide income opportunities) and of fuel-wood/cooking energy management (since cutting for fuelwood appears to be a driver of degradation in the north, but if well managed can form part of sustainable forest landscape management). Furthermore discussions of links of FIP actions with improved herd size management and livestock productivity in rangelands would be welcome since these are often linked to overgrazing*	

and decline of rangeland productivity. *The significance of coastal urban development would also merit further discussion.*	
d. Inclusive processes and participation of all important stakeholders, including indigenous peoples and local communities.	green
The FIP aims to use participatory processes, involving local communities, in elaboration of integrated landscape management plans and in their implementation (all three projects). It also seeks an expanded role for decentralized structures (all projects), for public-private partnerships (especially projects 2 and 3), and improved coordination at central government level (especially project 1).	
e. Demonstrating impact (potential and scale)	green
The FIP, by choosing particular sites in representative landscapes (especially projects 1 and 3), with careful monitoring mechanisms, and the innovative funding mechanism (especially project 2 but also project 3) would provide useful models for scaling up.	
f. Forest-related governance	green
The FIP includes a very thorough assessment of forest governance, including related strategies, legislation and regulations, institutional strengths and weaknesses, including cross-sectoral and central-decentralized coordination, and accountability/participatory issues. Possibly it emphasizes the weaknesses over the strengths, but this may be a matter of nuance.	
g. Safeguarding the integrity of natural forests	green
Tunisia has rather few "undisturbed" forests, and their extent is not described in the FIP (45 percent of Tunisian forests are under 25 years old, an illustration of the extent of reforestation programs over recent decades). However its forests, including those which have been reforested, are largely composed of indigenous species, and it does have important relict forests with high levels of endemism. It has a system of national parks and protected areas which is expanding and whose value is recognized, despite management and institutional constraints. The FIP does not explicitly include activities for protection of undisturbed forests. However its activities, by improving forest landscape productivity using participatory approaches, will help reduce pressure on remaining undisturbed forests. Rural populations are not expanding. *Some more explicit discussion of how FIP actions will help protect biodiversity values would be helpful.*	
h. Partnership with private sector	yellow
The FIP seeks to integrate the private sector in a number of ways: **(i)** Under project 1 through Development of agro-sylvi-pastoral value chains through (a) capacity building of national institutions and entrepreneurs, including to business support centres and MSMEs in business development and preparation of proposals to submit to the Fund of Productivity and Innovation (FPI) (b) creation of the FPI, which will include two windows aimed at; companies and producers, and providers of specialized services **(ii)** Under project 2 through support to private forest land owners and through Establishment of an innovative funding mechanism to promote investment in sustainable management of degraded private land, including piloting of a PES (payment for environmental services)	

	mechanism. The project would establish two separate funds, and the project would need to develop cooperation agreements between private land owners, the Forest Administration and a funding agency such as the Caisse des Depots. The fund could eventually support funding of REDD + activities; and (b) support to land owners to prepare funding applications **(iii)** Support for investments developed under component 2, including (a) Forest Plantations, domestication of medicinal and aromatic plants and agroforestry; (b) Arboriculture and Agroecology; and (c) Strengthening the capacity of private owners *The challenge moving forward will be to ensure that these proposed initiatives fit together and are transparently managed.*
i. Cost effectiveness, incl. economic and financial viability	Green (premature)
It is too early yet to assess cost effectiveness. Once investment funding is committed more detailed project preparation would allow for this. Social and economic benefits as well as broader environmental benefits including watershed protection will be key (in addition to GHG sequestered/emissions avoided).	
j. Capacity building	green
The FIP includes strong capacity building elements under all projects. Project 1 supports participatory territorial development planning and support in implementation; capacity building of local entrepreneurs in value chain development; broader institutional strengthening and restructuring, including of decentralized administrations and the rangelands management organization, and support forest regulatory and land tenure review and reform; as well as improved forest and landscape monitoring compatible with MRV. Project 2 supports capacity building of institutions and entrepreneurs sustainable land management, and support in preparing proposals for an innovative funding mechanism, and piloting of a PES system as well as monitoring compatible with MRV Project 3, in addition to regulatory reforms, builds capacity and awareness raising about these to local populations, and support in improved pastoral management and productivity. A challenge will be to ensure that these capacity building initiatives fit together coherently.	

Additional criteria FIP Investment Criteria and financial modalities:		
k. Implementation potential	yellow	Tunisian institutions are relatively well developed with a strong record of project implementation. While there has been a tradition of top-down implementation recent initiatives, including through development policy lending, have strengthened decentralized and accountable governance, decentralized structures are in place and there is experience with participatory natural resource management.

		The challenge is that the FIP does not currently describe implementation arrangements by project. Details are premature at this stage, but a brief mention of responsible institutions at central/local level would be appropriate.
l. Integrating sustainable development (co-benefits).	green	The FIP has a strong emphasis on co-benefits, including economic and social co-benefits, but also broader watershed management, erosion prevention and ecosystems management cobenefits. *It could usefully be more explicit on the links between FIP actions and climate resilience*.

(2) Assessment towards the FIP results-framework

Results	*Indicator*	*Comments*	*Score*
C1 Reduced pressure on forests	*a) Change in hectares (ha) deforested in project/program area*	The FIP focuses on broader landscape management, including rangelands and value chain development and uses demand driven, participatory approaches; therefore precise numbers cannot be determined in advance of preparation of detailed landscape management plans. Furthermore "gross" deforestation rates are quite low in Tunisia. Nonetheless the monitoring programs proposed will enable measurement of change in ha of deforestation and loss of rangeland	green
	b) Change in hectares (ha) of forests degraded in project/program area	Degradation is a more serious challenge than deforestation. Similarly, though, the monitoring programs proposed will enable measurement of change in ha of degradation of forest and rangelands	green
	c) tCO2 sequestered / $ by project/program area	Monitoring systems will be put in place to monitor tCO2 sequestered. In terms of US$, co-benefits will be especially important: Tunisia was one of the first countries in the Middle east to estimate the economic costs of broader	green

		environmental degradation and is now committed to a green economy. It will be helpful if, under the FIP, estimates are made of these co-benefits using appropriate methodologies	
	d) Non-forest sector investments identified and addressed as drivers of deforestation and forest degradation	The FIP identifies conversion to agriculture, illegal forest activities and poor rangeland management as drivers, a lack of opportunity to manage landscapes sustainably and develop value chains, a governance environment which has traditionally been top-down and not always accountable to people, and inconsistencies in legislation and institutional coordination issues. The FIP addresses these areas. It does not, however, address the issue of wood energy for heating (although the RPP note identifies this as a major source of degradation), nor improved livestock productivity/herd size management, nor the challenges and potential of arboriculture and specifically of olives. Furthermore it does not discuss the impact of coastal urban developments.	yellow
C2. Sustainable management of forest and forest landscapes to address drivers of deforestation and forest degradation	*a) Preservation of natural forests integrated in land use planning process*	Tunisia has relatively small areas of "undisturbed forest" and these would most likely be preserved, though the landscape planning process could usefully make this explicit. Natural forests would be sustainably managed as part of participatory landscape management. As mentioned above, support for sustainable wood energy production should be an important element of landscape planning an value chain development; it is not proposed as a FIP activity at present	yellow

	b) Evidence that laws and regulations in project/program areas are being implemented, monitored and enforced and that violations are detected, reported and prosecuted	This question could only be answered during FIP implementation. However the FIP, by supporting revisions to regulations strengthening participatory land use planning and decentralized, accountable governance processes, and involving all stakeholders, will increase social incentives for observing the law. The FIP rightly emphasizes that the challenge is to move from "top-down" enforcement to "bottom up" incentives for compliance with sustainable land use management	Green (premature)
C3. A institutional and legal/ regulatory framework that supports sustainable management of forests and protects the rights of local communities and indigenous peoples	*a) Evidence that the legal framework (laws, regulations, guidelines) and implementation practices provide for non-discriminative land tenure rights and land use systems and protect the rights of indigenous peoples and local communities (women and men)*	The FIP includes support for revisions to legislation, including to land tenure rights for community held land. Broader Tunisian legislation is quite advanced regarding women's' rights, though social norms vary. The FIP and Tunisian policy more broadly, now favour a more bottom-up approach to land use. Land tenure revisions are complex, long term processes and multi-sectoral, and the FIP is rightly cautious about the pace of change. Note also that while Tunisia has communities with different lifestyles and includes using both Berber and Arabic languages, it does not have people separately classified as indigenous	Green
	b) Evidence that a national land use plan exists and progress is made to secure the tenure and territorial rights to land and resources of forest-dependent stakeholders , including indigenous peoples and forest communities	The FIP does not state explicitly that a national land use plan exists. Many countries, however, do not have a national land use plan as such. It does seek to involve local people in forest and rangeland management and in securing the benefits from these. (About two-	yellow

		thirds of forest land in Tunisia is state-owned). And it does seek to regularize land tenure, while recognizing that this is an issue which goes beyond the forest sector.	
C4. Empowered local communities and indigenous peoples and protection of their rights	*a) Increase in area with clear recognized tenure of land and resources for indigenous peoples and local communities (women and men)*	Through revisions to the forest code and the pastoral code, as well as to land rights/land tenure revision, the FIP would seek to clarify these rights. The land area cannot, however, realistically be determined at present because such reforms will require multi-sectoral consultations and parliamentary approval; implementation will be a long term process and much broader than the FIP	green
	b) Level and quality of community and indigenous peoples participation (women and men) in decision making and monitoring concerning land use planning, forest management, and projects and policies impacting community areas	A main focus of the FIP is on participatory land use planning	green
	c) Improved access to effective justice/ recourse mechanisms	This area is not explicitly discussed. The broader transformation of the Tunisian government, however, is towards a more open and just society	yellow
C5. Increased capacity to plan, manage and finance solutions to address direct and underlying drivers of deforestation and forest degradation.		The FIP focuses on building this capacity	green
C6. New and additional resources for forest projects	Leverage factor of FIP funding; $ financing from other sources (contributions broken down by governments, MDBs, other multilateral and bilateral partners, CSOs, private sector)	Since there are at present no commitments from the CIF to finance FIP implementation, it would not be realistic to develop these estimates at present. The majority of funding will likely be from the Tunisian government and the private sector, with support from MDBs and bilateral partners	Green (premature)
C7. Integration of learning by development	Number (#) and type of knowledge assets (e.g., publications, studies, knowledge sharing platforms,	It is still too early to expect details on the number of knowledge products to be produced. The FIP	yellow

actors active in REDD+	learning briefs, communities of practice, etc.) created and shared	mentions that experience from Tunisia will be helpful to other North African and Middle eastern countries with semi-arid environments. Nevertheless some more information on possible learning products would be helpful.	

<u>Part III:</u> Conclusions and Recommendations

Overall assessment of the Investment Proposal

Overall, the reviewer assessed a total of 47 criteria and indicators with the following scoring:

35	The criteria and/or indicator has been generally met and there is no need for any revision or larger complement at this stage
12	The criteria and/or indicator is partially met, it is recommended to relook at some of aspects that need further clarification
x	The criteria and/or indicator is partially met and need to be developed [or, at the current stage the criteria is not relevant] *There are some criteria which would appropriately be developed once funding is secured and more detailed project preparation is undertaken. This reviewer has marked these green; there are six*

Recommendations:

It needs to be acknowledged at the outset that there are currently no firm commitments from the CIF for funding the FIP; the Tunisian budget in the past has funded most NRM programs, with the support of MDBs and bilaterals. Once funding is secured, more detailed preparation would provide insights in several areas, such as cost-effectiveness and the quantity of carbon likely to be sequestered. Similarly, indicators such as evidence that laws are being enforced would best be addressed through monitoring mechanisms during implementation. As a general suggestion, however, the link between the key drivers and the selected investments could be a little clearer, with either some additional options suggested, or, if there are possible funding sources (including government sources) for the investments identified, specific mention of these sources. FIP serves as a vehicle for bringing different stakeholders and funding sources together, but there are obvious tensions between carrying out a general sector assessment with a long term perspective, and preparing a FIP, which is intended to include specific investments over the short to medium term.

General Background analysis: The recent transition in Tunisia is clearly described. *Some corrections may be helpful in the final version on both poverty levels (which may be stated as too high) and demographics. It would also be helpful to have some more specifics on progress with the decentralization agenda, (where a number of key reform programs are ongoing) and on the 2016-20 National Development Plan.*

The background analysis also emphasizes the vulnerability of Tunisia to climate variability and climate change, and the strong inter-dependencies between actions which increase resilience, which contribute to climate change mitigation, and which enhance economic opportunity: the "triple win" of climate smart landscape management.

Driver of Deforestation/degradation and links to FIP:

While discussing progress overall in reforestation, The FIP summarizes direct drivers of deforestation and degradation as linked to fires, clearings for agricultural or residential purposes, illicit wood gathering and overgrazing. The FIP proposals under projects 1 and 2 address some of these drivers through support for integrated landscape planning and implementation, support for more sustainable management, development of value chains, participatory approaches and institutional/regulatory reforms. *Given the role of wood energy (largely for heating) in wood use and CO2 emissions (3.9 mMTCo2 annually), it would be helpful for the FIP to address sustainable wood energy use more directly. Conversion to residential use (if significant – there are no quantitative estimates in the FIP or the RPP) may also require a specific approach.*

The FIP mentions conversion to olive plantations as a driver of rangeland degradation, yet olive trees and arboriculture more broadly are a major source of carbon sequestration (much greater than natural forests). They are also a source of income and arboriculture contributes to tenure security. There is no 'eco-system specific" discussion of the role of arboriculture, positive or negative, in landscape management*. It would be helpful for the FIP to take a more "granular" approach in the role of arboriculture in landscape management, income generation and carbon sequestration in Tunisia*.

The FIP supports improved management of rangelands using participatory approaches. This makes sense, given the strong regulatory and supply services that they provide, and their potential for increasing carbon sequestration/reducing emissions and for income generation in a poor region of Tunisia. However it does not currently support or refer (if they exist) to complementary activities in improved herd size management or livestock productivity. These should go hand in hand with improved rangeland management to secure the full benefits. *It would be helpful for the FIP to address the issue of herd size management and herd productivity.*

There are some references to the impact of urbanization and housing development on forests, particularly along coastlines*. It would be helpful to understand whether or not coastal developments are significant, since understanding the positive and negative impacts, and managing these, will require a quite different set of measures than those currently proposed in the FIP.* (This issue is highly significant in countries such as the Greece and the south western US, and often poses great challenges regarding fire management as well as broader watershed protection). There is a brief discussion of the amenity value of forests, but the *extent of their importance regarding tourism and recreation, and biodiversity, could also be discussed more explicitly*. Tunisia has a relatively strong, and growing, network of protected area though there are management challenges.

Land tenure

Land tenure is a complex issue in most countries and the FIP is rightly cautious about the likely pace of progress on this multi-sectoral issue. Although it supports tenure reform, it appropriately assumes that over the early life of the FIP there may not be comprehensive changes. *It would be helpful to have a clearer description of what land tenure arrangements and average size of holding/use are, including in the project areas, for privately owned forests as well as for broader landscapes and rangelands, and*

explain how the participatory approach used and investments will be retained by the land users and sustainable.

FIP projects

Project 1 supports participatory landscape management and value chain development on state land, project 2 on private land, both in the north-north-west of Tunisia. Both also support development of funding mechanisms and MSME development for value chains (both) and investment in landscape management (project 2). The synergies between the two are however not very well described, and neither goes into detail on implementation arrangements. (Project 1 also supports institutional and regulatory reform, inventory and monitoring. All support capacity building). *It would be helpful for the FIP to explain better the synergies between the two operations, and to provide more light on what the experience and governance arrangements have been with funding instruments of the type proposed.*

All projects involve private sector participation to some extent. *It would be helpful for the FIP to summarize previous experience with private sector involvement in landscape management and value chain development (both land owners and enterprises) to demonstrate that the FIP builds on these, and to ensure synergies within the overall program*.

None of the projects is explicit about implementation arrangements (and as mentioned above projects 1 and 2 lack a discussion of wood energy, and project 3 lacks a discussion of herd size management/herd productivity*). In addition to addressing these drivers of degradation, the FIP operations would benefit from a more detailed description of implementation arrangements, especially at decentralized level*.

Gender, youth and social issues

The FIP currently lacks "granularity" (i.e. local detail) on social attitudes and dynamics, and there is very little information on current trends in employment and sources of income. *It is suggested, as the FIP operations are developed in more detail, that there is more detailed social analysis, that detailed design target youth and women as appropriate, and that specific monitoring indicators be developed*.

Monitoring and Co-benefits

It is too early yet to quantify project benefits. However, the FIP would benefit from some more detail on the types of benefits to be monitored. Tunisia has been at the forefront of broader environmental economics*. In addition to financial, job creation and carbon sequestration benefits, and to capacity building, regulatory and institutional outcomes, the FIP could also provide an indication of how it will value broader environmental benefits, for example in watershed regulation, soil productivity, and climate resilience and ecosystem integrity. A discussion of recreational benefits would also be h*elpful (this is of increasing importance in middle income, urbanizing societies like Tunisia).

Knowledge sharing

The FIP includes a useful general discussion on replication and how knowledge could be shared, both within Tunisia and in other North African/middle eastern countries*. It would be helpful to prepare some more detailed activities in this regard under the FIP.*

References

Main document reviewed:

- Forest Investment Plan

Additional documents consulted:

- CIF (2014) Linkages between REDD+ Readiness and the Forest Investment Program. CIF Learning. Nov. 2014
- FIP Design Document (July 2009)
- FIP Investment Criteria and Financing Modalities (June 2010)
- FIP Operational Guidelines (June 2010)
- FIP Results Framework (May 2011)
- FIP Revised procedures for the preparation of independent technical reviews of the FIP Investment Plans (March 16, 2016)

II. MATRIX: RESPONSES TO COMMENTS AND REMARKS OF THE INDEPENDENT EXPERT

(BETWEEN VERSION 0.3 OF AUGUST 5TH 2016 AND VERSION 0.4 OF SEPTEMBER 30TH 2016)

Section / paragraph / criteria	Comment	Response
PART I: Setting the context (from the reviewers overall understanding of the FIP document)		
1.4	The current FIP draft (paras 44-46) may need to be revisited in this context, since it suggests that 26 percent of the Tunisian population lives below a poverty line of US$ 1.6 per day, compared with over 30 percent in forested areas.	Text modified (section 1.3 and Appendix 5).
	It should be emphasized that the CIF has so far financed only preparation of the FIP; there are no CIF funds to support investment.	Information added (introduction and section 8).
	The current wording in the summary is a little different and may need to be revised for consistency [about the overall objective]	Global objective reformulated (section 6.1).
	• The project descriptions do not include a discussion of implementation responsibilities, either for the projects a whole or by component.	Additional elements added (section 6.6).
Part II: General criteria: The *investment plan complies with the general criteria indicated in the ToRs*		
A. Country capacity to implement the plan	Project implementation arrangements are not explicitly described, either at local or at central or private sector level. While it would be premature at this stage to describe implementation and fiduciary modalities in detail, this question could usefully be addressed in a few lines	Additional elements added (section 6.6 and Annex 1).
	A further question concerns the proposals for the Productivity and Innovation Funds. Again while detail is premature, It would be helpful to provide more explanation about previous experience with these, links with existing financial instruments, and, if funding is secured and as programs are prepared, to gain an understanding of how the funds proposed under the different operations would link together.	The analysis will be carried out during the preparation and implementation phase of the project (cf. section 6.2.3).

Section / paragraph / criteria	Comment	Response
B. Developed on the basis of sound technical assessments	There are a few areas which may need clarification, and which in turn may into feed into program design. Most of these could be addressed early in preparation but they do also have implications for broader FIP priorities.	See below
	Olives and fruit trees: a closer examination of the role of arboriculture would be helpful. *It would be helpful for the FIP to consider providing explicit support for arboriculture, including more productive olives plantings/regeneration where appropriate as part of agro-silvo-pastoral landscape restoration.*	Activity implemented with the context of project n° 2 (section 6.3).
	Woody biomass for energy: Use of woody biomass for energy (primarily heating in the hilly north) is not considered a major factor and is not quantified. *It would be useful for the FIP to assess the potential of more sustainable use of fuel-wood, both by better forest management, improved charcoal conversion and/or improved stoves, and if appropriate to provide support for this.*	In section 1.5 the reliability of figures is tempered at some extent. The «fuel-wood » component is integrated in the activities aimed at strengthening value chains, within the context of project n° 1 (section 6.2).
	Livestock management: Yet there is little discussion of (necessary) complementary programs to manage herd size or to increase livestock productivity. *It would be helpful for the FIP to discuss complementary programs, ongoing and planned, in this area, since improved pasture management alone may risk leading to increased herd size, and without better productivity measures would have impact below potential.*	Reference in section 1.1.2.
	Impact of urbanization/coastal developments and amenity values of forests: There is relatively little discussion of either at present. *It would be helpful to understand the significance, threats, opportunities and management challenges posed by urban development, especially on coastal forests.*	Text completed (section 1.4 and Appendix 6).

Section / paragraph / criteria	Comment	Response
	Productivity and Innovation Fund: Both projects 1 and 2 include proposals for a financial instrument. *It would be helpful to provide some insights into previous experience with such instruments in the rural development sectors*. There are also proposals for a pilot PES mechanism under project 2. While piloting such an instrument makes sense, there need to be "willing buyers" (sometimes water utilities as is the case in Costa Rica) as well as "willing sellers" and quantification mechanisms. It will be useful to establish whether the environment is favourable yet for such arrangements.	The analysis will be carried out during the preparation and implementation phase of project n°2 (cf. section 6.3).
	Socio-demographic dynamics: At present there is little detail on the socio-demographic dynamics of the potential beneficiary populations, although there have been natural resource development programs in both project areas.	To be done during the preparation and implementation phase of the projects (cf. sections 6.2 and 6.3; and et Annex 1).
	There is also little detail on the specific issues facing women and young people. *It would be useful early on in project preparation to build on information from existing operations to gain more insight into these, as well as to undertake area-specific social assessments*[8].	Developed in section 4.1 and Appendix 15. To be further elaborated during the preparation and implementation phase of the projects.
	Area focus: Projects 1 and 2 operate in similar areas though the focus of project 2 is on privately owned land and associated landscapes and value chains. While the design is different, it would be helpful for the documentation to provide some more insights into the rationale for having two separate operations. (This reviewer supports the separation in the interests of "implementability").	Project n° 2 has been improved (cf. section 6.3). Links between projects developed in section 6.6.

[8] This would be a separate exercise from any social safeguard review and it would be a broader, guiding program design

Section / paragraph / criteria	Comment	Response
E. Stakeholder consultation and stakeholder engagement	FIP design has involved widespread consultations with government, private sector, civil society and development partners. It has not yet involved detailed stakeholder consultation with local communities. It should be noted, however, that funding has not yet been secured so there are issues with raising expectations. *The FIP could elaborate further the progress that has been made already with decentralization and strengthening local accountability to citizens, since decentralized or deconcentrated organizations will play a key role in FIP implementation*.	Decentralization issues presented in section 1.6.2. IP/FIP support to the decentralization process highlighted in sections 6.2.3 and 6.6.
F. Social and environmental issues, including gender	*As mentioned above in the technical assessment, during individual FIP program design there will need to be more "granularity" regarding social assessment and design of programs to address specific challenges*. At present the FIP document mentions that populations in the project area are poorer than elsewhere in the country, have an older demographic and that young people face particular challenges, and that programs need to be designed in order to increase opportunity and voice for them (see para 184). But at present there are few specifics regarding program design adapted to either gender or youth issues, and little on any specific characteristics populations in the different project regions may have.	Developed in section 4.1 and Appendix 15. To be further elaborated during the preparation and implementation phase of the projects.
G. New investments or funding additional to on-going/planned MDB investments	*If investments have been identified in relation to possible funding sources, it may be helpful to say this, as well as to explain how the FIP process has brought value added to these*. Project 2 covers broadly the same area as project 1 though it addresses privately owned land. It would be helpful to provide a clearer rationale as to why there are two separate operations (it may relate to likely availability of funding).	Links between projects developed in section 6.6 (cf. also the rationale of project n^{o} 2 developed in section 6.3.1).
<u>Part III</u>: Compliance with the investment criteria of FIP		
FIP principles		
(i) National ownership and national strategies	The FIP is embedded in national strategies (see Box 2 page 65 and the box on page 84, figure 10, and chart on page 86 as well as broader discussions). These include the National Strategy for the Development of Forests and Rangelands (NSDSMFR*); a more specific discussion of the links of the FIP with the 2016-20 Development Plan would be welcome*	Cf. Figure 4 (section 6.1).

Section / paragraph / criteria	Comment	Response
(iv) Coordination with other REDD efforts	Draft documents are consistent with the FIP, which could help develop the mechanisms for REDD implementation. The draft REDD + RPP has a detailed discussion of institutional and coordination issues as well as information gaps, measurement issues and inconsistencies, and summarizes also the results of the 2010 GHG inventory. Table 23 of the report summarizes annual woody biomass production at 4.1 million TMS per year of which more than half is from olive trees. *Further cross referencing of the RPP readiness proposal and the FIP would be helpful.*	Links developed in section 3.3.2 and in item 10 of the executive summary
(vi) Early, integrated and consistent learning efforts	The FIP discusses transposition and replication potential (within Tunisia and potentially over North Africa more broadly), emphasizing that project activities will enable the checking and modifying of different approaches to sustainable ecosystem management, to institutional and governance strengthening at sub-national level, and to coordination processes. Detailed proposals have not yet been prepared; as project preparation proceeds these will form a key part of project design. *It would be helpful at this stage, nevertheless, to provide some more proposals of how the FIP will facilitate learning, both within Tunisia and with other countries.*	Issue raised in paragraphs related to the FIP national coordination (section 6.6).
FIP objectives		
b) To pilot replicable models to generate understanding and learning of the links between the implementation of forest-related investments, policies and measures and long-term emission reductions	FIP implementation would provide very useful lessons, especially for semi-arid countries, with special focus on the "triple win" of enhanced carbon sequestration/reduced emissions; enhanced climate resilience and restoration of productivity; and increased economic opportunities for local people, as well as in the effectiveness of governance reforms. While recognizing that FIP provides only project outlines, *it would be helpful to provide some more details on potential replication processes both inside and outside Tunisia.*	Issue developed in sections 6.4, 6.5 and 6.6 (among lessons learned).

Section / paragraph / criteria	Comment	Response
FIP criteria		
c. Drivers of deforestation and forest degradation	The FIP identifies the main drivers of forest and rangeland management deforestation and degradation, and the draft RPP readiness proposal, if supported, would provide further opportunities for synergy. *[...] there could be more landscape-specific discussion of the role of olive trees (since they are a major source of sequestration and provide income opportunities) and of fuel-wood/cooking energy management (since cutting for fuelwood appears to be a driver of degradation in the north, but if well managed can form part of sustainable forest landscape management). Furthermore discussions of links of FIP actions with improved herd size management and livestock productivity in rangelands would be welcome since these are often linked to overgrazing and decline of rangeland productivity*. *The significance of coastal urban development would also merit further discussion.*	Cf. previous comments (responses to comments pf part II, section B of the report of the independent expert).
g. Safeguarding the integrity of natural forests	The FIP does not explicitly include activities for protection of undisturbed forests. However its activities, by improving forest landscape productivity using participatory approaches, will help reduce pressure on remaining undisturbed forests. Rural populations are not expanding. *Some more explicit discussion of how FIP actions will help protect biodiversity values would be helpful.*	Issue developed in section 4.2.
h. Partnership with private sector	The FIP seeks to integrate the private sector in a number of ways [...]. *The challenge moving forward will be to ensure that these proposed initiatives fit together and are transparently managed.*	Links between projects developed in the description of the projects (sections 6.2 and 6.3) and in section 6.6.
Additional criteria		
k. Implementation potential	*The challenge is that the FIP does not currently describe implementation arrangements by project. Details are premature at this stage, but a brief mention of responsible institutions at central/local level would be appropriate*.	Issue developed in Annex 1.
l. Integrating sustainable development (co-benefits).	The FIP has a strong emphasis on co-benefits, including economic and social co-benefits, but also broader watershed management, erosion prevention and ecosystems management cobenefits. *It could usefully be more explicit on the links between FIP actions and climate resilience*.	Issue developed in section 4.

Section / paragraph / criteria	Comment	Response
Assesment towards the FIP results framework		
C1. d) Non-forest sector investments identified and addressed as drivers of deforestation and forest degradation	The FIP [...] does not, however, address the issue of wood energy for heating (although the RPP note identifies this as a major source of degradation), nor improved livestock productivity/herd size management, nor the challenges and potential of arboriculture and specifically of olives. Furthermore it does not discuss the impact of coastal urban developments.	Cf. previous comments (responses to comments pf part II, section B of the report of the independent expert
C2. a) Preservation of natural forests integrated in land use planning process	As mentioned above, support for sustainable wood energy production should be an important element of landscape planning an value chain development; it is not proposed as a FIP activity at present	Integrated in the component related to the development of value chains, project n° 1.
C3. b) Evidence that a national land use plan exists and progress is made to secure the tenure and territorial rights to land and resources of forest-dependent stakeholders , including indigenous peoples and forest communities	The FIP does not state explicitly that a national land use plan exists. Many countries, however, do not have a national land use plan as such.	National land use strategy/plan developed in section 3.2.
C4. c) Improved access to effective justice/ recourse mechanisms	This area is not explicitly discussed. The broader transformation of the Tunisian government, however, is towards a more open and just society	Element added in section 4.1.
C7. Integration of learning by development actors active in REDD+	It is still too early to expect details on the number of knowledge products to be produced. The FIP mentions that experience from Tunisia will be helpful to other North African and Middle eastern countries with semi-arid environments. *Nevertheless some more information on possible learning products would be helpful.*	Element added in activities related to lessons learning in section 6.6.
<u>Part IV:</u> Conclusions and Recommendations		

Section / paragraph / criteria	Comment	Response
	It needs to be acknowledged at the outset that there are currently no firm commitments from the CIF for funding the FIP	Element added (introduction and section 8).
	As a general suggestion, however, the link between the key drivers and the selected investments could be a little clearer, with either some additional options suggested, or, if there are possible funding sources (including government sources) for the investments identified, specific mention of these sources.	Issue developed in section 6.1 (cf. Figure 3 mainly).
General Background analysis	*Some corrections may be helpful in the final version on both poverty levels (which may be stated as too high) and demographics.*	Done (section 1.3, Appendix 5, section 6.1).
	It would also be helpful to have some more specifics on progress with the decentralization agenda, (where a number of key reform programs are ongoing) and on the 2016-20 National Development Plan.	Developed in sections 1.6.2 and 6.1.
Driver of Deforestation/degradation and links to FIP:	*Given the role of wood energy (largely for heating) in wood use and CO2 emissions, it would be helpful for the FIP to address sustainable wood energy use more directly. Conversion to residential use (if significant – there are no quantitative estimates in the FIP or the RPP) may also require a specific approach.*	See previous comments.
	It would be helpful for the FIP to take a more "granular" approach in the role of arboriculture in landscape management, income generation and carbon sequestration in Tunisia.	Issue developed in section 1.5, Appendix 9 and project n° 2 (section 6.3).
	The FIP supports improved management of rangelands using participatory approaches. [...] . However it does not currently support or refer (if they exist) to complementary activities in improved herd size management or livestock productivity. These should go hand in hand with improved rangeland management to secure the full benefits. *It would be helpful for the FIP to address the issue of herd size management and herd productivity.*	See previous comments (response to comment of part II, section B of the report of the independent expert
	It would be helpful to understand whether or not coastal developments are significant, since understanding the positive and negative impacts, and managing these, will require a quite different set of measures than those currently proposed in the FIP. (This issue is highly significant in countries such as the Greece and the south western US, and often poses great challenges regarding fire management as well as broader watershed protection).	See previous comments (response to comment of part II, section B of the report of the independent expert

Section / paragraph / criteria	Comment	Response
	There is a brief discussion of the amenity value of forests, but the *extent of their importance regarding tourism and recreation, and biodiversity, could also be discussed more explicitly*.	Issue developed in section 1.2 and Appendix 3.
Land tenure	Land tenure is a complex issue in most countries and the FIP is rightly cautious about the likely pace of progress on this multi-sectoral issue. Although it supports tenure reform, it appropriately assumes that over the early life of the FIP there may not be comprehensive changes. *It would be helpful to have a clearer description of what land tenure arrangements and average size of holding/use are, including in the project areas, for privately owned forests as well as for broader landscapes and rangelands, and explain how the participatory approach used and investments will be retained by the land users and sustainable.*	Land tenure issues presented in section 1.1 and Appendix 2. More in-depth analysis of land tenure issues will be developed during the preparation of the projects. Participatory approach described in project n° 1 (section 6.2).
FIP projects	The synergies between the two *[investment projects]* are however not very well described, and neither goes into detail on implementation arrangements. *It would be helpful for the FIP to explain better the synergies between the two operations, and to provide more light on what the experience and governance arrangements have been with funding instruments of the type proposed.*	Links between projects developed in the description of the projects (sections 6.2 and 6.3) and in section 6.6.
	All projects involve private sector participation to some extent. *It would be helpful for the FIP to summarize previous experience with private sector involvement in landscape management and value chain development [...] to demonstrate that the FIP builds on these, and to ensure synergies within the overall program*.	Element added in section 5.1.
	None of the projects is explicit about implementation arrangements (and as mentioned above projects 1 and 2 lack a discussion of wood energy, and project 3 lacks a discussion of herd size management/herd productivity*). In addition to addressing these drivers of degradation, the FIP operations would benefit from a more detailed description of implementation arrangements, especially at decentralized level*.	The «fuel-wood » component is integrated in project n° 1 (section 6.2). Taken off from project n°3 (see rationale in section 6.1).

Section / paragraph / criteria	Comment	Response
Gender, youth and social issues	The FIP currently lacks "granularity" (i.e. local detail) on social attitudes and dynamics, and there is very little information on current trends in employment and sources of income. *It is suggested, as the FIP operations are developed in more detail, that there is more detailed social analysis, that detailed design target youth and women as appropriate, and that specific monitoring indicators be developed*.	More detailed analysis of socio-economic data to be done during the preparation of the projects. Issues related to youth and women are discussed in section 4.1 Some specific indicators have been added (executive summary and section 9).
Monitoring and Co-benefits	*In addition to financial, job creation and carbon sequestration benefits, and to capacity building, regulatory and institutional outcomes, the FIP could also provide an indication of how it will value broader environmental benefits, for example in watershed regulation, soil productivity, and climate resilience and ecosystem integrity. A discussion of recreational benefits would also be h*elpful (this is of increasing importance in middle income, urbanizing societies like Tunisia).	Developed in section 4.2. Recreational functions of forests discussed in section 1.2 and Appendix 3.
Knowledge sharing	The FIP includes a useful general discussion on replication and how knowledge could be shared, both within Tunisia and in other North African/middle eastern countries*. It would be helpful to prepare some more detailed activities in this regard under the FIP.*	Issue developed in section 6.6 (integrated in lessons learning related activities).

Republic of Tunisia

FOREST INVESTMENT PROGRAM IN TUNISIA

INVESTMENT PLAN

November 2016

WORLD BANK GROUP
Environment & Natural Resources

Food and Agriculture Organization of the United Nations

European Bank for Reconstruction and Development

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See APPENDICES in a separate volume

Acronyms and abbreviations

AfDB	African Development Bank
AFD	French Cooperation Agency (*Agence Française de Développement*)
AFIC	Common Interest Forest Association (*Association Forestière d'Intérêt Collectif*)
AFOLU	Agriculture, Forests and Other Land Use
APII	Industry and Innovation Promotion Agency (*Agence de Promotion de l'Industrie et de l'Innovation*)
APIA	Agency for the Promotion of Agricultural Investment (*Agence de Promotion des Investissements Agricoles)*
ArF	Administrative forest districts (*Arrondissements Forestiers)*
AU	Animal Unit
AVFA	Agency of Agricultural Extension and Training (*Agence de Vulgarisation et de Formation Agricole*)
CBD	Convention on Biological Diversity
CDC	Funds for Public Investment *(Caisse des Dépôts et Consignations)*
CEPEX	Export Promotion Centre (*Centre de Promotion des Exportations*)
CES	Conservation of Waters and Soil (*Conservation des Eaux et des Sols*)
CIF	Climate Investment Fund
CLD	Local Development Council (*Conseil Local de Développement*)
CRDA	Regional Commission for Agricultural Development *(Commissariat Régionaux de Développement Agricole)*
CRF	Common Reporting Format
DGACTA	General Directorate for the Development and Conservation of Agricultural Lands *(Direction générale de l'Aménagement et de la Conservation des Terres agricoles)*
DGAJF	General Directorate of Legal and Landhold Affairs (*Direction Générale des Affaires Juridiques et Foncières*)
DGAPC	General Directorate of Agricultural Land Planning and Conservation (or DGACTA; *Direction Générale de l'Aménagement et de la Conservation des Terres Agricoles*)
DGDLHF	General Directorate of Dams and Large Hydraulic Facilities (or DGBGTH; *Direction Générale des Barrages et des Grands Travaux Hydrauliques*)
DGEQV	General Directorate of Environment and Quality of life (*Direction Générale de l'Environnement et de la Qualité de Vie)*
DGF	General Directorate of Forests (*Direction Générale des Forêts*)
DGFIOP	General Directorate of Investment and Financing of Professional Organizations ((*Direction Générale du Financement, des Investissements et des Organismes professionnels*)
DGGBO	General Directorate of the Budget Management by Objective *(Direction Générale de la Gestion du Bidget par Objectifs)*
DGOIGD	General Directorate of Organisation, Computing, Document Management And Documentation
DGRE	General Directorate of Water Resources *(Direction Générale des Ressources en Eau)*
DGSAF	General Directorate of Administrative and Financial Services *(Direction Générale des Services administratifs et financiers)*
EBRD	European Bank for Reconstruction and Development
ENPARD	European Neighbourhood Programme for Agriculture and Rural Development
FAO	Food and Agriculture Organization of the United Nations

FCGBC	Financement Cadre de Gestion des Bassins Versants
FCPF	Forest Carbon Partnership Facility
FU	Feed Unit
FFEM	French Fund for World Environment (*Fonds Français pour l'Environnement Mondial*)
FIP	Forest Investment Program
FONAPRAM	National Fund for the Promotion of Crafts and Small Trades (*Fonds National de Promotion de l'Artisanat et des petits Métiers)*
FOPRODI	Fund for Industrial Promotion and Decentralisation (*Fonds de Promotion et de Décentralisation Industrielle*)
FOSDA	Special Fund for the Development of Agriculture and Fisheries (*Fonds Spécial pour le Développement de l'Agriculture et de la Pêche)*
FU	Forage Unit (or UF, for *Unité Fourragère*)
GBO	Budget Management by Objective (*Gestion Budgétaire par Objectif*)
GDA	Farming development association (*Groupement de Développement Agricole*)
GDAP	Development Groups In The Agriculture And Fishing Sector (*Groupements de Développement dans le secteur de l'Agriculture et de la Pêche)*
GDP	Gross Domestic Product
GDSAD	General Domain of Studies and Agriculture Development
GHG	GreenHouse Gas
GIZ	German Agency for International Cooperation (*Deutsche Gesellschaft für Internationale Zusammenarbeit*)
IBRD	International Bank for Reconstruction and Development
IFAD	International Fund for Agricultural Development
IFPN	National Forest and Pastoral Inventory *(Inventaire Forestier et Pastoral National)*
INDC	*Intended Nationally Determined Contributions*
INRGREF	National Institute of Rural engineering, water and Forests (*Institut National des recherché en Génie Rural, Eaux et Forêts*)
IP/FIP	Investment Plan of the Forest Investment Program
IPCC	Intergovernmental Panel on Climate Change
IRA	*Institut des Régions Arides* (Arid Regions Institute)
IRESA	Agricultural Research And The Higher Education Institution (*Institution de la Recherche et de l'Enseignement Supérieur AgricolesI)*
ISP	Silvo-Pastoral Institute (Tabarka)
JICA	Japanese Cooperation Agency
MARHP	Ministry of Agriculture, Water Resources and Fishery (*Ministère de l'Agriculture, des Ressources Hydrauliques et de la Pêche)*
MDB	Multilateral Development Bank
MEDD	Ministry of Environment and Sustainable Develpment *(Ministère de l'Environnement et du Développement Durable*)
MERST	Ministry of Higher Education and Scientific Research (*Ministère de l'Enseignement Supérieur et de la Recherche Scientifique*)
MRV	Monitoring, reporting and Verification

NAMA	Nationally Appropriate Mitigation Actions
NGO	Non-Governmental Organization
NTFP	Non-Timber Forest Products (or PFNL; *Produits Forestiers Non Ligneux*)
ODESYPANO	Northwest Silvo-Pastoral Development Office (*Office de Développement Silvo-Pastoral du Nord-Ouest*)
OEP	Livestock and Rangelands Office (*Office de l'élevage et du pâturage*)
OTC	Topography and Cadasters Agency (*Office de la Topographie et du Cadastre*)
OTEDD	*Observatoire Tunisien de l'Environnement et du Développement Durable*
PACTE	Climate Change Adaptation Program in Vulnerable Rural Areas (*Programme d'Adaptation au Changement Climatique des Territoires ruraux vulnérales*)
PDAI	Integrated agricultural development project (*Projet de Développement Agricole Intégré*)
PDP	Participative Development Plan
PES	Payments for Environmental Services
PRODESUD	Project for Agro-pastoral Development and Local initiatives promotion in South-East *(Programme de Développement agro-pastoral et de promotion des initiatives locales pour le Sud-Est)*
PGRN	Natural Resource Management Project (Projet de Gestion des Ressources naturelles)
REDD+	*Reducing Emissions from Deforestation and forest Degradation*
REF	Public Logging Services (*Régie d'Exploitation Forestière)*
R-PP	*Readiness Preparation Proposal*
SBSTA	Subsidiary Body for Scientific and Technological Advice
SCF	*Strategic Climate Fund*
SDATN	National Management Planning Blueprint (*Schéma Directeur d'Aménagement du Territoire National*)
SFD	State Forest Domain (or DFE; *Domaine Forestier de l'État*)
SFYDP	Strategic five-year development plan 2016-2020 (or PDSQ; *Plan Stratégique de Développement Quinquennal*)
SpD	State Private Direction
TD	Tunisian Dinar
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification.
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UO	Sheep unit (*Unité Ovine*)
UST	Social Territorial Unit (*Unité Socio-Territoriale*)
WB	The World Bank

Summary

1. Country/Region:	Tunisia / MENA	
2. FIP Funding Request (in US$ millions):	*Loan: -- million US$*	*Grant: 22 million US$*
3. National FIP Focal Point:	Mr. Ameur MOKHTAR, Director of Silvo-Pastoral Development, Ministry of Agriculture, Waters and Fisheries	
4. National implementation agency (Coordination of Investment Plan)	Ministry of Agriculture, Waters and Fisheries	
5. Involved MDBs	World Bank (WB) African Development Bank (AfDB) European Bank for Reconstruction and Development (EBRD) Food and Agriculture Organization of the United Nations (FAO)	
6. MBD FIP focal points:	*Headquarters-FIP Focal Points:* **Gerhard DIETERLE** Lead Adviser, Forestry World Bank gdieterle@worldbank.org **Gareth PHILLIPS** Director of "Climate Change and Green Growth" African Development Bank g.phillips@afdb.org **Andreas BIERMANN** Head of Policy & Climate Finance European Bank for Reconstruction and Development biermana@ebrd.com	*Operational Team Leaders:* **Taoufiq BENNOUNA** Natural Resources Management Specialist, World Bank tbennouna@worldbank.org **Jalel EL FALEH** Chief Engineer for Waters African Development Bank j.elfaleh@afdb.org **Marianna WIEDENBECK** Associate Manager European Bank for Reconstruction and Development wiedenbm@ebrd.com **Mohamed AMRANI** Sr. Policy Officer Food and Agriculture Organization of the United Nations mohamed.amrani@fao.org

7. Description of Investment Plan:

(a) Key challenges related to REDD+ implementation in Tunisia

In Tunisia, forest and rangeland degradation, rather than deforestation, is the major challenge. The forest and pastoral sector represents a net carbon sink, thanks to reforestation programs by the Administration over the last two decades. Deforestation linked to fires or conversion of land for urban or agricultural use is relatively minor, though conversion of rangeland to agricultural land is ongoing. Degradation, however, linked to illegal removals of wood, vegetative cover and grazing on the forest land state domain, and overgrazing on rangeland, largely communally owned, contributes to carbon emissions, erosion, and poor watershed management as well as to long term loss of productivity for local users. Much privately owned agricultural land also is poorly managed. Poor land management is linked to many factors, including relative poverty in forest and rangeland areas, a history of lack of participation and cooperation between land users and the administration, institutional and legislative fragmentation. Lack

of a consistent, reliable knowledge base of the resource, and weak systems for monitoring resources use, have a contributed to insufficient understanding of the potential for increasing carbon sequestration, reducing emissions and improving the productivity, watershed management and socio-economic benefits of forests and rangeland. The political changes since the 2011 revolution provide a real opportunity to capitalize on the potential of the forest and rangeland sectors both for the benefit of local populations and for improvement of its carbon footprint. Despite the challenges, Government is committed to more balanced spatial development, including of the less advantaged rural areas where forest and rangeland resources are concentrated, as well as to a system of governance whereby institutions are accountable to citizens, and citizens have a real voice in decision making. The FIP should be seen within this evolving political context. The 2016-20 Strategic Development Plan, currently being finalized, includes five development axes, all of them highly relevant to the FIP: good governance, social inclusion, from a low cost economy to an economic hub, balanced regional development and green economy.

In parallel to the Forest Investment Program (IP/FIP), Tunisia has developed proposals for preparation of a REDD+ Readiness plan (REDD+ (R-PP), whose implementation will lead to the adoption of a national REDD+ strategy. The IP/FIP will support the REDD+ process through investment projects aimed at reducing deforestation and degradation of forests and rangelands, improving carbon sequestration in biomass and soils, and providing significant socio-economic and environmental co-benefits.

(b) Sectors, themes and areas of Intervention

The forest, pastoral and agricultural sectors are interdependent, and sustainable management is linked to improvements in the governance and socio-economic environment. The IP/FIP supports actions to improve forest and pastoral governance through strengthening the institutional and regulatory framework and consultation process for management of natural resources. It supports more sustainable use and greater value-added of forest and pastoral products and improved involvement of local communities and the private sector through the implementation of joint-management mechanisms and support to agro-silvo-pastoral products value chains. It supports Improved knowledge and development of a national forests and rangelands monitoring mechanism. It supports development of an innovative investment incentive mechanism for increased tree cover and restoration of degraded private lands, improving the income of owners, while strengthening the ecosystem services provided by these sites.

These themes of intervention have been divided in three investment projects. Project 1 (Integrated landscape management in the least developed regions in Tunisia) will support enabling activities at national level and improved integrated agro-silvo-pastoral landscapes management in the Northwest and West Central regions of Tunisia. Project 2 (Integration of trees in degraded private farmland) will intervene on agricultural degraded or threatened private lands in the Tunisian North and Western Centre, to improve economic valorisation and provision of ecosystem services. Project 3 (Sustainable management of Tunisian rangelands) will address rangeland issues in specific areas in three governorates (Gabes, Gafsa and Tozeur), to develop and implement participatory development plans, while strengthening the capacities of the administration and of main stakeholders.

The IP/FIP programmatic approach will ensure the coherence of the investments. It will be institutional anchored within MARHP (Ministry of Agriculture, Water Resources and Fisheries). Cross-cutting activities under Project 1 will help remove obstacles to the sustainable management improve the enabling environment and reduce the risks of achieving development outcomes. There will be a strong focus on participation, information, communication, consultation and capacity-building of all stakeholders, both at central and local levels.

c) Expected outcomes

The IP/FIP addresses both direct and indirect factors of forest and rangeland loss and degradation, aiming to catalyse transformation change and a transition to long term sustainable management of Tunisian forests and rangelands:

- Economically, it supports improved use and value of agro-silvo-pastoral products, development of value chains and increased revenues for local communities, generating economic development and poverty reduction in rural areas;
- Environmentally, it supports improvement of the ecological state of the Tunisian forests and rangelands and increase in tree cover, reinforcing provision ecosystem services provision(protection of soil and water resources, carbon sequestration and climate change mitigation, fight against desertification and erosion, adaptation to climate change, preservation of biodiversity);

- Socially, it supports improvements in governance, enabling development of an inclusive and participatory natural resources management approach, a better involvement of the local population and the private sector in the management of forests and rangelands, reduction in disparities (regional, men/women, and youth) and more equitable sharing of economic benefits.

(d) Relations with other ongoing projects

The proposed investment projects take into account the lessons learned from previous natural resource management programs in Tunisia, including recent operations supported by IFAD, AFD, UNDP, AfDB, FAO and the World Bank.

8. Expected key results from the implementation of the investment plan

Outcomes	Indicators of success
A. Reduction of Emissions and improvement of community livelihoods	
A1. Reduced GHG emissions from deforestation and degradation; enhancement of forest carbon stocks	a) Reduced emissions (Mtco2e) related to deforestation and degradation of forests and rangelands compared to a reference scenario b) Carbon sequestered (in Mtco2e) by planting, reforestation and natural regeneration operations carried out under the projects c) Stabilisation or decrease of the area of degraded forest and rangeland every year d) Decrease of the forest area burned annually e) Decrease in areas of forests and rangelands cleared annually
A2. Improved forest and rangeland population livelihoods	a) Number of people (or households) who could increase their income through activities carried out under the project b) Level of increase of revenues from the exploitation and the improved use and value of forest and pastoral products c) Decrease in the unemployment rate in the project areas
A3. Disparities affecting women and young people are reduced	a) Decrease in youth unemployment rate in the project a b) Number of women represented in Multisectoral Partnership Groups c) Number of GDA (or other local groups) managed by women in the forest and pastoral sector d) Number of private companies managed by women in the forest and pastoral sector
A4.The management and protection of forests of the state domain and rangelands are improved	a) Proportion of forests with a Management Plan b) Proportion of management plans actually commissioned by PV c) Decrease in burned or cleared surface areas in the projects areas d) Decrease in the number of offences committed in the state forests e) Number of Integrated landscape management plans developed and implemented f) Percentage of rangeland areas with a management plan g) Number of operational pastoral associations/groups.
A5. Degraded or threatened Agricultural landscapes are restored and upgraded	a) Existence of a mechanism for financing the investments on degraded private land b) Area of forest plantations on private lands c) Area of arboreal plantations on private lands d) Private land area incorporating domestication of forest medicinal and aromatic plants e) Private land surface area converted to agroforestry f) Evolution of the forest cover (trees or shrub) in degraded agro-silvo-pastoral landscapes
B. Improvement of the rights of the populations and their access to forest and pastoral resources	
B1. Access of local populations to forest and pastoral resources is improved	a) Positive evolution of regulatory provisions relating to access to forest and pastoral resources by local populations b) Forest area better used by local people as part of a joint-management agreement c) Number of contract/convention of joint management realized and implemented d) Number of Multisectoral Partnership Groups (or equivalent) created for the joint-management of forests and rangelands e) Number of GDA (or other local groups) active in the forest and pastoral sector
C. Strengthening of Forest and pastoral Governance	
C1. The regulatory framework is strengthened	a) Existence of a Forest Code revised in a participatory manner and its implementing rules b) Support to the formulation and implementation of the Pastoral Code c) Reduction of inconsistencies between cross cutting legal texts and the provisions of the legislation governing the management of natural resources
C2. The institutional framework is strengthened	a) Progress in the reorganization of the national institutions responsible for the management of natural resources b) Existence of a steering and monitoring structure of the institutional reorganization c) Existence of formal mechanisms for consultation, collaboration and cooperation between the different entities in charge of natural resources

C3. Transparency, accountability and commitment of stakeholders are improved	a) Number of consultation workshops organized b) Number of participant to consultation workshops c) Existence and enforcement of consultation procedures with stakeholders d) Number of management documents adopted during a participative process e) Existence and enforcement of information disseminating procedures f) Existence of documents specifying the duties of the different stakeholders in the management of natural resources
D. Capacity-building	
D1. Improved knowledge and monitoring of forests and rangelands	a) Existence of a 3rd forest and pastoral national inventory b) Existence of a national system for monitoring forests and rangelands
D2. The capacity of the actors in the management of natural resources are strengthened	a) Number of trained central administration staff b) Number of trained CRDA staff c) Number of private owners trained to the management of land having been subject to arboriculture, forest or agroforestry plantations. d) Number of GDA (or other local group) or GDA members trained e) Number of organizations or members of civil society organizations trained
D3. Additional resources are invested in the management of forests and paths	a) Evolution of investments in forest and rangeland management b) Amounts granted by international climate funding agencies and programs (GCF, FIP, etc.)

9. Project concepts to be implemented under the investment plan

Project/Program Title	MBD	Requested FIP amount (US$ million)			Private sector support	Expected co-financed		Amount of IP/FIP preparation grant	MDB fees[1]
		Loan	Grant	Total		MBD	GCF		
Project 1: Integrated Landscape Management in the least developed regions of Tunisia	WB		12 M$	12 M$	TBD[2]	100 M$	25 M$		-
Project 2: Integration of the tree in degraded private farmland	AfDB		10 M$	10 M$	TBD	10 M$	29 M$	250 000 $	-
Project 3: Sustainable management of Tunisian rangelands	FAO		10 M$	10 M$	TBD		40 M$		
Coordination of FIP projects		500 000 $							-
Total			**32 M$**	**32 M$**	**TBD**	**110 M$**	**94 M$**	**250 000 $**	-

Tunisia was selected in May 2015 by the FIP sub-committee to develop its investment plan with the clear understanding that there are no FIP resources available for its implementation. With support of its partners (MDBs), Tunisia defined and is implementing a pro-active strategy to mobilize necessary funds for the implementation of its investment plan from other bilateral and multilateral sources. Meanwhile, the Government of Tunisia hopes that its IP will be approved and that the FIP will contribute to funding the proposed investments.

10. Link between IP/FIP and UN-REDD+ strategic options

Tunisia has developed strategic guidelines for formulation of its REDD+ strategy though its R-PP The objectives of IP/FIP and proposed investment projects are aligned with these 5 pre-identified strategic options:

- Option 1: Improvement of the governance of forests, both regulatory and institutional.

[1] *To be completed by MDB submitting the project*

[2] *TBD = to be determined (prior approval of IP/FIP, according to available funds*

- Option 2: Increased involvement of local populations and the private sector (joint-management) for more sustainable management and protection of forests.
- Option 3: Better use and value of forest ecosystems, especially including ecosystem services (principle of protection by upgrading).
- Option 4: Reduction of the pressure on forests by the increase in income through valorisation of forest and rangeland products.
- Option 5: Improvement of the plantations and degraded forests sequestration potential through enrichment plantings, the use of adapted species and high quality seedlings.

Alignment of the specific objectives of the IP/FIP and of the investment projects with the REDD+ preliminary strategic options

Specific objectives and Investment projects	Preliminary Strategic REDD+ Options				
	Option 1	Option 2	Option 3	Option 4	Option 5
OS 1 : Strengthening governance of the forest and pastoral sector	X	X			
OS 2 : Maximize the protection, carbon sequestration and economic value of forest landscapes		X	X	X	X
OS 3 : Improve productivity, economic development and the sustainable management of rangelands			X	X	X
Project 1: Integrated Landscape Management in the least developed regions of Tunisia	X	X	X	X	X
Project 2: Integration of the tree in degraded private farmland			X	X	X
Project 3: Sustainable management of Tunisian rangelands		X	X	X	X

11. Other partners involved in design and implementation of the Investment Plan

The IP/FIP is the result of a participatory process which included representatives of all parties involved in the forest and pastoral sector: Administration services (at central and regional level), civil society organisations (International, national or local NGOs), private sector, groups of forest and rangeland users and technical and financial partners.

Technical and financial partners are engaged in a number of initiatives related to the management of natural resources in Tunisia. IP/FIP investment projects have been defined in synergy with activities under implementation or preparation, to ensure coherence of approaches and thematic and geographical complementarity.

Technical and financial partners will be involved in the implementation of the IP/FIP. The degree of involvement of each will be identified during the preparation phase of the implementation. Funding from the Climate Investment Fund (CIF) or the Green Climate Fund (GCF) could act as a catalyst to mobilize additional financing from the MDBs and other technical and financial partners.

12. Consultations with indigenous groups and local communities:

The participatory process for the development of the IP/FIP has included representatives of the local populations, through consultation and participation in focus groups and national workshops of civil society organizations. Field visits were also conducted in the Tunisian Northwest and Centre to meet local actors (deconcentrated administration services, GDA, etc.).

In addition, the development of the IP/FIP relied on documents that have been developed based on consultations. This is particularly the case of the 2015 - 2024 National Strategy for the Development And Sustainable Management Of Forests And Rangelands and of studies conducted in 2016 and funded by the UN-REDD Program within the Tunisia REDD+ readiness process.

The implementation of the IP/FIP also includes the development of consultation mechanisms at the local level that integrate local populations. Project 1 includes the participatory preparation of territorial plans and implementation through joint-management principles, assuring granting an important role to local populations and organizations.

13. Private sector involvement:

To date, apart from consultations (see above), the private sector has been associated with the management of the forests and

rangelands, its involvement being limited only to the purchase of wood lots or forest products put up for sale by tender by the Administration. The concessions regime developed to compensate for this has not been effective essentially due to institutional and regulatory constraints. In addition, reforestation carried out in the past on private lands by Forest Administration in the interests of the public good, and the difficulties with land utilization and wood sales faced by private owners, have helped fuel a climate of mistrust between the owners and the services of the State, resulting in damage of forest ecosystems.

The new forest and pastoral strategy (SNDGDFP-2015-2024) clearly mentions the importance of the development of public-private partnerships. This orientation has been widely included in the IP/FIP. Indeed, the concept of joint-management which will be developed within Project 1 will allow the involvement of the private sector, through forests user groups or small producers of forest products. Regulatory and institutions strengthening will enable the removal of all the barriers to private sector investment. Project 2 focuses on the development of effective incentives for owners to invest in the restoration and enhancement of their degraded (or threatened) agricultural land.

14. Other pertinent information:

The recent confirmation that forest and landscape restoration activities will be undertaken within the context of the Green Climate Fund funding provides an additional opportunity to demonstrate the value added of the FIP process, including in the context of semi-arid countries like Tunisia.

Introduction

1. The Forest Investment Program (FIP) is one of the three programs of the Strategic Climate Fund (SCF). The FIP represents, with the Clean Technology Fund (CTF), one of the two vehicles of the Climate Investment Fund (CIF). These funds, managed by the Multilateral Development Banks (MDBs) are to help developing countries to combat climate change. The FIP aims more precisely at supporting measures and raising funds to facilitate the reduction of emissions from deforestation and forest degradation and at promoting the sustainable management of forests. Its objective is to reduce greenhouse gas emissions (GHG), promote carbon sequestration and generate significant environmental and socio-economic co-benefits.

2. In May 2015, Tunisia was selected by the FIP Sub-Committee among pilot countries of the second phase of the FIP. A 250,000 US $ grant was allocated to Tunisia for the development of its FIP Investment Plan (IP/FIP), with the support of the MDBs, coordinated by the World Bank (WB), and in consultation with all stakeholders (national institutions, technical and financial partners, private sector, and civil society). At this stage, no funding is guaranteed to Tunisia to implement its IP/FIP.

3. The current Plan of Investment of the FIP (IP/FIP) was developed through an inclusive process, under the responsibility of the Tunisian Government, represented by the Ministry of Agriculture, Water resources and Fisheries (MARHP), with the assistance of the World Bank (WB), the African Development Bank (AfDB), the European Bank for Reconstruction and Development (EBRD), and the United Nations Food and Agriculture Organization (FAO).

4. Following an analysis of the environmental, socio-economical, regulatory and institutional context of the forest and pastoral sector, actions have been selected and distributed between three investment projects to act on the main drivers of deforestation and forest and rangeland degradation, in a transformational change perspective.

5. Tunisia IP/FIP is structured according to the operational guidelines of the FIP (CIF, 2010)[3]. It is accompanied by the recommended annexes and appendices (in a separate volume) aiming at keeping the collected data details and the exhaustiveness of results of analysis conducted during the realisation of the IP/FIP.

[3] *Climate Investment Funds, 2010. FIP Operational Guidelines (*Directives opérationnelles du FIP). 29 juin 2010. 26 p.

Section 1. Description of the country and sector context

6. Tunisia is a middle-income country of 10.9 million people with an average gross domestic product (GDP) per capita of US$4,400 (2014). In the last decade, Tunisia has been one of the fastest growing countries in the Middle East and North Africa (MENA) region with an average 5%, although recent social and political turmoil has led to an economic slowdown. With an estimated population of 11.4 million (compared to 9.56 million in 2000) and an area of 162 155 km^2, Tunisia is not densely populated, with just about 70 people per square kilometer. Its urban population, whose growth is now stabilized at about 1.3%/year (after 3.9% growth in the 1990s), is about 66%.[4] Poverty incidence halved between 2000 and 2014, from over 32% to 15.5%, and extreme poverty also halved during the same period.

7. Tunisia has undergone a successful transition to a democracy following the events of 2011. Despite difficulties, there is now a genuine commitment to a more transparent government which is accountable to citizens, and there has been progress in decentralization and development of consultative, participatory processes. These broad changes provide an opportunity also for transition to a natural resource management regime which brings long term social, economic and environmental benefits. The *2016-20 Strategic Development Plan* currently under finalization includes five principal axes, all highly relevant to the FIP: good governance and administrative reform; human development and social inclusion, from a low cost economy to an economic hub; balanced regional development and a green economy.

1.1 Forest and pastoral resources

8. There is currently no formally and universally accepted definition of the forest in Tunisia[5]. It is an obstacle to the improvement of knowledge and the monitoring of these ecosystems. By default, the definitions used in this document are

- *Forest*: surface area over 0.5 hectares with trees with height above 5 m and a tree cover of more than 10%, or with trees that can grow as much in situ (are excluded of that definition the predominantly agricultural or urban areas). [6]
- *Rangelands*: not cultivated land that is covered with spontaneous or introduced vegetation, herbaceous or ligneous, which is used as pasture for livestock [7] (forest rangelands are excluded from that definition).[8]

9. Available data related to forest and pastoral resources are presented in detail in Appendix 2.

[4] *Estimated birth rate is of 16.4 births/1000 population and total fertility rate is estimated at 1.9 children born/woman, and total infant mortality rate 21.6%.*

[5] *The Forest Code defines the forest as "all plant formation of natural or artificial origin composed of one or several species of tree, shrubs or brush in a pure or mixed state; the first national forest inventory (DGF, 1995) defines the forest as "species or group of species with a covering of at least 10% of the wooded area, a minimum crown width of 15 m and a minimum surface considered of 4 ha or a density of more than 250 seedlings per hectare", and a forest species as "any woody plant species existing in forests and able as adults to reach at least 4 meters in height and 7 cm for the diameter at 1.30 m'; the second national forest and pastoral inventory (DGF, 2010) presents two contradictory definitions of the minimum surface area to be taken into account.*

[6] *Forest definition according to FAO*

[7] *Definition from the Forest Code (article 3), used in the second national forest and pastoral inventory*

[8] *The forest rangelands can be divided into three categories:* maquis *rangeland; scrubland rangeland; and meadows and lawns on limited areas isolated within the forest or the* maquis*.*

1.1.1 Forest resources

10. The real actual forest surface in Tunisia is between 750 000 and 850 000 ha. Taking into account "land intended to be used as forest" (as opposed asylvatic land)[9], including non-wooded *garrigue* (scrubland) and *maquis* (bush), brings this area to more than one million hectares. This data is however subject to some degree of uncertainty (see Appendix 2).

11. These uncertainties and the age of the last national forest and pastoral inventory highlight the need to update and refine the knowledge of the state of the forest and pastoral resource through a new national inventory, which shall be conducted according to a statistically and scientifically reliable and rigorous methodology. Furthermore, the absence of a precise and official definition of the forest at national scale and confusion linked to the notion of "land suitable for forestry" bring to light the necessity to precise and formalize the national definition of forest in Tunisia. It turns out to be crucial in the framework of the REDD+ process, because areas and activities eligible will depend on this definition

12. Most forests are located in hilly areas in the Northwest, Northeast and the Western-Centre of the country and provide for generation of the majority Tunisia's water resources. . This highlights the significant role of forests in the protection of water resources and soils (particularly against erosion) in the Tunisia, which can be characterised as water-scarce.[10] Most of the forest areas belong to the State Forest Domain (SFD). The private forests represent less than 5% of the whole forest surface area in Tunisia (See Table 1 and Appendix 2). As a general rule, Tunisia has a clear land tenure regime, which recognizes individual property through title deeds. Many reforms have been made to this end since the country's independence (1956) (see Table 2 for the different land tenure regimes). The Tunisian forests are however characterized by a complex land tenure situation related to the inaccuracy of limits, the expiry of title deeds, the destruction or displacement of property boundary markers, the illegal occupation of the forest domain and the lack of resources, coordination and monitoring by the administration, as well as the length and heaviness of land procedures and formalities resulting in a delay in supplementary surveying or land tenure clarification operations or legal proceedings of land tenure offences. Promoting co-management to allow local population to benefit from forest resources is an important issue for the forest and pastoral sector. Listed in the 2015-2024 SNDGDFP, the land tenure reorganization and clarification operations were initiated by a specific study carried out with the support of the UN-REDD Program. [11]

13. They must be pursued by further studies (inventory, creation of a digital database) as well as the definition and implementation of a realistic national action plan. The land tenure reorganization must necessarily come along with strengthening or revision actions of regulations, institutional support (particularly in terms of organisation and coordination) and training of the relevant departments. In view of the length of the process and of its transversal and political dimension, the stabilization of the land tenure situation can only be undertaken by the Tunisian State and its national institutions.

Table 1. Total land use (x1000 ha)

TYPE	CURRENT	PREVIOUS (2003)	CHANGE (%)
Country	16 361	16 361	0
Land area	15 536	15 536	0
Inland area	825	825	0
Forest area	1 021	884	1.8%
Other land	4 572	4 868	-0.75%
Agric. land (% of land area)	64%	63%	0.22%
Arable land (% of land area)	18%	18%	0.69%

[9] *Whose conditions do not permit the development of a forest*

10 Approximately 410 m3 of renewable water resources per capita annually (WDI)

[11] *Hamdi & Lahmayer, 2016*

(Source: MARHP)

Table 2. Land Tenure

CATEGORY	ESTIMATED AREA (ha)	REMARKS
Private land (*melk*)	4.7 million	Including registered lands, lands with formal and informal ownership title
Collectively owned land	1.5 million	Lands owned by tribal groups
Public land (terres domaniales)	820 000	Private and public state land
Habou land	100 000	Land owned by religious Islamic institutions
Desert areas	?	Unclear regime

(Source: MARHP)

1.1.2 Pastoral resources

14. As for data related to forests, data related to rangelands (surface areas, productivity, land tenure status, etc.) varies according to the sources and must be used with caution. The DGF official estimate, taken from the National Forest and Pastoral Inventory (DGF, 2010) evaluates the Tunisian rangeland surface area to 4.5 million hectares in 2003, i.e. 27% of the whole country surface area (Appendix 2).

15. As for forests, significant uncertainties on the state of the pastoral resources and the length of time since the last IFPN illustrate the need to update and refine this knowledge by a new national inventory.

16. The majority of the rangelands are located in the south of the country (82% of the total rangeland surface area, see Appendix 2. Substantial pastoral lands also exist in the central region of Tunisia and notably in the western central region. This geographical distribution gives the rangelands a particularly important role in the fight against desertification. Their conservation is therefore a crucial issue for Tunisia.

17. Tunisian rangelands tenure statuses are numerous. Indeed, there are state-owned rangelands, private rangelands which belong to individuals and are subjected to common law regulations (and notably the Real Rights Code), collective rangelands which belong to communities and are subjected to collective land legislations, and alfa grasslands. Most of the rangelands are collective or private (Appendix 3). However, real knowledge on the Tunisian rangeland tenure is still largely incomplete, most of the rangelands not having been precisely delineated and mapped. In addition, this 'collective rangeland' statute is complex and in reality covers different situations. Collective rangelands can be family rangeland, fraction, tribe or just collective rangeland. Depending on the case, access and management procedures to theses rangelands differ, which can be an obstacle to their sustainable management. It is important to take into account this specific characteristic when defining programs for sustainable management of collective rangelands.

18. In Tunisia, traditional farming and livestock raising follows extensive land use practices. Livestock feed is based on perennial or annual vegetation from the natural rangelands and on supplements during the drought periods. According to the Second National Forest and Pastoral Inventory, the annual forage supply of the rangelands is respectively of 304 and 677 million forage units (FU) for 2005 and 2006 and would contribute by 10% to 25% to livestock intake needs (evaluated to approximately 2.8 billion FU annually).[12] This illustrates the fact that the national livestock herd is too large compared to natural forage resources and the current state of degradation of the Tunisian rangelands. Beyond protection and improvement activities for the productivity of the rangelands, it is also essential for the State to develop a true management and control policy on the size of the herds.

[12] Boussaidi N., 2005. *Parcours en forêt et risque de dégradation des potentialités pastorales dans la IV^e série forestière de Mekna (Tabarka-Tunisie).* Université de Tunis-Carthage (INAT). Master de l'INAT en lutte contre la désertification.

1.2 Economic importance of the forest and pastoral sector

19. Forest ecosystems in Tunisia are very valuable, by providing a wide array of goods and services that improve the well-being of the Tunisian society as a whole, although its value remain mostly non-marketed. Pastoral and forest ecosystems provide supply, regulatory and cultural services that are crucial issues for Tunisia. The considerable significance of the role of forests in the protection of water and soil and that of the rangelands in combating desertification should particularly be stressed. There is great potential to improve management of forests and rangelands and increase the economic, environmental and social services that they provide.

1.3 Demographics and socio-economics of forest populations

20. Approximately 730,000 people live in or near forested areas [13] - nearly 7 % of the total of the Tunisian population, and 21% of the rural populations - of which near 30 000 live in forests. As for the whole of Tunisia, forest populations are characterized by their youth (although only 34% of the forest population is under 25 years, against 46% nationally), high activity rate (78% in forest governorates) and developed multi-activity.[14]

21. Revenue from forests are mostly related to the supply of fodder (58% of total forest revenues) and logging sites (28%). Indeed, the forest industry represent more than 7 million days of work/per year, the equivalent of over 35 000 fixed full-time jobs (Helal et al., 2007). These revenues are supplemented by profits from coal production (5% of total forest revenues) and honey (2%) and the pine seed crop or Aleppo Pine pinion (1%) and other NTFPs (over 5%).

22. As a general rule, forest populations are characterized by a much larger degree of poverty that the national average and a strong dependence of their income on farming produce and forests. About 70% of poor households live in rural areas and unemployment rate reaches 30% in forest governorates, while the national average is less than 20%. Over a third (34%) of the forest population lives below the poverty line (against 26% nationally). Household incomes of forest peoples, well below the national average, are highly dependent on agricultural and forest products, which each account for about 40% of total household income. In some governorates (Siliana, for example), the share of forest income to the total household income can exceed 60%.

23. The poverty of forest areas causes an important rural exodus phenomenon, with important, although not entirely known, impacts. In particular, youth migration deprives rural areas of its limited skilled young labor force while feeding the ever-growing poor suburbs of urban Tunisia. In addition, it further adds to the social pressure in urban areas that are unable to absorb the rapidly growing numbers of young unskilled workers. Migration is seen as traumatic by many—an exile from family and community.[15]

24. In addition, the phenomenon of poverty in rural areas promotes unsustainable depletion of natural resources for short-term livelihood benefits, at the expense of their long term conservation and sustainable management. Socio-economic development and poverty reduction in these disadvantaged territories represent therefore a significant way to reduce the anthropogenic pressure on the natural environment and promote its protection.

[13] *Nabeul, Ben Arous, Ariana, Manouba, Bizerte, Béja, Jendouba, Zaghouan, Siliana, Le Kef, Kairouan, Kasserine, Sidi Bouzid et Gafsa*

[14] *DGF & FAO, 2012*

[15] *World Bank* Tunisia. Breaking the Barriers to Youth Inclusion. *2014b 134 p.*

1.4 Progressive trends of the forest and pastoral resources

1.4.1 Direct and indirect deforestation and forest and rangelands degradation drivers

25. In this document, '*direct factors'* are defined as phenomena directly leading to a loss or degradation of the forest and/or pastoral cover, while the *'indirect factors'* relate to the broader context that indirectly leads to loss or degradation.

26. In Tunisia, the direct deforestation and forest degradation factors are forest fires, forest clearings, illicit timber extraction, and overgrazing.

- On average, since 2011, *forest fires* concern an area of 3000 ha/year. However, data from ongoing research suggest that between 2001 and 2010 that the area affected by fire would be of about 13 000 ha, with annual rates of 1 300 ha (DGF, 2016). The sharp increase in area burned since 2011 is due to the outbreak of arson following the events of social protest 2010-2011.
- *Forest clearing* (for expansion of cultivated areas or habitat) is an important deforestation factor, although it seems to concern only limited areas of about 1 000 to 1 400 ha since 2011.
- *Illicit timber extraction* is a relatively important factor of forest degradation (by local people for the production of firewood or charcoal or by private people/companies for the production and marketing of timber or timber industry. Despite its importance, this fact cannot be quantified.
- *Overgrazing* is particularly problematic in the cork oak forests in the North-West, because it causes a slowdown or halt of the natural regeneration process. In 2007, nearly 30 000 ha of cork oak forest and had covered less than 50% and required silvi-cultural operations regeneration (DGF, 2007). The different grazing rates of forest formations were assessed at between 50 and 70% (OTEDD, 2009).
- *Overgrazing and overexploitation of rangelands*, which affect about 2 million ha (DGF & World Bank, 2015), are mainly explained by increased livestock, despite shrinking rangeland areas.

27. Despite the uncertainty attached to the available data, gross deforestation concerns relatively limited areas in Tunisia. On the other hand, the forest degradation phenomenon, although reversible, affects large areas. In 2000, degraded forests (scrub, scrubland and forests with very low vegetation cover) covered more than 380 000 ha, or 40% of the total Tunisian forest area (DGF & World Bank) 2015. In the mountainous forest ecosystems of Northern Tunisia, the forest populations collect forage and wood in quantities above the resources regeneration capacity (DGACTA & FAO, 2006).

28. The main direct factor of clearing and degradation of rangelands is linked to land use conversion, particularly for crop and arboriculture. Alfa grass where the cover is low to medium are the most threatened by land clearing The pastoral area cleared in 2012 has been evaluated to 8 600 ha (FMB & World Bank, 2015). Given the variability of the results and methodologies used in the various studies available addressing this issue, there is at present no specific data on the rangeland area cleared annually and the figures must be considered with caution.

29. Overgrazing and over-exploitation are significant factors of rangeland degradation. They affect about 2 million hectares (DGF & World Bank, 2015). Overgrazing is explained by the increase in (or stabilization) of the herd, despite the decrease in rangeland areas. Over-exploitation of rangelands consists in the illicit removal of multi-annual wood species, still widely practised, in particular by the poorest fringes of the agro-pastoral populations. This phenomenon cannot be quantified exactly for lack of available data, but all specialists agree that it is important and causes more impacts that overgrazing.

30. In most cases, the degradation of rangelands is reversible, grazing courses can be restored through temporary grazing bans, seeding operations and/or the implementation of grazing plantations to revitalise the vegetation growth.

31. Many indirect factors have a negative impact on the surface area and/or quality of forests and the pastoral environment (see Appendix 6). These indirect factors are mainly interdependent and

interconnected. However, they have been grouped in three categories according to their level of importance (assessed after the analysis of the results of the conducted interviews and the consulted bibliography) in Appendix 7 in order to prioritize the activities planned by this IP/FIP.

Table 3. Importance of indirect deforestation and forest and rangelands degradation drivers

Category	Indirect Factors	Importance
Institutions, regulations and national policies	Low efficiency of the Administration[16]	High
	Low adjustment to legal dispositions	High
	Agricultural and pastoral policies non- or little adapted	Medium
	Inadequate application of the law	Medium
Social or environmental context	Lack of confidence by the population and private sector towards the Administration	High
	Poverty of rural and forest populations	High
	Low level of information of the population about the benefits provided by forests	High
	Complexity of the land tenure situation	High
	Destructuring of traditional societal systems	Medium
	Climate change	Low
Shortcomings in the management or knowledge of forests and rangelands	Lack of knowledge on forest and pastoral resources	High
	Forests and rangelands management mode little adapted to the socio-economic context	High
	Lack of a system for monitoring forest and pastoral environments and the related activities	High
	No forest or rangeland management plans	Medium
	Low valorisation of the existing of carbon sequestration potential	Medium

1.4.2 Reforestation and plantations

32. Tunisia set about making a lot of reforestation efforts in the last decades, through their two former national strategies (reforestation national strategy 1991-2000 and national strategy for the development of the forest and pastoral sector 2002-2011). Between 1991 and 2000, 186,000 hectares have reportedly been reforested in the framework of the National Forest Program. Appendix 7 shows the official figures as to the annually reforested surface areas since 2001, by the State forest administration.

1.4.3 Assessment of the evolving trends of the forest and rangeland areas

33. *Forests*: In spite of the differences in methodology between the two national forest inventories (see Appendix 2), data indicate that forest stands have increased by around 108,000 ha between mid od 1990s and 2000 (an average increase of about 10,000 ha per year). The burnt and cleared areas have, however, increased since 2011 (see Appendix 6), linked to the uncertainties surrounding the socio-political transition. It will be particularly appropriate to monitor the progression of this dynamics in the years to come. The low average productivity of the Tunisian forest stands assessed by the second IFPN (increase in volume by hectare still under 2 m^3/ha/year) illustrates a relatively significant state of degradation of the Tunisian forests, which can result in a low tree cover.

34. *Rangelands*: Recent assessments estimate rangeland clearings at around 8,600 ha per year (DGF & World Bank, 2015) mainly for agricultural purposes. Rangelands with low vegetation cover affected by a strong erosion (wind and water) are estimated at 1.8 million hectares, mostly in southern Tunisia, an illustration of degradation, while 125 000 ha, are affected by overgrazing, mainly in the Tataouine Governorate (FMB & World Bank, 2015).

[16] This observation is mainly related to the lack of human, technical and financial resources of the Administration, to internal organizational problems in the Administration and a lack of coordination between the different institutional structures.

35. Additional data on the changing patterns of forests and rangelands is provided in Appendix 8. The establishment of an effective systems for monitoring ecosystems and forest and pastoral activities is essential for the development and implementation of sectoral strategies and policies for forest and rangelands management, and is included in the 2015-2024 SNDGDFP. Preliminary studies have been initiated with the support of the UN-REDD Program (DGF, 2016). Supported by FAO, the DGF has already initiated an assessment of land use changes (according to the IPCC categories) and a more precise definition of the types of land cover at the national level. This system - which relies on a range of software and databases available under Open Foris (set of tools developed by FAO, free and open source) - should also be better developed. The national system for monitoring forests and rangelands should be compatible with the requirements of the REDD+ process and be able to play the role of MRV system.

1.5 Sequestration and greenhouse gas emissions in the forests and rangelands

36. Complete sequestration and greenhouse gas (GHG) emissions data in the forests and rangelands are presented in a Table 4 below (see also Appendix 9). According to the Tunisian GHG inventory, the country might have emitted approximately 46 million tons of GHG CO_2 equivalent ($MteCO_2$) in 2010, regardless of source. The energy sector, which represents around 60% of the emissions, is the sector that contributes the most to raw GHG total emissions at the national level. The Agriculture, Forestry and Other Land Use (AFOLU) sector comes second with 11.2 $MteCO_2$, representing a quarter of the national emissions.

Table 4. Balance of the inventory of the forest and rangeland GHG in 2010 in Tunisia

Sources of GHG emission / absorption	Emissions				Absorptions	Total net emissions ($MteCO_2$)
	CO_2 (Mt)	CH_4 (Mt)	N_2O (Mt)	Total ($MteCO_2$)	CO_2 (Mt)	
Lands	**2 850,4**	**-**	**-**	**2 850,4**	-6 134,9	**-3 284,5**
Forests	-	-	-	-	-6 134,9	**-3 284,5**
Rangelands	2 850,4	-	-	2 850,4		
Other sources and emissions outside CO_2 of lands	**34,4**	**0,1**	**0,0**	**32,8**	**-**	**32,8**
Emissions from biomass burning	26,6	0,1	0,0	32,8	-	**32,8**
Forests	*26,0*	*0,1*	*0,0*	*29,2*	-	***29,2***
Rangelands	*0,6*	*0,0*	*0,0*	*3,62*	-	***3,6***
Other (timber products)	**1 215,6**	**-**	**-**	**1 215,6**	**-**	**1 215,6**
Total of emissions/absorptions	**4 092,6**	**0,1**	**0,0**	**4 098,9**	**-6 134,9**	**-2 036,0**

37. The GHG emissions of the AFOLU sector are dominated by the use of wood (mainly energy wood), with 3.6 $MteCO_2$, and by land-use and livestock farming (2.9 $MteCO_2$ emissions for each of them). It should however be noted that estimates on emissions related to wood energy removals are based on extrapolations on data from studies dating back to 1997. The age of this data implies a degree of caution in the interpretation of results. GHG emissions related to forest/rangeland fires are still low (around 32 $kteCO_2$, i.e. 0.3% of the AFOLU sector's emissions), because of the relatively small burnt surface areas (723 ha in 2010; see Appendix 6). It should however be noted that the burnt surface areas have considerably increased the following years, which should increase the AFOLU sector's part in GHG emissions. The AFOLU sector is also a source of carbon absorption *via* the existing forests and reforestation (in forests and rangelands), as well as *via* arboriculture (olive plantations and other fruit trees). Globally, the AFOLU sector will have absorbed 13.6 $MteCO_2$ in 2010, which thus compensates the sector's total emissions, and allows a net absorption report of 2.4 $MteCO_2$.

38. Estimation of absorption by source (see Table 5) highlights that:

- 58% of absorption could come from storage of carbon from soils (and litter), (against 42% corresponding to aerial and belowground biomass carbon sequestration). Therefore, it is essential to take into account

soil and litter in assessing the impacts in terms of GHG sequestration and emission of upcoming forests and rangeland management projects, and especially of the investment projects defined in this IP/FIP.

- Reforestation plays a decisive role in the absorption (4 $MteCO_2$, or 65% of the total removals). Afforestation activities, forest or pastoral, will always be determining activities to increase the absorption of carbon in Tunisian natural environments.
- Due to over-exploitation, rangeland soils (remaining rangelands) are net carbon emitters. In contrast, forest soils (at the level of forests remaining forest) retain a sizeable carbon absorption capacity. An improved management of rangelands will therefore significantly improve their carbon footprint, and a better forest management will strengthen their contribution in GHG in Tunisia.

Table 5. Carbon absorption by forests and rangelands in 2010

CO2 absorbers	Absorptions ($kteCO_2$)			Proportion
	Biomass	Soils	Total	
Forests still forests	-867	-1,268	**-2,135,4**	35%
Rangelands still rangelands		-		
Forests reforestation	-1,030	-2,316	**-3,999,5**	65%
Pasturelands reforestation	-654			
TOTAL	**-2,551**	**-3,584**	**-6,134,9**	100%
Proportion	42%	58%	100%	

(*Source*: Tunisian GHG inventory of 2010 (MEDD, 2015)

39. The lack of data specific to Tunisia (initial state of reforested areas, reforestation distribution according to the planted species, data on reforestation biomass evolution and soil carbon, etc.) highlights the significant need to improve the knowledge base, especially on the reforestation results in terms of biomass stock and soils carbon variation (in existing reforested areas and forests or rangelands).

40. To sum up, the analysis of the GHG inventory results leads to four main conclusions:

- Forest and rangelands reforestation significantly contributes to sequestration from the AFOLU sectors. Strict species selection and monitoring will increase the effectiveness of these programs.
- Assessments of net GHG emission of not reforested rangelands confirms their extreme degradation.
- Arboriculture plays an important role in the sequestration of carbon in Tunisia and represents a strong potential for improving the national GHG balance.
- The importance of soil carbon makes it essential to take it into account in all carbon print. Any management, reforestation action in forests and rangelands must thus integrate the soil carbon issue.

41. Despite the overall positive assessment of the AFOLU sector in terms of GHG emissions/removals, carbon sequestration could be improved (see Section 2) through support for increase of the forest surface area by plantations, arboriculture or agroforestry in degraded private land, or the improvement of the productivity of the forests and the reduction of degradation of the forest and pastoral ecosystems through sustainable management mechanisms.

1.6 Forest and pastoral governance

1.6.1 Administration of the forest and pastoral sector

42. The functioning and performance of the natural resources sector administration, in general, and of the Forest administration, in particular, are hampered by a number of obstacles. One of the reasons is that the Administration has varied roles and responsibilities that combine control, technical, and socio-economic development functions. Another reason is the lack of coordination between the multitude of actors intervening on forest and rangeland development and management. Finally, the lack of confidence of forest populations and the private sector in the administration is detrimental to the protection of ecosystems and

their economic valuation. This situation results in negative consequences in terms of economy (low use and value of forest and pastoral products), environment (unsustainable use of natural resources and weakening of ecosystem services) and climate (GHG emissions and low carbon sequestration).

43. However, recent initiatives aimed at rationalizing the institutional framework are positive and reflect a strong political commitment. For example, the adoption of the *Budget Management by Objective* (GBO) aims to optimize the management of state finances and improve the efficiency of public action. One of the six newly defined MARHP programs, which focus on "Forests" and "Conservation of Water and Soil" will be an important asset for a coherent and sustainable management of natural resources.

1.6.2 Deconcentration and decentralisation process

44. By enabling future regional economic development and reducing disparities between urban areas and rural areas, the ongoing decentralization process is also likely to greatly improve good governance of natural resources at local level. It will empower local authorities and resource users, and strengthen participatory planning and implementation of local development.

45. The recently created *Ministry of Environment and Local Affairs* (MEAL) is leading the design and implementation of the decentralization process by supporting the development of national government policy on decentralization, while promoting local development and accompanying and supporting local municipalities in the management of local affairs, the implementation of environmental policies, and the preparation and execution of development plans, programs and projects in collaboration with concerned ministries and institutions.[17]

46. A forthcoming law will support the creation of a new decentralized system, which will better define shared responsibilities between local governments (*collectivités territoriales*) - including districts, divided into regions, themselves subdivided into legally, financially and administratively autonomous municipalities – and local communities and private sector. In addition, within the new decentralization and deconcentration configuration, the *Regional Commission of Agricultural Development* (CRDA), which are already deconcentrated operational agencies at regional level, will be further empowered and will be reorganized accordingly.

47. The ongoing decentralization and deconcentration process will create an institutional environment conducive to the achievement of main FIP objectives to better involve local state and non-state stakeholders in reducing deforestation and degradation of forests and rangelands, and mitigating the effects of climate change.

1.6.3 Decision making mechanisms

48. Institutional reforms and decentralization/deconcentration policies will greatly improve the efficiency and responsiveness of the forest administration, by promoting coherence and consistency in decision-making and strengthening collaboration between the main concerned institutions. Recent assessments have correctly stressed the negative impact of the current fragmented organization of the MARHP and the absence of a consolidated structure of the management of natural resources.

49. Reforms and policies are likely to consistently enable local populations, socio-professional associations/groups, civil society and the private sector to fully participate in decision-making processes, thereby strengthening their involvement in the management of natural resources, promoting an inclusive consultation process and bottom-up planning approaches, and eliminating the present climate of distrust towards the administrative services.

[17] *The territorial definition of local municipalities, along with their functional responsibilities and fiscal transfer mechanisms are under development and municipal elections are expected to take place in March 2017.*

50. It may be expected that the protection and preservation of the forest and pastoral resources – which is the main objective of the FIP - will be guaranteed with the participation of local populations, will greatly improve local livelihoods.

1.6.4 Participatory consultation mechanisms with in the forest and pastoral sectors stakeholders

51. The compartmentalisation or fragmentation of the MARHP, in general, and the DGF, in particular, is linked to the absence of any formal or structured mechanism of coordination and/or consultation within the Administration or with the technical and administrative partners of the sector. Consultations are often informal and conducted on an occasional basis, when they are made necessary by the preparation of the National Development Plan, intradepartmental program reviews at the MARHP or their assessment programs. These consultations are a data and information sharing exercise on the progress of the activities of the different structures. This low degree of coordination is translated, as mentioned above (see § 40 and 44) by a low level of coordination between the different administrative structures involved, who work on similar or complementary themes (forest, route, agriculture, soils, water).

52. Similarly, no structured specific device is dedicated to the dialogue with the private sector, local communities and civil society. Their participation is sometimes requested, such as for regional and national workshops and consultations organized for the preparation of the National Forest Program, the development of the National Strategy of Sustainable Management of Forests and Rangelands (2015-2024), studies in preparation for the REDD+ (with the support of the UN-REDD Program and FAO) and preparation of this IP/FIP and the R-PP (see Annex 2). Consultations are also held during the development of the integrated and participatory forest planning PV, but their quality is often insufficient due to a lack of expertise by the consulting bureaus involved and a lack of supervision and control by the Forest Administration. Such a situation reinforced the confidence gap of the populations towards the Forest Administration and the low degree to which the people make forest management theirs, indirectly harming the improved use and value and the protection of forest and pastoral ecosystems.

1.6.5 Information, communication and transparency

53. Information, communication and transparency within the MARHP are inadequate. Existing data on the forest and pastoral sector is not valued and is communicated in an adequate manner. The lack of communication towards some key departments such as the Ministry of Finance translates into a low consideration for the forests and rangelands economic value and issues, which leads in turn to penalizing budgetary reductions for the development of the sector.

54. As a general rule, budgetary control procedures implemented in the Tunisian Administration promote transparency, although their heaviness affects the performance of the activities and budgetary effectiveness (increased costs). More than 70% of the total budget of the National Forest Program is dedicated to casual or construction labour used for forestry work, which complicates the monitoring of the use of the corresponding budget item and adversely affects the transparency of the sector. However, the recent adoption by the MARHP of the Budget Management by Objective (BMO) should improve the sector's transparency. In addition, the management of projects co-financed by the development partners is quite transparent, insofar as technical and financial monitoring and reporting procedures are in line with those of the financial partner (conditionality, procedures manual, procurement plans, format and periodicity, independent annual audit, etc.).

55. In conclusion, on the whole, (beyond aspects related to regulatory issues and to policies and strategies, detailed in sections 3.1 and 3.2 and the corresponding Appendices) the forest and pastoral sector governance in Tunisia is largely insufficient. Despite the asset of the grouping of the majority of the players involved in the management of natural resources within the MARHP, the current institutional organization harms the implementation of a sustainable management of forests and rangelands, both at central and local levels. Decision mechanisms are almost exclusively vertical, and consultation, information, communication and outreach actions are largely inadequate. To improve the management and protection of forest and

pastoral ecosystems, it is essential to remove these obstacles by adapting the institutional organisation linked to the management of natural resources and developing formal consultative processes supporting the participation of local populations and the private sector in decision making and in the sustainable management of forests and rangelands. The proposals made in the current IP/FIP through investment projects (see section 6) will enable to support the Administration to create, formalize and implement such mechanisms.

Section 2. Opportunities for GHG emissions reduction

56. This section presents sectoral activities and transversal actions that will support mitigation of GHG emissions, and the improvement of carbon stocks related to forests and rangelands.

2.1 Sectoral activities

57. A sustainable approach to forest and rangeland management needs a range of distinct and complementary activities, such as the following:

- Support to development and implementation of forest management plans (at present, only 50% of the State Forest Domaine lands have plans, and half of these are obsolete);
- Support to development and implementation of participatory co-management systems involving the local population and the private sector;
- Reinforcement of forest monitoring;
- Strengthened fire management systems;
- Support to reforestation, forest and agro-forestry plantations;
- Support to participatory rangeland management plans, pastoral fodder crop plantations and selective degraded rangelands enclosures;
- Support to promotion of species that are climate resilient;
- Support to improvement of agricultural practices, especially neighboring forest lands;
- Support to a domestic energy strategy focusing on fuelwood plantations, improved stoves and improved carbonization techniques.

2.2 Enabling cross-disciplinary activities

58. Revised regulations will make better use of the different administrative structures that intervene in the management of natural resources, by building capacity in these structures and harmonizing national strategies and policies harmonization. They will particularly:

- Support reinforced management tools, including improved inventories and monitoring systems consistent with MRV;
- Improve the technical standards for the sustainable management of forest and pastoral resources;
- Create a cross-disciplinary research program adapted to the needs of the agro-silvo-pastoral sector;
- Develop information, communication and awareness building actions, especially at local level;
- Create and implement a range of measures to better associate all local stakeholders I the decision-making process;
- Support to improvement of forest and land tenure regimes;
- Develop incentives and financing mechanisms.

59. These cross-cutting activities will improve forests and rangelands management and protection, in particular through a better economic evaluation of these ecosystems, indirectly reinforce the protection of the carbon stock captured in their biomass and in the soil. These activities would become a point of

reference for sectorial activities that would reinforce their positive effects on the forest and pastoral sector, and would allow to support the changes in forest and pastoral policies and practices, which constitute one the main objectives of the Forest Investment Program.

Section 3. Legal and policy framework

3.1 Legal framework analysis

60. A detailed analysis of the Tunisian legal framework for the management of forests and rangelands is provided in Appendix 12. The legal framework of the management of Tunisian forests and rangelands presents several advantages, but also many constraints that must be removed to encourage the development, enhancement and protection of forest and pastoral resources. The forest code should be revised in order to (i) facilitate access to resources for local communities and the private sector, (ii) highlight the role of socio-economic development played by the Forest Administration, (iii) limit the constraints on forest operations by private owners and (iv) give greater importance to rangelands and take into account their specificities. It is also necessary to improve the coherence between the provisions of the forest code and its implementing rules and the transverse texts having an impact on the management of forest and pastoral resources. Partial revision of these cross cutting texts and/or the implementation of exceptional provisions to better take into account the specificities of the pastoral and forest sector should be considered.

3.2 National policies and strategies

61. A detailed analysis of the national policies and strategies in relation to the forest and pastoral sector is presented in Appendix 13.

62. Although management of natural resources and farming activities is the responsibility of one Department and different projects and sub-sectoral programs are implemented on the ground by the same structures (CRDA), agricultural development policy shows a certain separation between purely agricultural productive sub-sector strategies and those relating to the management of natural resources (water, forest and rangeland). Harmonization processes do exist between the different strategies but are not systematic, particularly between the National Development and Sustainable Management Strategy for Forests and Rangelands (*Stratégie Nationale de Développement et de Gestion Durable des Forêts et des Parcours;* SNDGDFP) and other sub-sectoral strategies. This illustrates the need for a better coordination and harmonization of the strategies constituting the agricultural policy.

3.3 Forest Investment Plan and REDD+ process

63. The progress status of the REDD+ process in Tunisia is presented in Annex 3 and, in a more complete version, in Appendix 14.

3.3.1 Compatibility of the institutional, political and legal framework with REDD+ mechanism

64. The global objective of the REDD+ is to fight against climate change from GHG emissions stemming from deforestation and forest degradation, with 5 specific objectives: (i) Reducing GHG emissions due to deforestation; (ii) Reducing GHG emissions due to forest degradation; (iii) Storing forest carbon stocks; (iv) Sustainably managing forests; (v) Reinforcing forest carbon stocks.

65. Despite the difficulties described in sections 1.6, 3.1 and 3.2 (and corresponding Appendices the Tunisian authorities have a real awareness of the threats posed by climate change, as illustrated by its mention in the Tunisian Constitution and its incorporation into a number of strategies. The National Strategy for the Development and Sustainable Management of Forests and Rangelands (NSDSMFR) 2015-2024 (see section 3.2 and Appendix 13) clearly mentions the mitigation of the climate change effects among its objectives (component 5 of objective 3), which comes as one of the forest sector's priorities in the three

large regions (North, Centre and South) in the 2015-2024 Regional Action Plan of the NSDSMFR. The implementation of the NSDSMFR may however meet some constraints (see Appendix 13). In this respect, the Tunisian Investment Plan of the Forest Investment Program could constitute an important support and facilitation tool for its implementation.

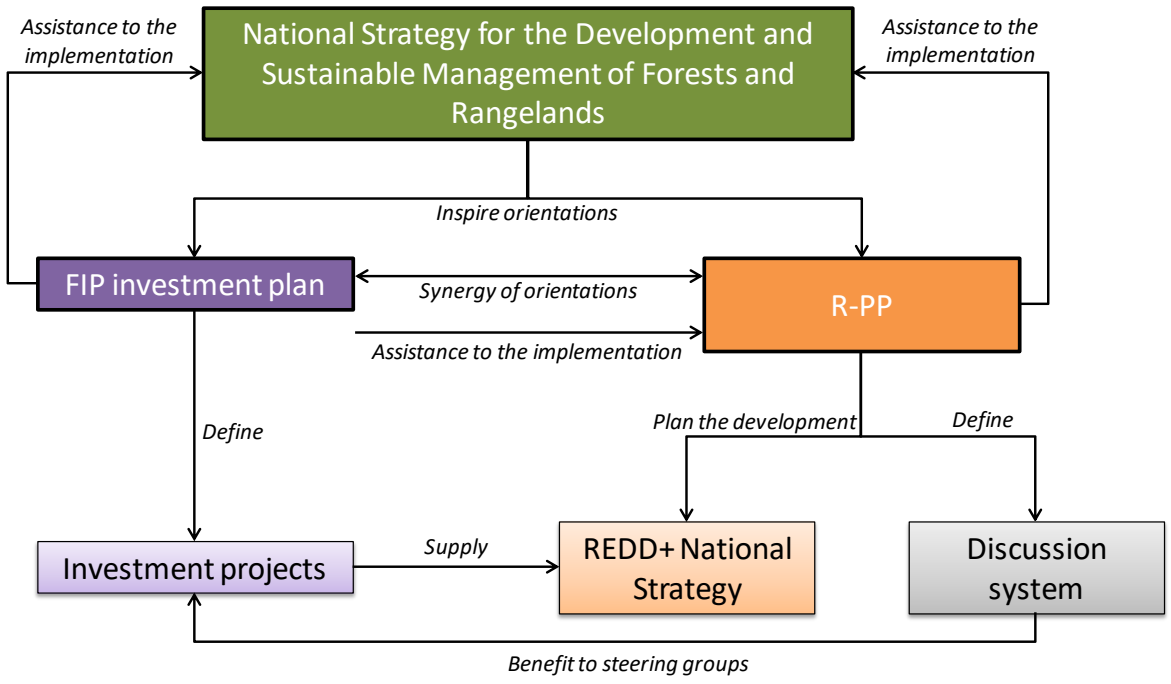
3.3.2 Interconnection between the FIP and REDD+ process in Tunisia

66. The Forest Investment Program (FIP) is a funding instrument that aims at supporting countries to initiate the reforms which have been identified in their REDD+ strategy giving details of their policies, strategic options and activities in order to reach REDD+ objectives, while taking into account all the socio-environmental co-benefits they lead to. One of the four main objectives of the FIP at the global scale incidentally is to facilitate new capital raising for the REDD program. The FIP also aims at providing useful experience data in the framework of the UNFCCC deliberations on the REDD+ program.

67. In Tunisia's case, given that the IP/FIP and the R-PP have been developed in parallel (see Appendix 14), the orientations, activities and recommendations of each of these documents were defined in synergy. R-PP and IP/FIP complement and nourish each other. The IP/FIP will reinforce the REDD+ readiness measures defined in the R-PP and facilitate implementation of a longer term REDD+ strategy. Reciprocally, the REDD+ strategic options (which will be defined in the REDD+ national strategy and whose mainlines have previously been identified in the R-PP), will have to take into account the activities planned by the IP/FIP. The institutional base and modalities of implementation of the IP/FIP (see section 6.6) and REDD+ (see R-PP in Annex 3) have been developed in synergy. The consultation processes to prepare for REDD+ will benefit to the steering mechanisms of the FIP.

68. The orientations of the IP/FIP and the R-PP will take into account the National Strategy for the Development and Sustainable Management of Forests and Rangelands (SNDGDFP) and keep in line with the main strategic focuses it defines. The R-PP and IP/FIP will constitute support tools for the implementation of the SNDGDFP (see Figure 1).

Figure 1: Interconnection between the IP/FIP, NSDSMFR and the REDD+ process



Section 4. Expected advantages linked to IP/FIP investments

69. The present FIP Investment Plan proposes measures aimed at reducing the deforestation and degradation of forests and rangelands, and mitigate the effects of climate change. Besides direct benefits expected from these measures in terms of balance of emissions and removal of GHG, the proposed measures must also contribute to improve the resilience and adaptation of the ecosystems and agro-systems to climate change, to improve the livelihoods and the living conditions of the forest and pastoral populations, to reduce inequalities and disparities, preserve the biodiversity and to improve the ecosystem services of the forests and rangelands. Overall the Tunisia IP/FIP will therefore act positively on the triple focus "Mitigation of climate change - Adaptation to climate change - Poverty Reduction". This section describes the expected environmental and socio-economic co-benefits expected from the planned measures in the present IP/FIP.

4.1 Socio-economic co-benefits

70. A large range of socio-economic co-benefits may be expected from the IP/FIP investments (see also Appendix 15). Among them, the most important are the following:

- Improved access to natural resources by local populations through the adoption of co-management principles and the strengthening of legal and institutional frameworks and adequate capacity building initiatives.
- Improved local livelihoods (better income, increased productivity, creation of jobs and poverty reduction). The socio-economic development of rural areas must be regarded as a central means of protection of natural environments, which justifies the adoption of an approach leading to "better use and value to better protect".
- Significant reduction of regional disparities and improved sharing of benefits from forest and rangeland related income.
- Increased involvement of women and youth in the management and development of natural resources (because of consultation mechanisms, capacity building activities and support for the development of forest and pastoral related income-generating activities developed as part of the investment projects).
- Promotion of income directly generated by local people, with improved fairness of the benefit sharing from the exploitation and processing of forest and rangeland products.
- Improved forest governance and development of formal consultation mechanisms to better manage grievances and solve conflicts (a specific feedback and conflict resolution mechanism will be developed as part of the preparation for the REDD+ (see R- PP in Annex 3).
- Strengthened regulatory and institutional frameworks to promote the effective application of the law and thereby improve access for the populations to justice and its efficiency.

4.2 Environmental co-benefits

71. Major environmental co-benefits from the IP/FIP investments are the following:

- Reduced human pressure on forest and pastoral ecosystems, because of increased FIP-related incomes for local populations.
- Improved protection and sustainable management of forests and rangelands, reinforcing the ecosystem services they provide.
- Protection of biodiversity through quantitative (increase of the surface area and of the forest cover) and qualitative (increase in productivity, species richness, etc.), improvements of forests and rangelands.
- Restored and improved management of agro-silvo-pastoral landscapes.

- Strengthened regulating functions of forests and rangelands (in terms of protection of soils, water resources and farmland, fight against desertification, improvements in air quality and maintenance of favorable microclimatic conditions).

Section 5. Collaboration between Multilateral Development Banks and synergy with the other partners

72. The strategies and major actions Multilateral Development Banks (MDBs) in connection with the themes addressed by the IP/FIP are detailed in Appendix 16.

5.1 Lessons learned from projects and programs related to the sustainable management of forests and rangelands

73. The initiatives implemented in Tunisia for an improved management of the forests and rangelands experienced several results. Past failures have helped to gradually shape the transition towards an integrated, multisectoral and participatory approach at the scale of the landscape. Past experiences have demonstrated the failure of unilateral approaches of projects defined and implemented by the Administration and the donors. While short term results have been achieved (in particular in terms of physical implementation), their sustainability has usually been compromised, due to a lack of ownership by the local population, especially since the new social context that has emerged after January 2011. Similarly, past initiatives have shown the limits of sectoral approaches (focused on a unique sector) The experience gained over the past decades (related especially to the Natural Resource Management Project/PGRN, the PDAI (Integrated agricultural development project) and the ODESYPANO (Northwest Silvo-Pastoral Development Office)

74. Operations also revealed that:

- The investments implemented with an integrated participatory approach gave better and more sustainable results than those implemented under the "traditional» top down approach.
- The role of structures created through decentralization in local development is gradually increasing. Their involvement in local planning is key. Planning documents must be submitted to these structures to allow for their examination and approval by elected local representatives.
- Local organizations, and in particular the GDAs are socio-professional private organizations having a legal status enabling them to represent their members effectively and respond to development priorities. However, these organizations still require significant capacity-building to enable them to play a key role in development and natural resource management programs.
- The results of the income-generating activities have generally been lower than expected, because they were not ambitious enough to significantly improve the family income and generate a real development of the economic activities (business creation, etc.).

75. The experience of the PRODESUD (*Programme de Développement agro-pastoral et de promotion des initiatives locales pour le Sud-Est*: see Appendix 16) demonstrated the effectiveness of an approach based on a participatory planning of collective.

76. If the multisectoral approach at landscape level helps to ensure the synergy of measures for the sustainable management of forests, rangeland and agricultural land and promotion of their social, sectorial and spatial integration, the experience of the Watershed Management Financing Framework/FCGBV (see Appendix 16) also highlights the need to reconcile natural resources conservation objectives and short term needs of populations (in production and income) in order to ensure ownership of the projects interventions by the recipients. Support to value chains is important and the experience of the GIZ supported PAD (Program for Agricultural Development) is relevant in this regard. Other development initiatives, including support to infrastructure, health and education, need to accompany natural resources programs. This

requires a significant coordination with the other relevant ministries, and a community development planning process.

77. In Tunisia, investments in the forest and pastoral sector have generally been implemented by the public sector, with limited financial resources.). Despite past limitations (see Appendix 12) there has been positive experience in development of PPPs through agricultural concessions, and there is scope for developing these initiatives further. The experiences of past programs in Tunisia has demonstrated the limitations of an approach based primarily on protection and conservation, without consideration for social and economic concerns. Improving natural resource management must include programs for economic use and environmentally and socially sustainable management, from which local people can benefit, and with the involvement of private sector actors. The economic development of underprivileged rural areas constitutes an important prerequisite for the success of the projects related to the sustainable management of natural resources.

5.2 Interactions and synergies with the IP/FIP

78. Despite constraints, collaboration between technical and financial partners has improved in recent years, facilitated by improved coordination between national stakeholders, especially regarding natural resource management, where a consensus has evolved around the importance of participatory approaches, landscape management and value chains. Continued improvements in collaboration are essential for successful FIP implementation. The IP/FIP and its investment projects should be implemented in close partnership with other partners and stakeholders. The landscape and value chain development adopted by Project 1 (see section 6.2) has been developed is in synergy with approaches adopted by PACTE (Climate Change Adaptation Program in rural areas), which is being prepared by the General Directorate for the Development and Conservation of Agricultural Lands/DGACTA with the support of the AFD, by PRODESUD II and PRODEFIL supported by IFAD, and by a project currently under preparation with UNPD and the GEF support (see Appendix 15. This cooperation will have to be continued closely and sustainably during the IP/FIP implementation. Results and lessons of the PAD, implemented with GIZ support and operating for the strengthening of agricultural value chains, will also be taken into account during the preparation and the implementation of IP/FIP Project 1. IP/FIP Project 2 and PACTE (see section 6.3), they will be developed and implemented in close collaboration taking into account complementarities. This will be facilitated by the anchorage of their implementation structure in the same administrative entity (see section 6.6).

Section 6. Identification and justification of investment projects

6.1 Context and objectives of the Investment Plan (IP)

6.1.1 Challenges and objective of the Tunisian IP/FIP

79. The approach and rationale of the FIP in Tunisia are detailed in Appendix 17. Tables 6 and 7 below summarize the principle assets and constraints facing the Tunisian forest and pastoral sector, and opportunities for addressing these constraints.

Table 6. Major assets of Tunisian forest and pastoral sector

N°	Assets
1	The existence of an institutional and regulatory framework in Tunisia is, despite its shortcomings and its constraints, a solid basis for the implementation of the sustainable management of forests and rangelands
2	For several decades, Tunisia has undertaken significant reforestation efforts, thereby increasing forest cover and carbon sequestration
3	Carbon removal by natural environments (forests, rangelands) and arboriculture compensates for 30% of national GHG emissions
4	Tunisia has a new National Development and Sustainable Forest and Rangeland Management Strategy (2015-2024)

5	The Tunisia devotes each year a significant budget for forest and rangeland restoration
6	Many initiatives (project, studies) on the forest and pastoral sector have been or are being implemented in Tunisia
7	The management of natural resources is mainly implemented at the level of one Ministry, the MARHP, which promotes an integrated management of the various sectors (forest, pastoral, agricultural, water, fisheries), and has substantial financial, human and technical resources
8	Tunisia was the first Mediterranean country selected among the FIP pilot countries

Table 7. Major constraints of the pastoral and forest sector and answers to bring

N°	Constraints	Response
1	National forest cover remains low	Increase forest and arboreal area by afforestation and the introduction of the tree in the agricultural landscape (especially in degraded land)
2	The effort of afforestation on private lands is almost non-existent, due to the ineffectiveness of the current incentive mechanisms and to the private owner's mistrust of their land's submission to the forestry regime	Increase the forest and tree planted areas through reforestation and introduction of trees in agricultural landscape (notably in degraded lands)
3	Pastoral areas are decreasing and rangelands are degrading due to overgrazing, overfishing and clearing to cropland	Design and implement effective incentive mechanisms for investment on degraded private land
		Revise the Forest Code and the provisions relating to the forestry regime on private lands
4	Agro-silvo-pastoral landscapes are degraded by overgrazing, fire, illegal logging and the practice of conventional agriculture	Improve forest and rangeland condition through an integrated and sustainable management
		Reduce the degradation of the agricultural land by arboriculture, agroforestry and agro-ecology on degraded private land development
5	The direct factors of deforestation are linked, inter alia, to voluntary encroachments on the state forest domain and the lack of knowledge about the environmental significance and the economic potential of the forests and rangelands	Improve the SFD monitoring and compliance with regulations
		Inform and raise awareness of local populations
6	Despite their economic importance, forest and pastoral resources are not managed, protected and valued optimally	Improve forest resources valorisation through a sustainable, participative an integrated management of forests and rangelands
		Facilitate local population's access to the resources (notably through the revision of the regulation)
7	The legal environment is not favourable to forests and rangelands sustainable management and development especially because of its provisions restricting access to the resources, and its lack of adequacy with the sector's specificities	Strengthen the regulatory framework by a revision of the Forest Code, the development of rangelands-related provisions and the revision of the regulatory crosscutting provisions impacting the management of natural resources
8	The organization of the Administration in charge of the management of natural resources does not facilitate the sustainable management of forests and rangelands	Strengthening the MARHP institutional framework
		Develop formal consultation mechanisms between institutional structures
9	The lack of communication, of consultation mechanisms and the top down approach to the management of natural resources are also weak points of the forest and pastoral governance	Develop a concerted and integrated natural resources management approach
		Inform and raise awareness of local populations
10	The poverty of the rural population is a major indirect factor of deforestation and degradation of forests and rangelands	Increase income of rural populations through the development of a system of joint-management of forests and rangelands, rehabilitation of degraded lands, the development of the agro-silvo-pastoral products value chain and the facilitation of access to resources
11	The distrust of local populations towards the Tunisian Administration severely limits their involvement in the management of forests and rangelands, which is an important obstacle to their protection and better use and value	Restore the confidence of populations and the private sector towards the Administration by a change of approach, the evolution of the regulation and a better sharing of the benefits
12	Knowledge and monitoring of forests and rangelands are insufficient	Improve knowledge and monitoring of forests and rangelands through a new national forest and pastoral inventory and the deployment of a national monitoring system

80. In the light of these elements, the overall objective of the IP/FIP can be formulated as follows:

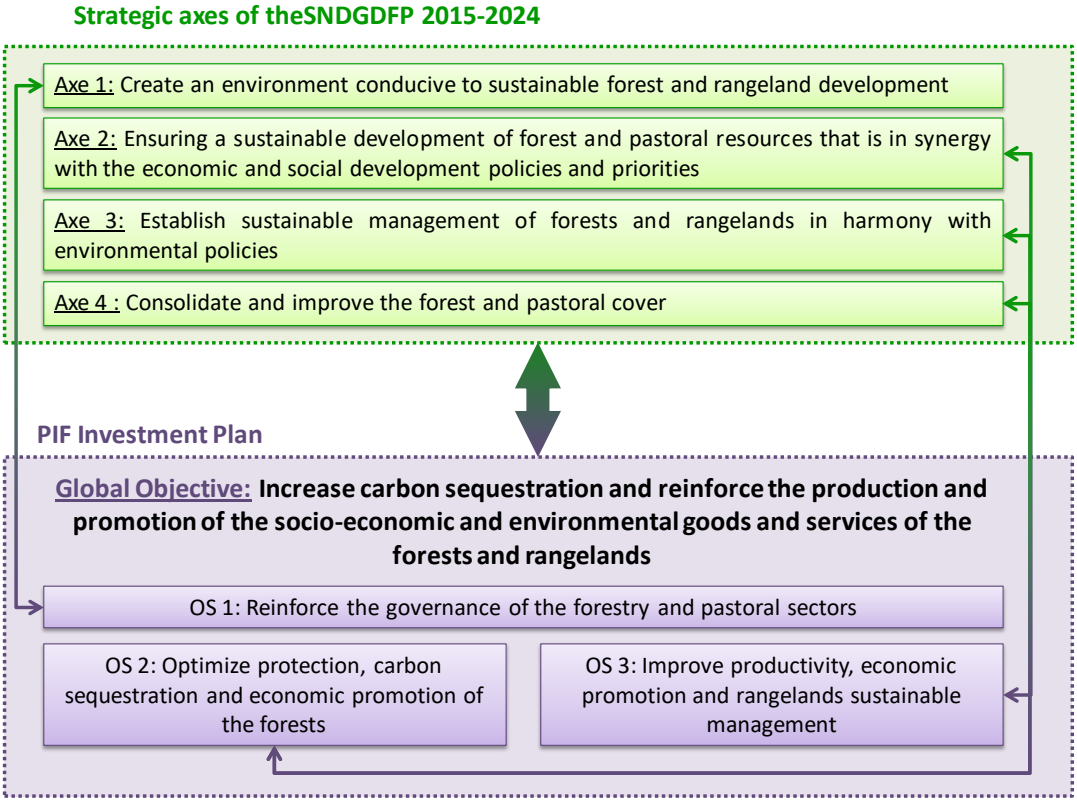
Contribute to the sustainable management of Tunisian forests and rangelands for the protection of these ecosystems, the improved use and value of the products and services they provide and the resilience to climate change.

81. The Tunisia IP/FIP contains activities that can be divided in three areas of intervention, according to a thematic and geographical distribution. These three fields can be translated to 3 specific objectives (SO) for the IP/FIP:

SO1	Strengthen the governance of the forest and pastoral sector
SO2	Optimize protection, carbon sequestration and the economic valorisation of forest landscapes
SO3	Improve productivity, economic development and the sustainable management of rangelands

82. The first specific objective, relating to governance, represents a cross-cutting objective affecting both the forests and rangelands and at all scales, from the local level to the national level. The other two specific objectives will result in actions at the local level and are distinguished by the type of targeted ecosystems, in direct relation to their geographical distribution. The achievement of these three specific objectives constitutes the three strategic axes of the IP/FIP in which the activities selected within investment projects will be developed. These strategic axes are in line and consistent with those of the SNDGDFP, as shown in Figure 2.

Figure 2 : IP/FIP objectives that align with those of the National Strategy for the Development and Sustainable Management of Forests and Rangelands

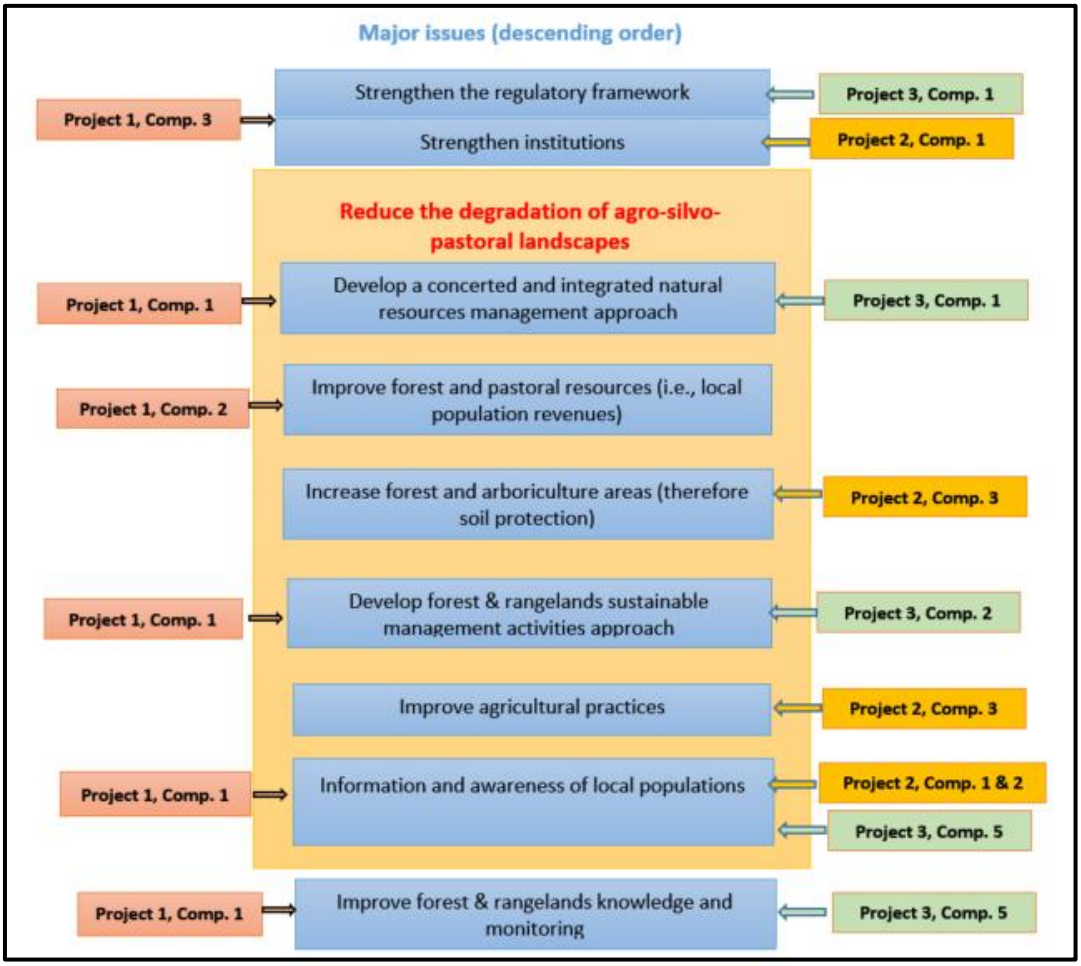


83. In order to reach these objectives, activities have been defined and brought together in three investment projects. These projects have been structured as to be both coherent and supplementary, particularly as regards ecosystems and geographic locations, but also as regards targeted land tenure status:

- Project 1 will focus on the agro-silvo-pastoral landscape units dominated by the Cork oak forest (North-West Tunisia), the pine forest of Aleppo Pine (governorate of Siliana and Kasserine) and range and pasturelands (governorates of Kasserine and Sidi Bouzid), according to a joint-management integrated approach at landscape scale. It will also support agro-silvo-pastoral products value chain development, as well as enabling and cross-sectional activities, at national scale, in order to strengthen the forest and pastoral sector institutional and legal framework and to remove some of the main obstacles to the sustainable management of forests and rangelands that depend on it.
- Project 2 will be developed on vast areas of agricultural degraded private land in North and Central-West Tunisia, with a supporting and incentive approach to encourage owners to invest in forestry, arboriculture, or agroforestry, based on the design of an innovative and attractive funding mechanism.
- Project 3 will cover rangelands in three governorates (Gabes, Gafsa, and Tozeur), develop and implement participatory development plans, while strengthening the capacities of the administration and main stakeholders.

84. The activities of the proposed projects by the IP/FIP (sections 6.2 and 6.3) respond to the main constraints of the Tunisian forest and pastoral sector.

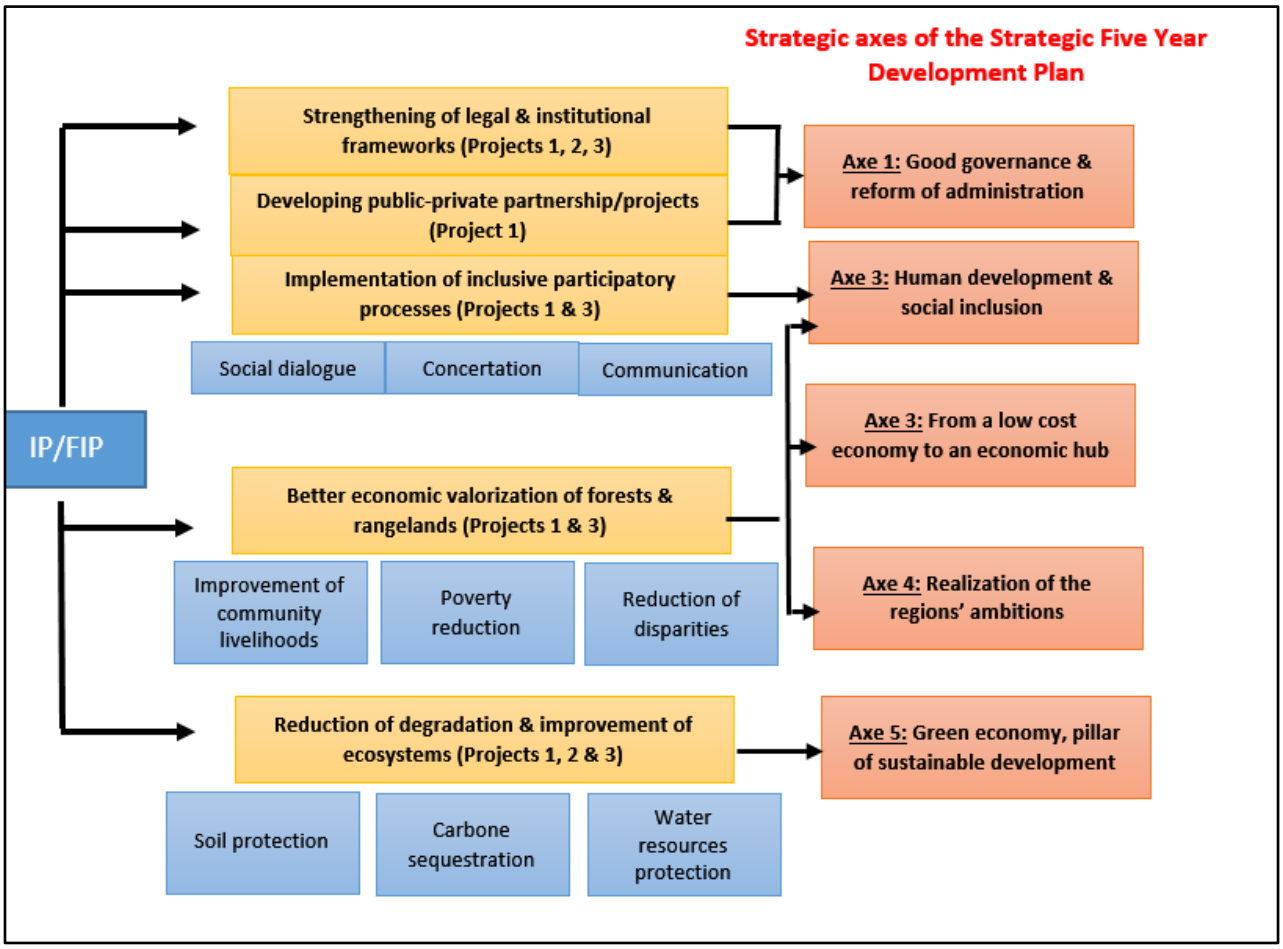
Figure 3: FIP/IP support to the main issues of the Tunisian forest and pastoral sector



85. Several complementary initiatives aim to address rangeland and alfa grass land degradation in South and Central Tunisia. These include PRODESUD II and PRODEFIL projects, implemented by the IFAD and operating in Tataouine, Kebili and Medenine governorates, and the PNUD project under preparation, in the framework of the GEF, which will operate in synergy with investment Project 1 and PACTE on Kasserine, Sidi Bouzid, Kairouan and Gafsa governorates (see Appendix 16).

86. Activities i are consistent with the strategic directions defined in the Strategic Five-Year Development Plan (SFYDP; 2016-2020) of Tunisia, currently under finalization. Project 1 is fully incorporated in SFYDP projects. Project 2 will complement the projects planned by the SFYDP, while contributing to its objectives. The contributions of the IP/FIP to the objectives of the Strategic Five-Year Development Plan are illustrated by figure 4.

Figure 4 : IP/FIP in line with the Strategic Five Year Development Plan for Tunisia 2016-2020



6.2 Project 1: Integrated management of landscapes in the least developed regions in Tunisia

6.2.1 Rationale, objectives and challenges of the project

87. Project 1 is a large-scale project aiming at meeting many constraints of the silvo-pastoral and forest sector, especially those related to inefficient forest resource management and degradation, the institutional and regulatory framework, weak governance, poverty of the local population and the lack of sector knowledge and monitoring. It is intended to improve the management of agro-silvo-pastoral landscapes and the development of associated value chains, through (i) the implementation of a participatory process of territorial planning at the landscape level, (ii) support to the development of consistent and competitive

value chains, (iii) support institutional change and legal reforms related to the management of natural resources, and (iv) improved knowledge and pastoral and forest ecosystem monitoring.

6.2.2 Project intervention areas

88. Project 1 will be carried out in the governorates of the Tunisian Northwest (Jendouba, Beja, Le Kef, Siliana) and Midwest (Kasserine, Kairouan and Sidi Bouzid) (see Appendix 18). Implementing integrated landscape management pilot practices and techniques (see component 1.2) will happen initially on 10 landscape units over a total surface area of around 100 000 ha, selected on the basis of criteria such as:

- Forest and pastoral ecosystems representativeness (according to the national scale),
- Socio-economic development potential related to the forests and rangelands,
- Level of exposure of the forests and rangelands users to poverty and climate change,
- Development priorities defined at the national level,
- Level of priority for protection of water resources,
- Synergy and collaboration with the other projects and programs.

6.2.3 Project activities

6.2.3.1 Component 1: Strengthening integrated landscapes management

89. With an approach at the agro-silvo-pastoral landscape scale, the component will aim at improving the management of the ecosystems for strengthened protection, restoration and resilience to climate change. The activities will come in two subcomponents, corresponding to the planning and to the implementation of the territorial development actions.

90. **Subcomponent 1.1: Territorial development planning**. This subcomponent will enable the strengthening of the technical and management capacity of local and regional players, so as to support multisectoral partnership groups (MPG) bringing together local authorities, civil society (GDA, NGOs), the private sector and groups of natural resources producers or users for the development of participatory integrated landscapes development plans (PDIPs). These planning activities of natural resources management at the landscape scale will strengthen the ongoing decentralization process. They will also contribute to the implementation of a true land use planning of the territory, which will help reduce direct deforestation drivers such as agricultural clearings a well as degradation drivers.

91. At national level, strengthening technical capacities and improving knowledge will be supported by (i) the development of a new national forest and pastoral resource inventory, (ii) the development of the national Plan for afforestation and reforestation, (iii) the development and updating of land cover and land potential maps, (iv) the development and/or updating of management Plans (norms and standards) of the SFD forest stands, and (v) the implementation of a forests and rangelands data management and monitoring system including the monitoring of environmental and social co-benefits. The tracking system would designed to integrate the MRV[18] system to be developed as part of the REDD+ process (see R-PP in annex 3). As part of the national forest and pastoral resource inventory, special attention would be given to the inventory of the steppe rangelands in the Tunisian Centre and South, and specific technical skills for implementation of a reliable and comprehensive rangeland survey would be mobilized. The forest and rangeland inventory will also include work on the definition of forest in Tunisia, as well as the various categories of land use, and on estimates of carbon sequestration rates and carbon stocks from pastoral and forest ecosystems.

92. **Sub-component 1.2: Integrated landscape management implementation.** On the basis of the PDIP developed under component 1.1, financial and technical support would be provided to local stakeholders to implement agreed activities. This would include support to climate-smart agriculture practices and

[18] *Monitoring, Reporting and Verification*

sustainable forest and rangeland management activities, such as enrichment, maintenance or regeneration of the stands, thinning or infrastructure of prevention and fight against fires (roads, firebreaks, water points), to develop public-private partnerships for the management of national parks or to privatise nurseries to respond to the demands of market. Activities would support capacity building of different actors involved in the management of the natural resources of the landscape units selected.

93. The implementation of the PDIPs by local players implies the establishment of a co-management model defining the roles and responsibilities of each of the stakeholders. This model will tested during the first two years of implementation based on the initial experiences of the 10 landscape units targeted by the project and will inform activities under component 3.1 (regulatory strengthening).

6.2.3.2 Component 2: Development of agro-silvo-pastoral value chains

94. Operating downstream of component 1 activities, this component will support the development of agro-silvo-pastoral value chains, including local agricultural products, sheep/goat meat, NWFP (non-wood forest products such as honey, pinion and Aleppo pine seeds, mushrooms, herbs) and wood energy. The project will support micro-, small and medium enterprises (MSMES) in development of value chains. These activities will be implemented by appropriate public institutions with the support of private consulting firms.

95. **Sub-component 2.1: Supporting services for inclusive entrepreneurship in value chains development.** The component will strengthen Business Support Services (BSS), which, in collaboration with specialised consulting offices, will support MSMES in their business dynamics and commercial guidelines, to develop and submit proposals to the Fund for Productivity and Innovation created under the Sub-component 2.2. These BSS will also strengthen national (such as APIA[19], APII[20] and CEPEX[21]) and regional institutions (North-western and Central-western Development Offices) for the development of value chains and promotion of exchanges between these structures in a dynamic network.

96. **Sub-component 2.2: Financing of MSME investment plans in growing value chains.** To catalyse collaboration between contractors for access to the skills, equipment and training and the increase in yields, a Fund for Productivity and Innovation (FPI) will be created and financed by the project to stimulate the growth and competitiveness of the agro-silvo-pastoral value chains in the targeted governorates. The setup of the FPI will benefit from the long experience of Tunisia in the implementation of special development funds such as the FOSDAP[22], the FOPRODI[23], or the FONAPRAM[24], which will be used and supplemented by this FPI. This FPI will have two windows. The first one, aimed at individual companies and producers, will finance goods and services to improve the economic viability of projects and the access to credit for companies in the agro-silvo-pastoral sector. The second will aim to provide support for subprojects submitted jointly by local contractors and suppliers of specialized services by financing the acquisition of equipment, the provision of support/advice or training dispensed to improve the creation of shared value.

6.2.3.3 Component 3: Strengthening the institutional and legal framework

97. **Subcomponent 3.1: Strengthening the legal framework.** This activity will aim at improving the legal and regulatory framework for natural resource management It will include in-depth analyses of the current legislation, identification of complementarities and inconsistencies between the various texts, and technical support to the Administration for the revision of the Forest Code and the production of implementing texts. Proposals will be also made to modify cross-cutting regulatory texts provisions affecting the management of forest and pastoral resources. This will particularly concern the texts relating to land

[19] *Agricultural Investment Promotion Agency* (Agence de Promotion des Investissements Agricoles)

[20] *Industry and Innovation Promotion Agency* (Agence de Promotion de l'Industrie et de l'Innovation)

[21] *Export Promotion Agency* (Centre de Promotion des Exportations)

[22] *Special Fund for the Development of Agriculture and Fishing* (Fonds Spécial pour le Développement de l'Agriculture et de la Pêche)

[23] *Industrial Decentralization and Promotion Fund* (Fonds de Promotion et de Décentralisation Industrielle)

[24] *National Fund for the Promotion of handicrafts and small trades* (Fonds National de Promotion de l'Artisanat et des petits Métiers)

rights. The aim of these revisions would be to facilitate access to and sustainable co-management of forest and pastoral resources by local populations and private sector actors. In this context arrangements would be made to grant access to the forest and pastoral resources of those involved in the management of forests and rangelands on selected landscape units (see component 1). This may result, for example, in the signature of a community management convention between the MARHP and the GMP. Feedback and positive experiences from the implementation of component 1 would take into account in the re-design of the regulatory texts under component 3.1.

98. **Subcomponent 3.2: Strengthening the institutional framework.** In view of the findings developed in section 1.6 in accordance with axis 1 of the 2015-2024 SNDGDFP, this activity will support the restructuring of the MARHP and the CRDA, in order to optimize adaptation of their organization to the socio-economic context and the specific characteristics of the forest and pastoral sector, and to ensure the consistency and the quality of their interventions. This includes the development and implementation of formal reorganization proceedings, the transformation and development of human resources, the use of specific tools and the technical, material and human capacity-building of key institutions and decentralised services. Appropriate mechanisms and procedures would be defined in order to conduct and monitor the implementation of the reorganization process. Special attention will be paid to rangeland areas currently divided administered by several structures.

6.2.3.4 Component 4: Project management

99. This component will include all administrative, fiduciary, coordination, planning and monitoring costs of project activities.

6.2.4 Budget

The projected budget for implementation of Project 1 is presented in

100. . On the total amount of US$ 137 million, US$ 100 million correspond to the IBRD loan. Complementary funds will be requested from de FIP (12 million US$) and the Green Climate Funds (25 million US$), for an amount of US$ 37 million (see Annex 1). Additional funding would be provided by private sector actors to contribute to component 2 activities. Amounts would be determined during detailed project design and implementation of participatory management plans.

Table 8. Projected budget of the Project 1

Component and subcomponent	Amount (million US$)			
	WB	FIP	GCF	Total
Component 1: Strengthening integrated landscape management	**55.0**	**10.0**	**15.0**	**80.0**
1.1 : Territorial development planning	20.0	5.0	10.0	35.0
1.2 : Implementation of practices and techniques of integrated management of landscapes	35.0	5.0	5.0	45.0
Component 2 : Strengthening of agro silvo pastoral value chains	**35.0**		**5.0**	**40.0**
2.1 : Supporting services for inclusive entrepreneurship in value chains development	15.0		5.0	20.0
2.2 : Financing of MSME investment plans in growing value chains	20.0			20.0
Component 3: Strengthening institutional and legal framework	**7.0**			**7.0**
3.1 : Strengthening of the legal framework	2.0			2.0
3.2 : Strengthening of the institutional framework	5.0			5.0

Component and subcomponent	Amount (million US$)			
	WB	FIP	GCF	Total
Component 4: Project management	**3.0**	**2.0**	**5.0**	**10.0**
Total	**100.0**	**12.0**	**25.0**	**137.0**

6.3 Project 2: Integration of the tree in degraded private farmland

6.3.1 Justification, objectives and issues of the project

101. The Tunisian rural and agricultural landscapes are strongly affected by erosion, leading to land degradation and impoverishment, siltation of dams and a reduction in water resources (CNEA, 2008)[25]. This degradation is mainly due to agricultural policies focused on intensive annual crop cultivation and the lack of a rural land use planning strategy taking into account all the social and environmental factors (in particular the vulnerability of soils to erosion). In addition to the clearing of woodlands, this policy, combined with the lack of technical knowledge of the land owners, has led to unsustainable agricultural practices, especially on cropland, leading to a decrease in the amount of organic matter and the fertility of the cultivated soils, and causing or accentuating their degradation.

102. Mechanisms implemented by Tunisia to encourage landowners to invest in plantations and in marginal lands cultivated in order to reduce soil degradation have had limited success, due to inappropriate incentives and restrictive provisions of forest and rangelands.

103. The uninterrupted extensive cultivation on these degraded lands or their use as rangeland, beyond negative impacts on soil fertility, water resources and biodiversity, provide limited income to their owner. Nevertheless these areas, if sustainably managed, have a considerable potential, , especially in terms of carbon sequestration, climate change resilience and water resources protection as well as for increased productivity

104. To address protection of land against degradation, the Climate Change Adaptation Program in rural areas (PACTE) is being prepared by the DGACTA (Directorate General of Agricultural Land Planning and Conservation), with the technical and financial support of AFD (70 million US$). This program will revolve around the participatory planning of natural resource management activities at the level of the territory, resources preservation actions (esp. waters and soils) and the strengthening of the agricultural value chains.

105. The IP/FIP Project 2 aims, as a complement to PACTE, to promote the integration of tree in degraded private farming land. It will be based on the design and implementation of an incentivizing innovative financing mechanism supporting investments in arboriculture, forest and agroforestry plantations on private degraded land. The objectives are to (i) improve carbon sequestration, (ii) strengthen soil and water resources protection, (iii) restore the confidence of private owners toward the administration and the forest sector, and (iv) increase the income of the owners and local economic development.

6.3.2 Areas of intervention of the project

106. The project will take place on private properties, damaged or threatened by degradation, whose owners have expressed their interest to take advantage of the incentive mechanisms for the proposed investment. In order to maximize the chances of success of the project activities and to facilitate its replication on a large scale, the intervention area of the project covers the Northern and West-Central territories presenting favourable bioclimatic conditions (especially in terms of precipitation). To maximize the possibilities of identification of owners willing to join the project, the project intervention area has

[25] Centre National d'Études Agricoles, 2008. *Étude sur l'état de la désertification pour une gestion durable des ressources naturelles en Tunisie/Rapport de la troisième phase/*Février 2008

voluntarily been set as wide as possible, so as to integrate the whole surface area of the governorates concerned (see Appendix 19).

107. Project 2 aims at financing investments in tree plantation, forestry or agroforestry plantations on a total area of around 25,000 ha. The Project will be deployed primarily on the large farmlands threatened by degradation. Furthermore, in order to enhance replication potential, the diversification in terms of type and location of target properties and financed investment category will be sought. Project 2 aims at enabling upscaling of the approach to national level, so that the potential of the large tracts of degraded land in the identified governorates can be better used and valued.

108. Project 2 will come under the 2016-2020 Strategic Five-Year Development Plan (PSDQ[26]). It will contribute to the implementation of its strategic goals, and especially of its 5th Axis ("the green economy, pillar of sustainable development"). In addition, Project 2 investments will be complementary to the Integrated Agricultural Development Projects (IADP) implemented by IFAD. In addition to interventions planned in governorates susceptible to water erosion and degradation (Siliana, Kairouan, Bizerte, Kasserine, Le Kef), Project 2 may also include investments in governorates not touched by a IFAD, such as Beja, Nabeul, Sidi Bouzid or Manouba.

109. The territory and intervention scale of Project 2 are complementary to those of the PACTE (prepared by the DGACTA and AFD). Project 2 interventions will focus on 9 pilot territories, distributed in 8 governorates, in which a sustainable and participatory management of natural resources will be planned and implemented. PACTE will be responsible, among other things, for investments in these territories, according to the degree of priority identified during the planning phase. The selected farms will generally be small to large, and managed by individual or organized farmers (in GDA or other local organization). As mentioned above, Project. 2 may intervene on all types of private property and on the total area of the target governorates (cf. Map 1), including on properties located outside the PACTE pilot territories or outside governorates where PACTE will act. IP/FIP Project 2 can however also intervene in properties located within the PACTE pilot territories. In this case, these interventions will be fed into the territorial planning process developed by the PACTE. They will then support the objective of sustainable and participatory management of the natural resources in rural territories pursued by the PACTE, complementing the physical investments by tree, forestry or agroforestry plantations.

6.3.3 Project activities

110. In the project preparation phase, a feasibility study will be carried out in order to make a thorough assessment of the context of the project and to better define the contours of its activities. In order to develop the rationale for the project in detail, specific studies will be conducted to enhance the knowledge of degraded land, identify more precisely the land areas likely to be targeted by the project, characterize them, identify the various possible options for intervention and perform a preliminary assessment of the socio-economic and environmental impacts of the Project. These studies will make use of the existing documentation, while developing the specificities related to this project.

6.3.3.1 Component 1: Establishment of a sustainable financing mechanism

111. **Sub-component 1.1: Preparatory studies**. Prior to the definition of the financing mechanism, studies will be carried out in order to establish a comprehensive review of the regulatory, policy and institutional context in which will operate the funding mechanism and to make use of existing experiences, in Tunisia and other countries of the Mediterranean basin, in terms of financing mechanisms and incentives for the sustainable management of natural resources. The studies can focus on (i) the past and current initiatives to create funds to finance activities related to the sustainable management of natural resources in Tunisia, such as the Special Fund for the Development of Agriculture and Fishery (FOSDAP) or the Financing Fund of the Biological Recovery for fisheries (FFRB), (ii) a critical review of the regulatory texts on agricultural and/or forestry investment support , and (iii) Payment for Environmental Services mechanisms

[26] *Plan Stratégique de Développement Quinquennal*

(PES) based on the specific context of Tunisia. These studies will draw the necessary lessons for the definition of an effective incentive funding mechanism, adapted to the context and the specific features of the country. These studies would be defined t in collaboration with the PACTE activities. Harmonization of the conclusions and recommendations of the various studies is essential to avoid the definition of redundant or conflicting funding mechanisms

112. **Sub-component 1.2: Definition of a funding mechanism.** On the basis of preliminary studies results, the structure and modalities of implementation (access, organisation, supply, etc.) of the innovative financing mechanism for promotion of investment on degraded private land would be defined. This mechanism would be aligned with and complementary to existing incentive mechanisms (such as the FOSDAP or grants for reforestation contracts established between private owners and the Forest Administration) and the funding mechanism to be defined under the PACTE. According to the results of the preparatory studies, it will be necessary to evaluate the advantages and disadvantages of a convergence of the two initiatives towards a unique funding mechanism or the definition of two separate, but complementary funding mechanisms.

113. The mechanism will pilot, in addition to other potential sources of funding (State, FIP, GCF, donors), a PSE method of remuneration in order to increase incentives for investment by private owners. The PSE system would remunerate the two main environmental services of the investments made: soil and water protection and carbon sequestration. The PSE would be designed to ensure that it is a financially attractive operation for the owners. Operational modalities will be designed during the implementation of project 2. The PES could for example cover the opportunity cost of investments, i.e. compensate the loss of income for private owners during the period between the investment and the restoration of productivity of the improved land. Furthermore, the PES could also support part or all of the interest rates of the loans granted to land owners or the direct implementation of operations on the ground.

114. The funding mechanism will consist of two separate schemes depending on the type of proposed investment (cf. Sub-components 3.1 and 3.2). Its management structure will involve one (or several) actor(s) as an intermediary between the Forest Administration and private owners, so as to reduce the risk associated with the distrust towards the state services and provide sound fiduciary oversight. The *Caisse des Dépôts and Consignations* (CDC), financial or banking structures or specialized private companies could play this role of intermediary. This intermediate structure would be responsible for managing the various funds for investment on degraded private land and provide the link between private owners and nominated financial operators such as CDC.

115. The financing mechanism under project 2 would be designed to pilot a potential REDD + funding system (see R-PP in Annex 3, allowing for experimentation) before expansion to national level as and when REDD+ is rolled out in Tunisia.

116. Subcomponent 1.3: Institutional establishment of the funding mechanism. The funding mechanism would be implemented on the basis of the organization, the support structure and operating procedures adopted in the context of component 1.2. Technical and institutional support would be provided in order to formalize institutional anchoring and the functioning of the financing structure. Operating procedures would be developed and validated. Capacity building actions would train staff in the application of procedures to ensure proper functioning.

6.3.3.2 Component 2: Support to private owners for funding applications on technical and financial aspects

117. **Sub-component 2.1: Identification of owners and farms.** On the basis of the feasibility study and the specific studies, and including the identification of the potential and priority intervention areas, the sub-component would support communication and awareness raising actions for private owners of degraded land, with the aim of demonstrating the economic benefits of improved land use practices and land restoration, explaining the project approach and identifying interested farmers.

118. **Sub-component 2.2**: **Investment planning.** The sub-component would support agronomic, ecological and economic studies on the land of interested farmers, in order to assess technical and commercial potential and define the range of possible investment opportunities. Following discussions with owners, the results will be action plans specifying the activities planned, the budget and the schedule would be developed.

119. **Sub-component 2.3: Support to beneficiaries for preparing funding applications.** Technical and administrative support would be provided to owners interested in the mechanism in access to funding procedures. According to the potentialities identified in sub-component 2.2 and the owner's choices, they will be supported to develop a business plan compatible with the procedure prescribed by the financial mechanism and to prepare the funding application file.

6.3.3.3 Component 3: Investments for the integration of the tree in degraded private land

120. This component would support implementation all the investments planned under the Component 2.3 (presented above).

121. **Sub-component 3.1: Arboriculture and agroforestry**. This sub-component would finance investments in arboriculture (olive, almond trees, fruit trees, etc.) or agroforestry systems (involving trees in farming practices). These practices will improve carbon sequestering (in the biomass and in the ground), ensure the protection of soil and water, and improve owners' income, through productivity increase and/or diversification of production.

122. **Sub-component 3.2: Forest plantations and domestication of medicinal and aromatic plants**. This sub-component would finance forestry investments (plantations for timber production or NTFPs) and activities related to domestication of medicinal and aromatic plants (Rosemary, Myrtle, Buckthorn, etc.) on rural or pastoral plots threatened by erosion. These practices will also help improve carbon sequestration (in biomass and soil), ensure the protection of the soil and the water resources, and improve the owners' income, through increased productivity and diversification of their production.

123. **Sub-component 3.3: Strengthening the capacity of private owners and technical follow up of the investments**. In order to ensure the sustainability of investments. Training will be provided to farms and lands owners in sustainable water and land management practices. These training activities would enable adequate maintenance of the arboreal, forestry or agroforestry plantations. Technical and practical guidelines for the management and maintenance of plantations would be produced and supplied to the owners.

6.3.3.4 Component 4: Project Management, monitoring and evaluation

124. This component would include all costs of administration, fiduciary oversight, coordination, planning and monitoring of activities developed by the project. It would especially cover the mobilization of human resources, the acquisition of the necessary material means and provision of technical assistance. This component would support the design and implementation of a mechanism to monitor (MRV type) including the accounting of GHG emissions and carbon sequestered through the Project, compatible with the national system for monitoring forests and rangelands (developed under the Project 1). This component would support communication and publicity campaigns, demonstrating results and successes as well as lessons learnt, thereby increasing the interest by private owners in similar investments.

6.3.4 Budget

125. The budget, related to the implementation of Project is estimated at US$ 49 million (see Table 9). Complementary funds will be requested from FIP (10 million US$) and the Green Climate Funds (29 million US$), for a total amount of US$ 37 million (see Annex 1).

Table 9. Projected budget of the Project 2

Component and subcomponent	Amount (million $US)			
	AfDB	GCF	FIP	Total
Component 1: Establishment and implementation of a sustainable financing mechanism	**0.6**			**0.6**
1.1: Preparatory studies	0.1			0.1
1.2: Definition of the funding mechanism	0.4			0.4
1.3: Institutional setting of the funding mechanism	0.1			0.1
Component 2: Support to private owners for funding applications on technical and financial aspects	**2.9**			**2.9**
2.1: Identification of owners and farms	0.4			0.4
2.2: Studies of potential and investment planning	1.4			1.4
2.3: Support to the beneficiaries for preparing the funding applications.	1.1			1.1
Component 3: Investments for the restoration and enhancement of degraded private land	**5.0**	**29.0**	**7.5**	**41.4**
3.1: Arboriculture and agroforestry	3.0	12.9		15.9
3.2: Forest Plantations and domestication of medicinal and aromatic plants	1.0	15.5	5.0	21.4
3.3: Strengthening the capacity of private owners	1.0	0.6	2.5	4.1
Component 4 : Project Management, monitoring and evaluation	**1,5**		**2,5**	**4,1**
Total	**10,0**	**29,0**	**10,0**	**49,0**

6.4 Project 3: Sustainable management of Tunisian rangelands

6.4.1 Justification, objectives and issues of the project

126. Whether publicly or privately owned, rangelands produce tangible products such as forage, wildlife habitat, water, minerals, energy, plant and animal gene pools, recreational opportunities, and wood products.

127. Rangelands represent more than a quarter of the country and their surface area decreases, because of clearing for farmland and anthropic degradations. Many indirect factors facilitate that qualitative and quantitative degradation of the Tunisian rangelands, of which particularly:

- Outdated land administration, hindering the development of rangelands;
- Complexity of the land tenure status of the collectively-owned lands;
- Weak regulatory framework;
- Lack of a unique institution in charge of the rangelands (which current management is distributed between the DGF, OEP, and DGACTA, that intervene with different tools and means;
- Lack of adequate consultation between the actors of rangelands management plans;
- Insufficient investments for the sustainable management of rangelands, especially on the collective courses, which represent the vast majority of Tunisian steppe rangelands;
- Application of inappropriate national policies (intensification of agriculture, safeguarding of herd, administrative divisions, etc.);
- Climate change impacts (and including increased droughts in already arid territories)
- Lack of reliable data and statistics on the state and trends of the rangelands;

128. The rangelands degradation phenomenon particularly shows negative impacts on good and services provided by rangelands, loss of biodiversity, decrease (or at least the lack of improvement) of the local populations income (related to the reduction of the available pastoral resources), the decrease of the sequestered carbon stocks and the desertification progression.

129. Project 3 aims at enhancing decent incomes and economic growth opportunities, improving the resilience and the conservation of the rangelands in order to improve the environmental goods and services of pastoral ecosystems and the local population's livelihoods, to increase the sequestered carbon stock in the rangelands and fight against land degradation and desertification, therefore reduce poverty of the poorest.

130. Aspects in relation with the improvement of knowledge and the monitoring of rangelands, as well as to the improvement of the institutional framework are integrated into Investment Project 1. Other issues related to the management of steppe rangelands of Central and Southern Tunisia are treated by the 2nd phase of the Local Initiatives Agro-Pastoral Development And Promotion Program For the South East (PRODESUD II), implemented mainly on the Governorate of Tataouine and Kebili, and by the Agro-Pastoral Development Project and the associated value chains in the Governorate of Medenine (PRODEFIL) both funded by FIDA. The present proposed investment project relies very much on these existing initiatives and the lessons learned from the first phase of the PRODESUD, which helped develop effective participatory sustainable management of collective rangelands mechanisms that can be replicated.[27] While proposing an approach and intervention methods identical to those of the PRODESUD II and PRODEFIL projects, Project 3 seeks to ensure geographical complementarity with these, by means of governorates not concerned by the actions of these projects.

6.4.2 Areas of intervention of the Project

131. As mentioned earlier, the project will take place, from the perspective of geographical complementarity with the PRODESUD II and the PRODEFIL zones of intervention, in the governorates of Gabès, Gafsa and Tozeur. These governorates, with large areas of collective rangelands and characterized by a pronounced aridity (less than 0.35 aridity index) [28], are also not affected by the Integrated Agricultural Development Projects (PDAI) or by actions of development of the agricultural and pastoral sectors, programmed in the context of the 2016-2020 Strategic Five-Year Development Plan of Tunisia under development. Project 3 will thus present a good complementarity with PDAI of the Strategic Five Year Development Plan, while remaining consistent with its guidelines. Rangeland areas in the three Governorates are estimated at about 1 million hectares, of which 416 600 ha in the Governorate of Gabes, 319 800 ha in the Gafsa Governorate and 310 000 ha in Tozeur Governorate.[29] The target areas are chosen according to the importance of the pastoral areas and farming activities.

[27] The methodology is described in: Nefzaoui, A., El Mourid, M., Saadani, Y., Jallouli, H., Raggad, N., and Lazarev, G. 2007. *A Field Manual for the Preparation of a Participatory Community Development Plan.* ICARDA Aleppo, Syria, 116 p.

[28] The aridity index (AI) is usually expressed as a function of precipitation (P) and potential evapotranspiration (PET), calculated by the method of Penman taking account of the atmospheric humidity, solar radiation and wind : AI = P / PET. The lower it is, the more the environment is arid. An area is generally considered as arid when the aridity index is less than or equal to 0.5.

[29] Office de Développement du Sud, 2014. Gouvernorat de Gabès en chiffres. République Tunisienne. Ministère du Développement, de l'Investissement et de la Coopération Internationale. 118 p.

Office de Développement du Sud, 2014. Gouvernorat de Gafsa en chiffres. République Tunisienne. Ministère du Développement, de l'Investissement et de la Coopération Internationale. 126 p.

Office de Développement du Sud, 2014. Gouvernorat de Tozeur en chiffres. République Tunisienne. Ministère du Développement, de l'Investissement et de la Coopération Internationale. 124 p.

132. Within these 3 governorates will be demarcated pilot territorial units (PTU), in which participatory development plans and business opportunities will be developed and implemented. The actions deployed on these PTU will then up scaled across these governorates.

6.4.3 Project activities

6.4.3.1 Component 1: Strengthening the capacities of the administration on charge of rangelands at national, regional and local levels.

133. Amongst other constraints, it was established that the current instruments of policy and legislation were outdated and ineffective as far as rangelands are concerned. These refer, inter alia, to Land policies and lack of rangelands regulations. Therefore, the importance of this component that will provide a framework for rangelands management and subsequent tools and instruments such as governance models and a strategy that can be implemented.

1. Facilitate the formulation et implementation of the Pastoral Code;
2. Develop and implement adapted governance models;
3. Develop the national strategy of rangelands management;
4. Develop economic policies and instruments for the rehabilitation et rangelands resting/*mise en défens*.

6.4.3.2 Component 2: Improving goods and services of pastoral ecosystems

134. This component will allow rangelands to provide the most of their goods and services. This will be done through the formulation of development plans followed by rehabilitation of sites that provide environmental and ecological tourism opportunities. At the same time, the component is designed to restore biodiversity in some chosen areas that can be scaled-up in the future, therefore creating sources of incomes and new carbon sequestration opportunities.

1. Formulate and implement 20 sound management plans;
2. Develop landscape ecologic and cultural tourism (20 sites);
3. Protect and upscale biodiversity ecosystems.

6.4.3.3 Component 3: Improving economic growth and facilitating the marketing of pastoral products

135. The importance of this component is providing economic instruments such as start-ups for business opportunities to break the cycle of depletion of the goods and services of this large ecosystem. The production system will be smarter through some activities proposed in this component.

1. Develop required infrastructures (water points, feeder road, platforms/markets);
2. Develop small enterprises (start-ups)and income generating activities;
3. Develop agro-pastoral value chains.

6.4.3.4 Component 4: Improving rangeland production and productivity

136. This component will bring the ecosystem to an equilibrium state that will allow sustainable production when established. This is not just an opportunity to enhance land carbon sequestration but also better water management and productivity. This component will restore the rangeland ecologic cycle at its normal functioning and opportunity for feed and fodder to produce meat and environmental goods.

1. Rehabilitate and plant 100,000 ha of rangelands with native and adapted species;
2. Develop run-off water collection sites.

6.4.3.5 Component 5: Strengthening managerial and technical capacities of stakeholders

137. The fragility of the rangelands systems will be reversed by supporting the users and enhancing their capacity to sustainably use and harvest rangeland goods and services. This component will empower provide tools, knowledge, and know-how to all users.

1. Support civil society and professional organizations;
2. Create a forum for discussion/consultation between different stakeholders;
3. Promote water, soil, livestock and rangeland management techniques;
4. Develop ¨business plans¨ based on the integration of rangeland/oases;
5. Promote local know-how and traditional practices.

6.4.3.6 Component 6: Project Management

138. This component will include all administration, coordination, planning and monitoring of activities developed by the project. It will notably cover the mobilization of human resources, the acquisition of the necessary material means and the implementation of the technical assistance.

6.4.4 Budget

139. The budget, related to the implementation of Project is estimated at US$ 50 million (see Table 10). Funds will be requested from FIP (10 million US$) and the Green Climate Funds (40 million US$), for a total amount of US$ 37 million (see Annex 1).

Table 10. Tableau Budget prévisionnel du Projet 3

Component and sub-component	Amount (US$ million)			
	FAO	GCF	FIP	Total
Component 1. Strengthening the capacities of the administration		**5.50**		**5.50**
1.1 Facilitate the formulation et implementation of the Pastoral Code		0.50		0.50
1.2 Develop and implement adapted governance models		0.25		0.25
1.3 Develop the national strategy of rangelands management		0.25		0.25
1.4 Develop economic policies and instruments for the rehabilitation et rangelands resting		4.50		6.00
Component 2 : Improving goods and services of pastoral ecosystems		**7.00**	**1.50**	**8.50**
2.1 Formulate and implement 20 sound management plans		0.50		0.50
2.2 Develop landscape ecologic and cultural tourism (20 sites)		6.00		6.00
2.3 Protect and upscale biodiversity ecosystems		0.50	1.50	2.00
Component 3 : Improving economic growth and facilitating the marketing of pastoral products		**6.00**	**5.50**	**11.50**
3.1 Develop required infrastructures		2.50	2.50	6.00
3.2 Develop small enterprises (start-ups) and income generating activities		2.50	2.00	5.00
3.3 Develop agro-pastoral value chains		1.00	1.00	2.00
Component 4 : Improving rangeland production and productivity		**14.5**	**1.5**	**16.00**
4.1 Rehabilitate and plant 100,000 ha of rangelands with native and adapted species		7.50	0.50	8.00
4.2 Develop run-off water collection sites		7.00	1.00	8.00
Component 5 : Strengthening managerial and technical capacities of stakeholders		**5.50**		**5.50**
5.1 Support civil society and professional organizations		1.00		1.00
5.2 Create a forum for discussion/consultation between different stakeholders		1.00		1.00
5.3 Promote water, soil, livestock and rangeland management techniques		1.50		1.50
5.4 Develop ¨business plans¨ based on the integration of rangeland/oases		1.00		1.00
5.5 Promote local know-how and traditional practices		1.00		1.00
Component 6: Project management		**1.50**	**1.50**	**3.00**
Total		**40.00**	**10.00**	**50.00**

140. The project will allow a gain of sequestrated carbon of about 200 000 tons of carbon, that is more than 0.75 MtéCO2, and 8 times more than the initial stock of carbon. These estimations do not take into account the carbon from the soil, which represents probably a more important potential of sequestration. In dry areas such as Tunisia, the total stock of organic soil carbon is more than 5 times higher than that of the biotic carbon stock[30].

141. The assumptions used to calculate the estimates are as follows:

- The productivity of rangelands is estimated from measurements made in southeastern Tunisia (Tataouine governorate) rangelands;[31]
- The productivity of cactus and shrub plantations is estimated from data collected in the governorate of Sidi Bouzid ; [32]
- Removal by pasture is estimated at 30% of the produced biomass.

6.5 Transposition and replication potential

142. The activities which will be implemented within the context of the three investment projects are likely to be scaled up and replicated in other territories across the country. The project intervention areas are representative of Tunisian forest and pastoral ecosystems. The joint management approach developed on the pilot landscape units of Project 1 are planned to be extended throughout Tunisian agro-silvo-pastoral landscapes. The total area of degraded private land is assessed at more than 1.5 million hectares in North-western Tunisia. The definition of an innovative and attractive funding mechanism to improve the use and value of degraded private agricultural lands and its implementation in Project 2 can potentially be replicated over a considerable area. Successful land and tree cover restoration and economic benefits on private land will encourage other private owners to make similar investments.

143. The institutional and regulatory strengthening activities and investments supported by the FIP will take into account the lessons learned from past and ongoing projects to enable replication of these initiatives over the national territory, or even elsewhere in the Mediterranean Basin. The fact that Tunisia is the only Mediterranean country which acceded to the FIP also gives it a role of pilot country. Project activities at the local level will be monitored and evaluated for effectiveness on the ground, particularly in terms of ecosystems, water and soil protection, carbon sequestration and GHG emissions reduction, and local socio-economic development and lessons will be drawn from these experiences. It is important to note that the policies and regulations that will be developed will affect forests and rangelands outside the areas chosen for three projects. Consequently, the outcomes and impacts of this PIF will be tremendous and and go beyond the direct effects on the areas considered.

144. The support provided at the scale of the governorates, particularly through capacity strengthening of the CRDA, will help to initiate a change of approach which can be replicated to different sites. Improvements in the institutional and regulatory framework supported by Component 3 of Project 1 will also facilitate successful replication of investments by the CRDA.

145. Activities implemented at local and regional scales will be used at national scale. In parallel to the activities on the ground, improvements in institutional and legal frameworks and capacity building actions

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[30] Bernoux M. & Chevallier T., 2013. Le carbone dans les sols des zones sèches. Des fonctions multiples indispensables. *Les dossiers thématiques du CSFD. N°10. décembre 2013.* CSFD/Agropolis International, Montpellier, France. 40 p.

[31] Ouled Belgacem, A., H. Ben Salem and M. El Mourid. Communal rangeland rest in arid areas, a tool for facing animal feed costs and drought mitigation: the case of Chenini community, Southern Tunisia. *Jourrnal of Biological Sciences 8(4): 822-825*

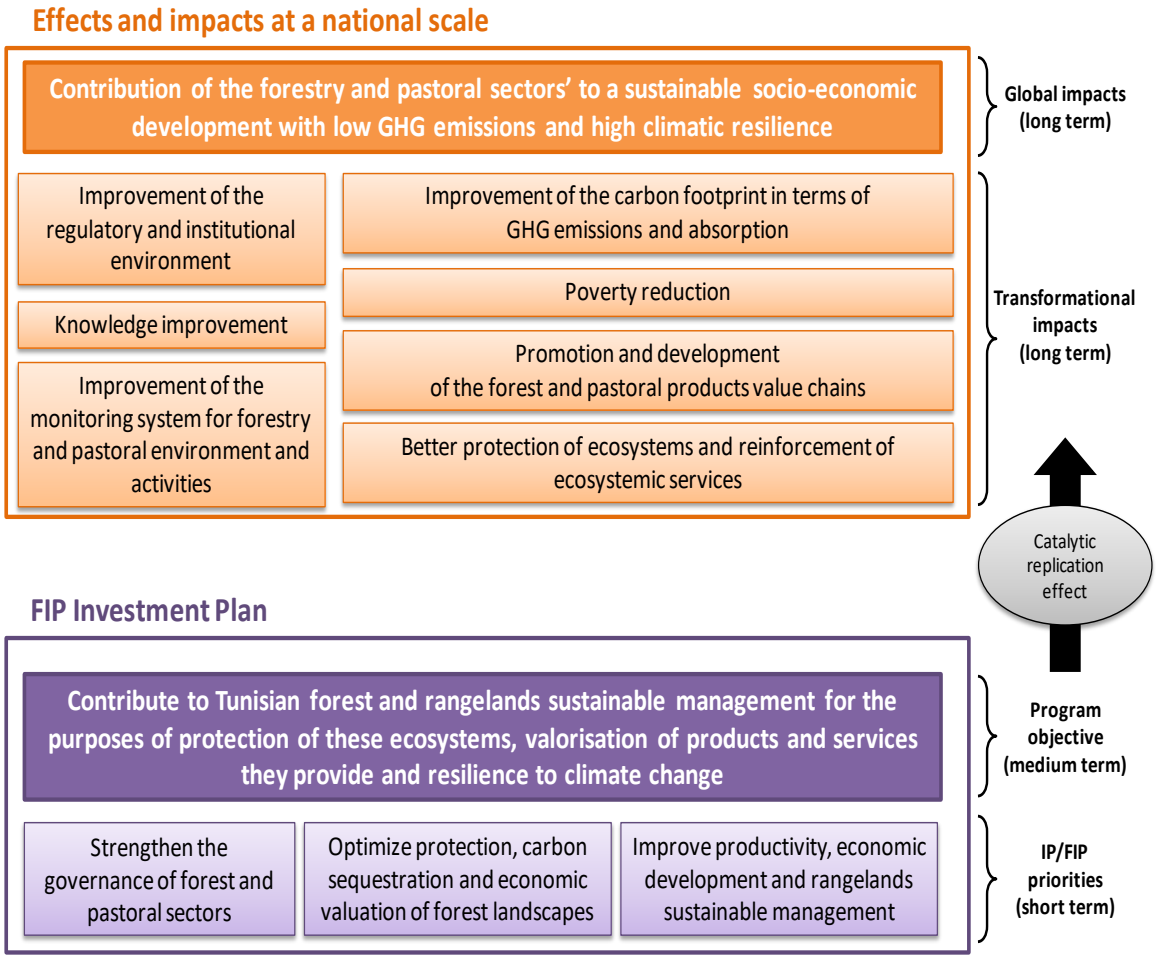
[32] Nefzaoui A., El Mourid M. (2009): Cacti: A key-stone crop for the development of marginal lands and to combat desertification. *Acta Horticulturae*, 811*: 365-372*

at central level will facilitate replication throughout Tunisia and a generalization of integrated national landscape approaches. Special attention will be paid to ensuring ownership at all levels of the Administration in charge of forests and rangelands, including through communication and awareness-raising actions throughout the MARHP and other departments involved in the management of agro-silvo-pastoral resources.

6.6 Transformational Change

146. Figure 5 below illustrates the expected transformational impacts. FIP implementation will help to initiate a real change of approach in the management of the rangelands, and forests, from a top-down, compartmentalized approach to joint-management principles which involve local populations and the private sector, use multisectoral approaches at the landscape scale and bring about economic, environmental and social benefits. Institutional and regulatory reforms will also facilitate sustainability. Funding mechanisms for investment in restoration of private lands present a new opportunity for integration of trees on agricultural landscapes. The FIP, REDD+ and GCF approaches to supports the transition towards a more accountable, participatory form of governance that is a key feature of the new democratically elected government. It also supports transition towards a more climate resilient, lower GHG emitting natural resource management, consistent with green growth principles.

Figure 5: Replication potential and transformational impacts of the IP/FIP



6.7 Implementation, coordination and monitoring

147. Consistent with FIP operational guidelines, implementation will be coordinated by a multi-stakeholder and multi-sectoral Steering Committee. A ministerial decision for the setup of this Committee was approved on 18 August, 2016 at the MAHRP. The Committee consists of 20 members of the Central and regional Administration services, of civil society, the private sector and local populations (GDA). The Steering Committee will also have oversight over monitoring, financing and evaluation. Consistent with the ongoing decentralization process in Tunisia, the composition of the Steering Committee will be regularly revised to include representatives of the future territorial communities. Given the high degree of interaction between the FIP and REDD+ process, the Steering Committee of the IP/FIP will also play the role of REDD+ National Committee and will work in close collaboration with the Climate Change National Committee.

148. At central level, a coordination unit will be established within the MARHP. It will include a national coordinator, assisted by a monitoring and evaluation expert and a communication expert. The Coordination Unit will work in close collaboration with the management units of each investment project. It will be set up prior to the start of the project preparation operations.

149. The *national coordinator* will be serve as secretariat for the FIP and will be responsible for coordinating between the IP/FIP projects, while being the interface with other initiatives related to the agro-silvo-pastoral landscapes and other forestry, and pastoral actors. The national coordinator will also make the link with the Climate Change, Global Environment Fund and Green Funds For Climate focal points placed within the Ministry of Environment and Sustainable Development, and initiatives related to the UNFCCC (national communications, biennial reports, CPDN, etc.), as well as the focal points of the two other conventions from the Rio process (UNCCD[33] and BDC[34]).

150. The *monitoring and evaluation expert* will coordinate monitoring of the IP/FIP investment projects and contribute to reporting of FIP activities to the Steering Committee. He will also participate in the design and to the implementation of the national forest and rangeland national monitoring system developed by Project 1, including definition of parameters to be monitored (carbon emissions/absorptions, activity data, capacity building activities, funding, technology transfer, etc.).

151. The *communications expert* will be responsible for communication and capitalisation actions, and of the events related to IP/FIP and the investment projects, in connection with the various bodies involved in the REDD+ process. Information will also be disseminated to various stakeholders and the public on land rights and the regulation of forest and pastoral communities.

152. At the regional/local level, the projects will be implemented by technical services represented in the CRDA. According to the needs assessment carried out during the project preparation phase, technical and human resource capacity building and assistance will be provided as necessary. In Project 1, dialogue structures and mechanisms integrating all stakeholders (Government departments, local authorities, private sector, civil society, local communities, technical and financial partners) will support participatory implementation.

153. Figure 6 below illustrates coordination and monitoring mechanisms between the FIP investment operations. Coordination with other projects related to natural resources management is also essential (and especially the PACTE, prepared by DGACTA and the AFD, PRODESUD II and PRODEFIL projects, implemented by the IFAD and the project prepared by the UNDP. Project 2 and 3 activities will complement territorial planning and natural resources co-management activities promoted by Project 1 and the PACTE. There are close links between value chain activities under Project 1 and activities to restore landscape and rangelands productivity under Projects 1, 2 and 3. Component 3 of Project 1 and component 1 under project

[33] *UN Convention to Combat desertification*

[34] *Convention on Biological Diversity*

3 will address regulatory and institutional barriers to sustainable natural resources management and contribute to the success of Project 2 and projects implemented by other partners. Removing regulatory barriers related to the integration of trees on private lands will notably enable to facilitate private owners' support to Project 2. The FIP coordination unit will support synergy between the investment projects. It will also develop, strengthen and/or support the partnership with implementation and execution units of other projects related to natural resources management.

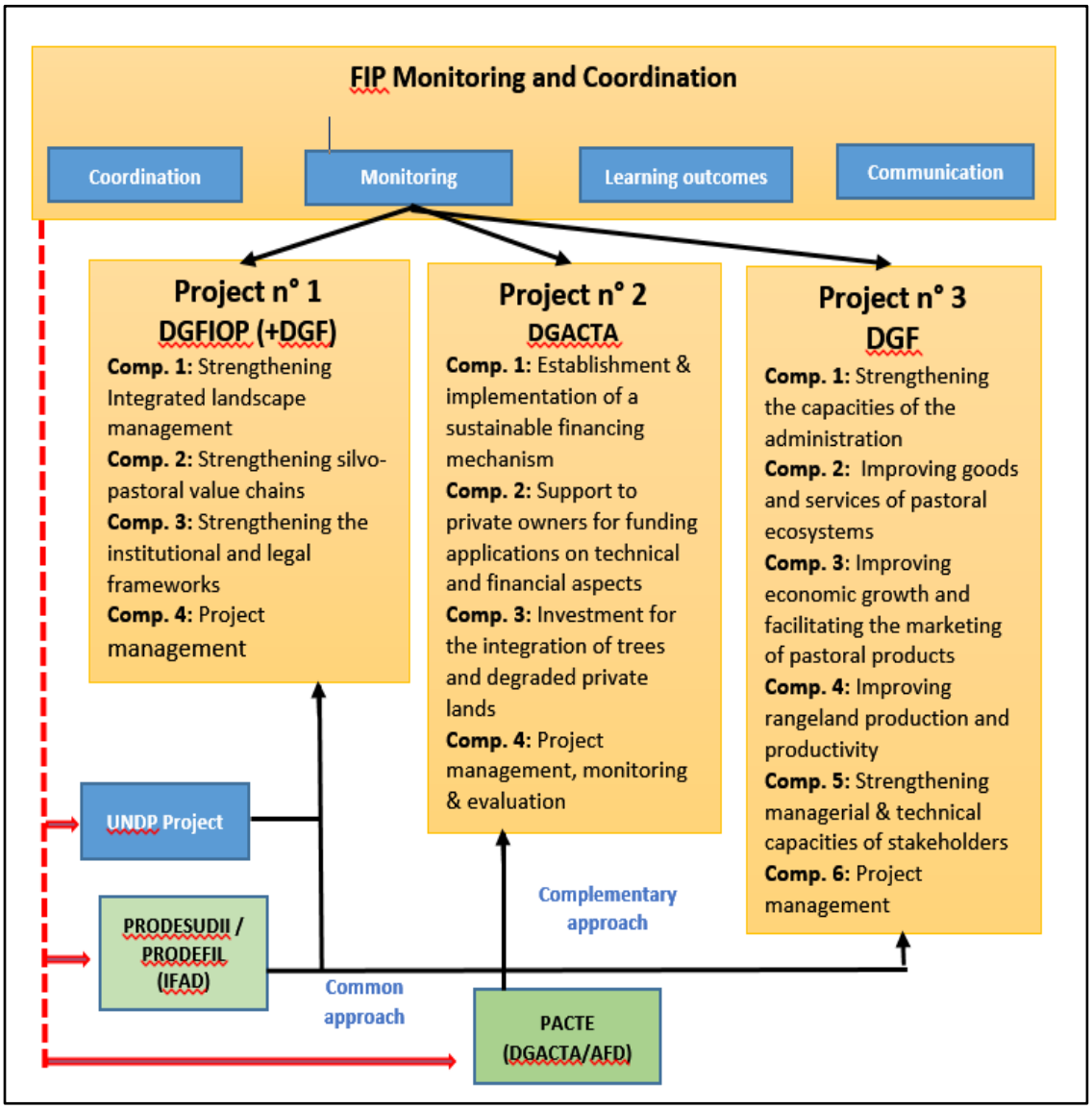


Figure 6: Structure of implementation and interconnection of IP/FIP projects

Section 7. Implementation opportunities and risk assessment.

7.1 Implementation capacity analysis

154. Lead agencies of the IP/FIP will include the CRDA, the central technical departments of the MARHP, as well as stakeholders from the private sector, of civil society organizations (NGOs) and local organizations and other relevant sectoral technical departments of the Administration.

155. Institutional capacity of the MARHP is limited in certain areas, due to (i) the lack of tools for planning and monitoring, (ii) the lack of human and material resources, and (iii) the lack of budgetary resources. Furthermore while technical capabilities of the Administration are quite strong, the change of approach proposed by the IP/FIP (see section Transformational Change 6.6) nevertheless requires communication, awareness, and substantial capacity-building actions to ensure genuine appropriation and ownership by officers of the Administration at all levels.

156. Private sector capacity varies, with, smaller enterprises benefiting often having limited technical and organizational skills. Larger private enterprises may have relatively strong technical but weaker communications and teaching skills.

157. Similarly, the capacities of civil society organizations vary greatly. Relatively numerous and active since the 2011Revolution, civil society organizations generally have limited means that restrict their capacity for action. If the technical skills are usually limited, their level of motivation and commitment are nevertheless frequently high. Local organizations, such as the GDA, have mostly very limited technical and organizational capacities. .

158. At a broader level The Administration, private sector and civil society players would also benefit from greater understanding of the REDD+ process, through information and communication programs. Illustrating the synergy between FIP/IP and REDD+ is important in this context.

159. Capacity limitations present a risk to successful FIP implementation, and highlight the need for significant capacity building programs at all levels (technical, organizational, etc.) and scales (national, regional, local). The IP/FIP will support an assessment of needs and capacity building activities at all levels, including provision of specialized technical assistance as needed.

160. Capacity building actions will support (and will be completed by) measures related to the strengthening of the institutional and regulatory framework under Project 1.). The activities to improve knowledge and the development of a national system for monitoring of forest and rangelands will also participate in the strengthening of the capacities of the different parties involved in the forest and rangeland sector.

7.2 Risks description

161. The implementation of the Tunisian IP/FIP will be confronted to risks of different nature and importance. The results of the risk analysis are presented in Table 11.

Table 11. Risk analysis and attenuation measures

Theme	Risk	Level[35]	Mitigation measures and factors
Security	Worsening of the security context in the mountainous and forested areas of western Tunisia.	Low	Tunisia has developed a counter-terrorism national strategy. The investment projects' implementation areas have been defined outside the sectors presenting security risks.
Regulations	Statutory blockages due to procedures and rules imposed by the existing texts	High	Project 1 provides for an in-depth revision of the legislative context, in order to make the legal framework compatible with the Tunisian socio-economical context and the specificities of the forest and pastoral sector. The project carriers will work in close collaboration with the Agriculture, Water Resources and Fishery Minister's office, in order to raise the awareness of the decision-making authorities on the necessity and the profits of the proposed activities.
Political	Lack of political support for the revision of the institutional and statutory frame	Medium	The restructuring of the forest administration and the rewrite of the forest Code are some actions inscribed in the NSDSMFR 2015-2024, which has been politically validated. There is now a general consensus concerning the necessity of the evolution of institutions and management approaches.
	Changes, blockages and/or tensions due to the evolution of the political context	Medium	The adoption of the 2014 constitution of the Republic of Tunisia and the integration of the environmental and climatic concerns should limit the risk of strategic reversal regarding the management of forests and rangelands.
	Lack of support by local authorities following the evolution of the context linked to the decentralization process	Medium	The institutional anchoring and the consultation frameworks defined for the implementation of the IP/FIP should be flexible enough to be able to adapt to the decentralization process, integrating in particular the local authorities.
Institutions	Lack of harmonization and coordination between the policies and sectorial strategies of the various Ministries	Medium	The proposed landscape approach allows handling the management of forests and rangelands in its multisectorial context. Actions of communication and raising awareness on the approaches and projects of the IP/FIP will be implemented with the representatives of the various concerned administrative structures, at the central level as on a local scale.
	Insufficiency of human, material and financial means	High	During the building-up of the investment projects, the human resources, the logistics and the financial plans will take into account the existing resources within the implementation structures.
Project management	Weakness of the capacities of management and follow-up of project, according to the procedures of the funding institutions	High	Each investment project plans actions of capacity building in accordance with the specific needs. An operational technical execution unit will be in charge of the implementation and coordination of the investment projects (see section 6.7)

[35] *Initial risk level*

Theme	Risk	Level[35]	Mitigation measures and factors
	Administrative delays during the procedures of recruitment, acquisition and\or calls for tender	High	Procedures for the management of the budget (by objective) and of management of acquisitions and calls for tenders will be developed so as to limit the risks.
Social	Lack of implication and investment of the local populations and the private sector	Medium	The investment projects will be implemented according to a participative approach including plans for consultation and cooperation to favour the degree of information and the level of implication of the local populations**.** The GDA, SMSA, MPME and other groups of producers will be considered as favoured interlocutors to make the link between the local communities and the national or international structures. An important territorial animation effort will be also led towards the private the owners in Project 2.
	Conflicts in connection with the private interests of the beneficiaries	Medium	
Environment	Delays due to climatic or environmental shocks (droughts, fires, pests, etc.)	Low	The activities implemented for the projects will take into account technical aspects relative to the environmental risks, in particular to the climate change (use of adapted or little sensitive species, for example).
	Overharvesting of natural resources following their access facilitation	Low	Management documents will be developed and will determine the right level of collection of different forest and pastoral products that are consistent with the sustainable management of the resource. The state services will be assisted to carry out a monitoring of the various forest products removed to ensure compliance with the limits set by the management of documents.

Section 8. Financing plan and instruments

162. The current Plan of Investment of the FIP (IP/FIP) was developed through an inclusive process, under the responsibility of the Tunisian Government, represented by the Ministry of Agriculture, Water resources and Fisheries (MARHP), with the assistance of the World Bank (WB), the African Development Bank (AfDB), the European Bank for Reconstruction and Development (EBRD), and the United Nations Food and Agriculture Organization (FAO).

163. This financing plan is estimated and may be adjusted later, during the project preparation phase of preparation of projects and the outcome of the funding applications submitted to different donors, and in particular FIP and GCF.

Table 12. Financing plan of Tunisia IP/FIP

Description		Total cost (million US$))	Financing Plan (million US$)					
			Guaranteed financing			Complementary Funding Requested		
			Gov.[36]	WB	AfDB	Private sector	FIP	GCF
Set up and running of the FIP coordination unit		**0,50**	TBD[37]					
Project 1: Integrated Landscape Management Project in the least developed regions of Tunisia								
Component 1: Strengthening integrated landscape management	1.1. Territorial development planning	35,0	-	20,0			5,0	10,0
	1.2. Implementation of practices and techniques of integrated management of landscapes s	45,0	-	35,0			5,0	5,0
		90,0	-	55,0			10,0	
Component 2: Strengthening of agro-	2.1. Capacity-building of national institutions and entrepreneurs for the development of the value chains	20,0	-	15,0				5,0

[36] *The national compensation will be for the most part in kind, in the form of provision of human, logistical and material resources necessary to operating the project*

[37] *TBD = to be determined (after approval of the IP/FIP, and according to available funding)*

Description		Total cost (million US$))	Financing Plan (million US$)					
			Guaranteed financing			Complementary Funding Requested		
			Gov.[36]	WB	AfDB	Private sector	FIP	GCF
silvo-pastoral value chains	2.2. Financing of investment plan	20,0	-	20,0				
		40,0	-	35,0				5,0
Component 3 : Strengthening of the institutional and legal framework	3.1. Strengthening of the legal framework	2,0	-	2,0				
	3.2. Strengthening of the institutional framework	5,0	-	5,0				
		7,0	-	7,0				
Component 4: Project management	Management and monitoring of the Project	**10,0**	-	3,0			2,0	5,0
	TOTAL Project 1	**137,0**	**-**	**100,0**			**12,0**	**25,0**
Project 2: Integration of the tree in degraded private farmland								
Component 1: Establishment of an sustainable financing mechanism	1.1. Preparatory studies	0,1	-		0,1			
	1.2. Definition of a funding mechanism	0,4	-		0,4			
	1.3. Institutional setting of the funding mechanism	0,1	-		0,1			
		0,6	-		**0,6**			
Component 2: Support to private owners for funding applications on technical and financial aspects	2.1. Identification of owners and farms	0,4	-		0,4			
	2.2. Studies of potential and investment planning	1,4	-		1,4			
	2.3. Support to the beneficiaries for preparing the funding applications	1,1	-		1,1			
		2,9	-		**2,9**			
Component 3: Investments for the integration of the tree	3.1. Arboriculture et agroforestry	15,9	-		3,0			12,9
	3.2. Forest plantations and domestication of medicinal and aromatic plants	21,4	-		1,0		5,0	15,5
	3.3. Strengthening the capacity of private owners	4,1	-		1,0		2,5	0,6

Description		Total cost (million US$))	Financing Plan (million US$)					
			Guaranteed financing			Complementary Funding Requested		
			Gov.[36]	WB	AfDB	Private sector	FIP	GCF
in degraded private land		**41,4**	-		**5,0**		**7,5**	**29,0**
Component 4: Project management, monitoring and evaluation	Management and monitoring of the project	4,1	-		1,5		2,5	
	TOTAL Project 2	**49,0**	**-**		**10,0**		**10,0**	**29,0**
Project 3: Sustainable management of Tunisian rangelands								
Component 1: Strengthening the capacities of the administration	1.1 Facilitate the formulation et implementation of the Pastoral Code	0.50						0.50
	1.2 Develop and implement adapted governance models	0.25						0.25
	1.3 Develop the national strategy of rangelands management	0.25						0.25
	1.4 Develop economic policies and instruments for the rehabilitation and rangelands resting/*mise en défens*	4.50						4.50
		5.50						
Component 2: Improving goods and services of pastoral ecosystems	2.1 Formulate and implement 20 sound management plans	0.50						0.50
	2.2 Develop landscape ecologic and cultural tourism	6.00						6.00
	2.3 Protect and upscale biodiversity ecosystems	0.50					1.50	0.50
		8.50						
Component 3: Improving economic growth and facilitating the marketing of pastoral products	3.1 Develop required infrastructures (water points, feeder road, platforms/markets	6.00					2.50	2.50
	3.2 Develop small enterprises (start-ups)and income generating activities	5.00					2.00	2.50
	3.3 Develop agro-pastoral value chains	2.00					1.00	1.00

Description		Total cost (million US$))	Financing Plan (million US$)					
			Guaranteed financing			Complementary Funding Requested		
			Gov.[36]	WB	AfDB	Private sector	FIP	GCF
		11.50						
Component 4: Improving rangeland production and productivity	4.1 Rehabilitate and plant 100,000 ha of rangelands with native and adapted species;	8.00					0.50	7.50
	4.2 Develop run-off water collection sites	8.00					1.00	7.00
		16.00						
Component 5: Strengthening managerial and technical capacities of stakeholders	5.1 Support civil society and professional organizations	1.00						1.00
	5.2 Create a forum for discussion/consultation between different stakeholders	1.00						1.00
	5.3 Promote water, soil, livestock and rangeland management techniques	1.50						1.50
	5.4 Develop ¨business plans¨ based on the integration of rangeland/oases	1.00						1.00
	5.5 Promote local know-how and traditional practices	1.00						1.00
		5.50						
Component 6: Project Management		**3.00**					**1.50**	**1.50**
	Total Project 3	**50.00**						

TOTAL GENERAL IP/FIP	**250.00**

Section 9. Investment Plan Result framework

165. Table 13 below shows the expected outcomes of Tunisia IP/FIP, the related indicators and data sources to be used. It is compatible and in line with the PIF results framework.[38]

Table 13. IP/FIP Logical Framework

IP/FIP Expected Outcomes	Indicators	Source of data	FIP corresponding results
A. Reduction of GHG Emissions of the forest and pastoral sectors and improvement of community livelihoods			
A1. Reduced GHG emissions from deforestation and degradation; enhancement of forest carbon stocks	a) Reduced emissions (Mtco2e) related to deforestation and degradation of forests and rangelands compared to a reference scenario b) Carbon sequestered (in Mtco2e) by planting, reforestation and natural regeneration operations carried out under the projects c) Decrease of the area of degraded forest and rangeland every year d) Decrease of the forest area burned annually e) Decrease in areas of forests and rangelands cleared annually	Existence of a national system for monitoring forests and rangelands (developed in the context of Project 1)	A1, A3, B1, C1, C2
A2. Improved forest and rangeland population livelihoods	a) Number of people (or households) who could increase their income through activities carried out under the project b) Level of increase of revenues from the exploitation and the improved use and value of forest and pastoral products c) Decrease in the unemployment rate in the areas concerned by the projects	Activity and assessment reports of projects Socio-economic surveys	A2, B2, C1
A3. Disparities affecting women and young people are reduced	a) Decrease in the young people unemployment rate in the areas concerned by the projects b) Number of women represented in Multisectoral Partnership Groups	Activity and assessment reports of projects Socio-economic surveys	A2

[38] Climate Investment Funds, 2011. *Forest Investment Program Results Framework*. May 13, 2011. 37 p.

IP/FIP Expected Outcomes	Indicators	Source of data	FIP corresponding results
	c) number of GDA (or other local groups) managed by active women in the forest and pastoral sector d) Number of private companies managed by active women in the forest and pastoral sector		
A4.The management and protection of forests of the state domain and rangelands are improved	a) Proportion of forests with a Management Plan b) Proportion of management plans actually implemented c) Decrease in burned or cleared in the projects intervention areas d) Decrease in the number of offences committed in the state forests e) Number of Integrated Landscape Development Plans developed and implemented	Activity and assessment reports of projects national system for monitoring forests and rangelands (developed in the context of Project 1) Activity reports and databases of the DGF	A1, A3, B1, C1, C2
A5. Degraded or threatened Agricultural landscapes are restored and upgraded	a) Existence of a mechanism for financing the investments on degraded private land b) Area of private lands where forest plantations took place c) Area of private lands where arboreal plantations took place d) Private land area where operations of domestication of forest medicinal and aromatic plants took place e) Private land surface area converted to agroforestry or agro-ecology f) Evolution of the forest cover (trees or shrub) in degraded agro-silvo-pastoral landscapes	MRV mechanism of Project 2 national system for monitoring forests and rangelands (developed in the context of Project 1) Activity and assessment reports of projects	A3, C1
B. Improvement of the rights of the populations and their access to forest and pastoral resources			
B1. access of local populations to forest and pastoral resources is improved	a) Evolution of the regulatory provisions relating to access to forest and pastoral resources b) Forest area better used by local people as part of a joint-management agreement c) Number of contract/convention of joint management realized and implemented d) Number of Multisectoral Partnership Groups (or equivalent) created for the joint-management of forests and rangelands e) number of GDA (or other local groups) active in the forest and pastoral sector	Regulatory texts Activity and assessment reports of projects National agricultural and forest statistics	A2, B2, C3, C4

IP/FIP Expected Outcomes	Indicators	Source of data	FIP corresponding results
C. Strengthening of Forest and pastoral Governance			
C1. The regulatory framework is strengthened	a) Existence of a revised Forestry Code and its implementing rules b) Reduction of inconsistencies between cross cutting legal texts and the provisions of the legislation governing the management of natural resources	Regulatory texts	B3, C3, C4
C2. The institutional framework is strengthened	a) Progress in the reorganization of the national institutions responsible for the management of natural resources b) Existence of a steering and monitoring structure of the institutional reorganization c) Existence of formal mechanisms for consultation, collaboration and cooperation between the different entities in charge of natural resources	Activity and assessment reports of projects Regulatory texts Institutions organisation chart	B3, C3, C7
C3. Transparency, accountability and commitment of stakeholders are improved	a) Number of consultation workshops organized b) Number of participant to consultation workshops c) Existence and enforcement of consultation procedures with stakeholders d) Number of management document adopted during a participative process e) Existence and enforcement of information disseminating procedures f) Existence of documents precising the duties of the different stakeholders in the natural resource management	Activity and assessment reports of projects Regulatory texts Administration procedures	B3, C3, C4, C7
D. Capacity-building			
D1. Improved knowledge and monitoring of forests and rangelands	a) Existence of a 3rd forest and pastoral national inventory b) Existence of a national system for monitoring forests and rangelands	Report of the 3rd national forest and pastoral inventory National system for monitoring forests and rangelands (developed in the context of Project 1)	B3, C5
D2. The capacity of the actors in the management of natural resources are strengthened	a) Number of trained central administration staff b) Number of trained CRDA staff c) Number of private owners trained to the management of restored land d) Number of GDA (or other local group) or GDA members trained	Activity and assessment reports of projects	B3, C4, C5

IP/FIP Expected Outcomes	Indicators	Source of data	FIP corresponding results
	e) Number of organizations or members of civil society organizations trained		
D3. Additional resources are invested in the management of forests and paths	a) Evolution of funding invested in forest and rangeland management b) Financing granted by international funding agencies and programs (FIP, GCF, FCPF, UN-REDD Program, etc.)	Annual budgets and institution in charge of forest and rangelands management Reports and balance sheets of the Administration and projects	B4, C6

ANNEXES

Annex 4: Investment projects of the Tunisian IP/FIP

Project n° 1: Integrated landscape management in Tunisia's lagging regions

Planned budget: US$ 137 million

A. Related Multilateral Development Banks and national institutions

The project will be implemented by a Management by Objectives Unit (UGO, for *Unité de Gestion par Objectif*), set up in the General Directorate of Funding, Investments and Professional Organism (DGFIOP), within the MARHP. At the local scale, it will be implemented by the CRDAs technical services (as the MARHP decentralized entity).

The project will benefit from the World Bank technical and financial support.

As a FIP investment project, the project will be steered by a FIP multipartite and multisectoral steering committee, which will include the representatives of all the related stakeholders (central and regional Administration, civil society organizations, the private sector and the local populations and organizations). A FIP (and REDD+) national coordination unit will also be set up and will support the project implementation unit for monitoring/evaluation, communication and coordination with other project operating in natural resources management un Tunisia (included the IP/FIP investment project n° 2).

B. Problem statement

The forest cover is expanding in Tunisia thanks to the efforts made in reforestation for many decades by the forestry Administration. On the other hand, the pastoral cover is declining in favor of irrigated farm lands. Besides, a relatively important forest and rangelands degradation phenomenon is observed.

The main factors of deforestation and degradation of forests and rangelands in Tunisia are indirect ones. The sustainable management of Tunisian forests and rangelands notably presents great governance problems mostly related to the regulatory and institutional context, and to the unilateral and compartmentalized approach of natural resources management applied by the Administration. Indeed, the under-valuing of forests and rangelands economic potential, and the lack of trust in the Administration are due to the lack of adaptation of the regulation to the needs and specificities of the forestry and pastoral sector, the weakness and complexity of the institutions in charge of the management of the natural resources and the lack of consultation and involvement of local populations and private sector, together with the forest and pastoral populations poverty. That phenomenon thus highly contributes to the anthropogenic pressure on the forest and pastoral ecosystems and their degradation.

The project n° 1 thus plans to answer these issues with activities that aim for implementing an organized and integrated sustainable management of agro-silvo-pastoral landscapes and at developing

the related sectors. These activities have been divided in five components that are described in section 6.2.3 of the IP/FIP:

- **Component 1: Strengthening integrated agro-silvo-pastoral landscape management**
  - Subcomponent 1.1: Territorial development planning
  - Subcomponent 1.2: Implementation of practices and techniques of integrated landscape management
- **Component 2: Strengthening agro-silvo-pastoral value chains**
  - Subcomponent 2.1: Supporting services for inclusive entrepreneurship in value chains development
  - Subcomponent 2.2: Financing of MSME (Micro-, Small and Medium Enterprises) investment plans in growing value chains
- **Component 3: Strengthening institutional and legal framework**
  - Subcomponent 3.1: Strengthening the legal framework
  - Subcomponent 3.2: Strengthening the institutional framework
- **Component 4: Project management**

C. Transformational impact and co-benefits

The impacts and benefits of Project n° 1 can be divided in three categories:

- **Economic benefits**: improvement of the population access to the forestry and pastoral resources, implementation of co-management approach which involve local populations and private sector, and development of agro-silvo-pastoral value chains will significantly improve rural household incomes and participate to a real economic development of the disadvantaged territories, which thus will contribute to reduce poverty.
- **Environmental benefits:** the improvement of forest and rangelands economic valuation, of the regulatory and institutional context, and of the techniques and management mechanisms will strengthen the ecosystems protection, and thus stimulate all environmental services they provide, notably in terms of carbon sequestration (climate change mitigation), soils and waters protection, soils fertility maintenance, biodiversity preservation, fight against desertification and adaptation to climate change.
- **Social benefits**: besides the improvements of the local populations' living conditions due to the economic and environmental benefits listed above (and described in section 4 of the IP/FIP), the project will contribute to the reduction of regional inequalities in Tunisia and develop a farer benefits sharing system from forests and rangelands between the different stakeholders. The inequalities women and young people have to face will also be reduced by the particular attention that will be paid to integrate them in the decision process and among the project's beneficiaries.

Beyond the social, economic and environmental benefits related to the activities of the project, the latter will have a real transformational impact on the sustainable management of the Tunisian forest and pastoral resources, notably through:

- The advocated change of approach (integrated, participatory and multi-sectoral approach at the landscape scale), which notably support the natural resources management decentralization process through territorial planning at landscape scale;
- The development of joint-management principles that promote the involvement of the local populations and public-private partnership;
- The strengthening of the institutional and regulatory context, which will lead to great changes favourable towards sustainable management, promotion and protection of the forests and rangelands;
- The activities of capacity building of the actors involved in the natural resources management;
- The improvement of knowledge and monitoring of forest and pastoral resources, which will allow optimizing their management, valuation and protection.

D. Expected potential GHG emission reduction

The vast majority of the activities planned by Project n^{o} 1 will indirectly generate emission reductions or strengthen carbon sequestration. The development of value chains and improving the use and value of forest products will contribute to reduce pressure on the ecosystems, and thereby improve their protection. Component 3 relating to the institutional and legal framework and the improvement of the knowledge and monitoring planned within component 1 will advance the enabling environment of the forest and pastoral sector , and thus improve the management, valuation and protection of forests and rangelands. The indirect nature of their impact in terms of reduction of carbon emissions or sequestration prevents them to be assessed at this stage.

However, during the implementation of the upcoming project, estimates may be made based on sub-component 1.2 activities that will directly result in emission reductions or enhancement of sequestration. For example, the implementation of thinning in stands will result in a productivity gain that can be estimated. Similarly, enrichment planting, plantations and regeneration of the stands will enable to increase carbon sequestration in forest environments, whose gain can be calculated. The results of these measures cannot however be quantified at this stage, because these activities are to be defined in a concerted manner during the development of the coordinated the preparation of the Integrated Landscape Development Plans.

E. Implementation preparation

Before its implementation some preparation activities are necessary. Detailed diagnoses of natural and socioeconomic context have been carried out in order to identify and describe the pilot landscape units which will be targeted by the project. Integrated Landscape Development Plans of 10 pilot sites have already been formulated. An institutional and legal diagnosis of the forestry administration was also carried out with the support of the World Bank, in order to prepare the institutional and legal framework strengthening activities. Nevertheless, the FIP Coordination Unit and the project management unit are still to be organized. The dialogue with the involved authorities will have to go on to ensure there is no blockage, be it political, institutional or regulatory when the project is implemented. In order to avoid regulatory blockage to the implementation of the co-management mechanisms, some forests and rangelands community management conventions will have to be

written and signed between the local organizations involved and the MARHP, to grant communities extended access to the forest and pastoral resources. Some precise diagnoses of the needs in capacity building will also have to be carried out, in relation with the different components of the project. Early territorial activities will also have to be carried out, notably on information and awareness raising of local actors to the planned project activities.

F. Potential national and international partners

Important synergies will be created between Project n° 1 and the second investment project proposed by the IP/FIP. Territorial planning implemented by Project n° 1 could indeed include the tree reintroduction activities in private agricultural degraded lands planned in Project n° 2.

Besides, the strong collaboration already initiated with the Climate Change Adaptation Program in rural areas (PACTE, for *Programme d'Adaptation au Changement climatique des Territoires ruraux vulnerables*), implemented by the DGACTA (for a total budget of € 56.11 million) with technical and financial support by the AFD, will have to be reinforced. Un tight cooperation also have to be implemented with the steering and implementing structure of "Addressing multiple threats to ecosystems, human health and livelihoods in west-central Tunisia" project, support by the UNDP and co-financed by the GEF, mostly about rangelands. This project, operating on close thematic and based on an identical approach with Project n° 1, will indeed complete and support its activities by complementary technical assistance activities. Similarly, collaboration will be pursued with PRODESUD II and PRODEFIL projects, implemented by IFAD in South Tunisia, considering that they have adopted a similar approach based on co-management, economic development and support to value chains. The FAO, GIZ and JICA, which participated to the development and the implementation of many projects related to pastoral resources (described in section 5 of the IP/FIP), can also constitute technical and/or financial partners of Project n° 1. A synergy between actions will be looked for and the gains and knowledge of past and current experiences will be highlighted.

A great synergy will also be deployed with the REDD+ preparation process implemented according the defined orientations of the R-PP jointly elaborated with the IP/FIP. The FCPF, the UN-REDD Programme and all the actors involved in the preparation process will thus constitute potential partners for the implementation of Project n° 1.

G. Justification of the FIP funding

Tunisia obtained a grant for the preparation of its IP/FIP, without however obtaining the guarantee on getting the funds for its implementation. In addition to the US$ 100 million funds (cf. section I below) obtained from the World Bank, Green Climate Funds and FIP are requested for complementary funding. Tunisia thus requests a US$ 12 million from the FIP, in order to strengthen the project activities. This funding would essentially strengthen component 1 activities, through more landscape units which will benefit of the support for participative territorial planning and the funding of more investments to implement integrated landscape development plans.

The fund request meets the FIP investment criteria insofar as:

- The improvement of the governance and management of the agro-silvo-pastoral landscapes will allow to directly and indirectly improve carbon sequestration, and thus to contribute to climate change mitigation;
- The developed activities at the landscape units scale are meant to be adapted and replicated at the national scale (cf. section 6.4 of the IP/FIP);
- The economic performance of the project will be guaranteed by the improvement of the economic valorisation of the forests and rangelands, and by the reduction of the costs that would come from the ecosystems degradation continuation;
- The planned activities integrate themselves perfectly in the framework of the SNDGDFP 2015-2024 and meet the real needs of the sector and the local populations, giving the project a great success potential;
- The project will turn a profit be it economic, social and environmental (cf. section C above), and thus will directly contribute to the sustainable development of the targeted territories;
- The required safeguards measures will be implemented (cf. section H below).

H. Safeguard measures

Project n° 1 will respect the Tunisian regulation and the World Bank's policies in terms of social and environmental safeguard, in order to prevent, reduce and mitigate the potential negative impacts on the environment and the populations.

The implementation of an extended consultation process with all the stakeholders from the project inception, to its delivery, should guarantee the project acceptation and appropriation. The strengthening activities of the institutional and regulatory framework will remove the risk of blockage of the project initiatives.

A strict monitoring of the project activities and their social and environmental impacts will be set up in order to guarantee the respect and efficiency of the safeguard measures.

I. Financing plan

Description	Financing plan (million US$)			
	WB	FIP	GCF	Total
Component 1: Strengthening integrated agro-silvo-pastoral landscape management	**55.0**	**10.0**	**15.0**	**80.0**
1.1 : Territorial development planning	20.0	5.0	10.0	35.0
1.2 : Implementation of practices and techniques of integrated landscape management	35.0	5.0	5.0	45.0
Component 2 : Strengthening agro-silvo-pastoral value chains	**35.0**		**5.0**	**40.0**
2.1 : Supporting services for inclusive entrepreneurship in value chains development	15.0		5.0	20.0
2.2 : Financing of MSME (Micro-, Small and Medium Enterprises) investment plans in growing value chains	20.0			20.0

Description	Financing plan (million US$)			
	WB	FIP	GCF	Total
Component 3 : Strengthening institutional and legal framework	**7.0**			**7.0**
3.1 : Strengthening the legal framework	2.0			2.0
3.2 : Strengthening the institutional framework	5.0			5.0
Component 4 : Project management	**3.0**	**2.0**	**5.0**	**10.0**
Total	**100.0**	**12.0**	**25.0**	**137.0**

Tunisia has obtained a grant for its IP/FIP preparation, without guarantee about the funding of its implementation. Thus, in addition to the US$ 100 million funds from the World Bank, Green Climate Funds and FIP are requested for complementary funding (respectively for US$ 25 million and US$ 12 million). The national contribution will be mostly in kind, through the provision of human logistic and material resources needed for the project functioning.

J. Schedule of the project preparation

Stages	Description	Indicative dates
Approval of the IP/FIP		Month 0
Preparation of the project	Consultations; elaboration of the project documents	Month 1 to 3
Estimation	Completion of the project documents	Month 4 to 5
Approval by the MDB	Submission of the project documents	Month 5
Approval by the FIP Subcommittee	Submission of the project documents	Month 6

Project n^{o} 2: Integration of the tree in degraded private farmland

Planned budget: US$ 49 million

A. Related Multilateral Development Banks and national institutions

The project will be implemented by an implementation unit, set up in the General Directorate of Agricultural Land Development and Conservation (DGACTA), within the MARHP. At the local scale, it will be implemented by the CRDAs technical services (as the MARHP decentralized entity).

The project will benefit from the African Development Bank technical and financial support.

As a FIP investment project, the project will be steered by a FIP multipartite and multisectoral steering committee, which will include the representatives of all the related stakeholders (central and regional Administration, civil society organizations, the private sector and the local populations and organizations). A FIP (and REDD+) national coordination unit will also be set up and will support the project implementation unit for monitoring/evaluation, communication and coordination with other project operating in natural resources management un Tunisia (included the IP/FIP investment Project n^{o} 1).

Project n° 2 and the financial mechanism that it will conceive will involve and an intermediary between the Administration/the donors and the private owners. This structure will be designated later according to the opportunities and practicable options, during the financial mechanism design stage (component 1.2). It could be a public investor, as *Caisse des Dépôts et Consignations*, a private specialized company of a financial/banking structure.

B. Problem statement

The land clearing for agriculture and the lack of technical knowledge of the private owners have led to the water erosion degradation of large surface areas. This highly contributes to the reduction of soils fertility and water resources (because of dam siltation). Rural zones are equally highly affected by poverty, which increases anthropogenic pressure on the forests and rangelands, and by overgrazing, thus favouring their further degradation and reinforcing some more the soils erosion phenomena. The measures implemented by Tunisia in order to encourage the owners to invest in forest plantations to reduce soils degradation have until today been inefficient, notably because of the constraints related to the forest regulation (and notably to the forestry regime application on private lands) and the population and private owner's lack of trust in the Administration.

Faced with these observations, Project n° 2 aims at promoting the integration of trees in degraded private farming land. It will be based on the design and implementation of an incentivizing innovative financing mechanism supporting investments in arboriculture, forest- and agroforestry plantations on private degraded land. The objectives are to (i) improve carbon sequestration, (ii) strengthen soil and water resources the protection, (iii) restore the confidence of private owners toward the administration and the forestry sector, and (iv) increase the income of the owners and local economic development. The activities of Project n° 2 were divided into four components, described in section 6.2.3 of the IP/FIP:

- **Component 1 : Establishment of an sustainable financing mechanism**
  - Sub-component 1.1: Preparatory studies
  - Sub-component 1.2: Definition of a funding mechanism
  - Sub-component 1.3: Institutional setting of the funding mechanism.
- **Component 2 : Support to private owners for funding applications on technical and financial aspects**
  - Sub-component 2.1: Identification of owners and farms
  - Sub-component 2.2: Studies of potential and investment planning
  - Sub-component 2.3: Support to the beneficiaries for preparing the funding application
- **Component 3 : Investments for the integration of the tree in degraded private land**
  - Sub-component 3.1: Arboriculture and agroforestry
  - Sub-component 3.2: Forest plantations and domestication of medicinal and aromatic plants
  - Sub-component 3.3: Strengthening the capacity of private owners and technical monitoring of the investments
- **Component 4 : Project management, monitoring and evaluation**

C. Transformational impact and co-benefits

The impacts and benefits of Project n° 2 can be listed in three categories:

- **Economic benefits**: the improvement of tree cover in degraded private lands will improve their productivity and the owners' income. This increase of income and the contribution to products issued from these lands to the development of the sectors of agro-silvo-pastoral products will participate to the economic development of the rural territories, and thus to the reduction of poverty.
- **Environmental benefits**: the investments in the degraded and endangered private lands will reinforce the environmental services they provide, notably in terms of carbon sequestration (climate change mitigation), soils and waters protection, maintenance/improvement of the soils fertility, and adaptation to climate change.
- **Social benefits**: besides the improvement of the private owners' life conditions related to the economic and environmental benefits mentioned above (and described in the IP/FIP section 4), Project n° 2 will contribute to the reduction of regional inequalities.

Beyond the social, economic and environmental benefits related to the project activities, the project will have a real transformational impact on the sustainable management of the forest and pastoral resources in Tunisia, notably through:

- The innovative financing mechanism which will make the measures of encouragement efficient at last;
- The economic valorisation of the private lands environmental services through the integration of a PSE system in the financing mechanism;
- The information, awareness raising and capacity building of private owners activities, which will improve practices sustainability;
- The reintroduction of trees in the degraded landscapes, which will initiate a real transformation in the agro-silvo-pastoral landscapes.

D. Expected potential GHG emission reduction

The project will allow the absorption of 0.255 Mt CO_2 over 10 years, and 1.7 million of tCO_2 over 30 years. The estimates are based on assumptions of growth in biomass and carbon content of soils, based on 2006 IPCC guidelines and the results of the 2010 Tunisia GHG inventory.

CO_2 sequestration by the Project over a 30 years period

	Quantity of carbon by period (in $kTeCO_2$)			
	1-10 years	**11-20 years**	**21-30 years**	**TOTAL**
Biomass Carbon	155	563	665	**1,383**
Soil Carbon	103	125	125	**353**
Total sequestered carbon	**258**	**688**	**790**	**1,736**

The estimates of amount of carbon sequestered by the Project are based on the following assumptions:

- 25,000 hectares of degraded private land will be concerned by investments, distributed into 10,000 ha of forest plantation and 15,000 ha of fruit tree plantations (half olive groves and half other fruit tree and agroforestry plantations).
- The estimate of annual increases in forest plantations is based on the example of Aleppo Pine plantation[39]s and in applying the IPCC methodology.
- Estimation of the annual increments of arboreal plantation is based on the figures used by the year 2010 GHG inventory, and also applying the IPCC methodology.
- For the storage of carbon from soils, the approach is also based on the results of the inventory of GHG by 2010, based on the IPCC methodology (and reducing the estimates so as to apply the precautionary principle).

E. Implementation preparation

Before the project implementation, many preparation activities are necessary. The FIP coordination unit and the implementation unit must be set up. A feasibility study, including a serious diagnosis and specific studies must also be carried out in order to improve knowledge about degraded lands, identify the priority intervention areas, according to the social, environmental and economic stakes, the implementation capacities and the landed property situation. The different intervention options will be studied and socio-economic and environmental impacts of the project will be evaluated in a first preliminary assessment. These studies will use the existing documentation while developing the Project n° 2 specificities.

F. Potential national and international partners

Important synergies will be created between Project n° 2 and Project n° 1 proposed by the IP/FIP. The operations of tree introduction in degraded private lands, planned in the framework of Project n° 2, could indeed be located in the targeted landscape units of Project n° 1. The specific monitoring system of Project n° 2 will have to be defined in order to be compatible with the national system of forests and rangelands monitoring developed in the framework of Project n° 1.

Besides, a strong collaboration will have to be established with the PACTE, financed by the AFD and implemented by the DGACTA, considering the interdependence of the thematic dealt with, the complementarity of the adopted approaches, of the intervention scales and of the selected territories. Indeed, the PACTE intervention will focus on 9 pilot territories, in 8 governorates, in which natural resources sustainable and participative management will be planned and implemented. In this framework, the PACTE will finance, amongst others, physical investment on a part of these territories, according to the priority degree estimated during the planning stage. The farms on which it will operate are usually small and exploited by organized (through a GDA or another local organization) or not farmers. On another hand, Project n° 2 will operate on all kind of properties and on the whole extent

[39] *Sghaier T. & Ammari Y., 2012. Croissance et production du pin d'Alep en Tunisie, INRGR, in Ecologia mediterranea, vol. 38*

of North-East and Central-West governorates of Tunisia, including on the properties located outside the pilot territories of the PACTE or outside the selected governorate on which the PACTE will operate. However, Project n° 2 of the IP/FIP can also operate in properties located in the PACTE pilot territories. In this case, these activities will have to be integrated in the territorial planning process developed by the PACTE. They could thus support the sustainable and participative natural resources management on rural areas objective of the PACTE, by completing PACTE physical investments with arboriculture, forest and/or agroforestry plantations. Moreover, an important synergy will have to be implemented with the PACTE during the definition and the realization of the preparatory studies for the design of the financing mechanism. The PACTE plans indeed some activities for defining a pilot mechanism, at small scale, to finance private efforts in natural resource management, agro-ecological activities development and support of local value chains. It is then essential that the activities of each project are implemented in line with each other in order to guarantee the complementarity of the different studies and synergies of their recommendations and conclusions. Depending on the results of the preparatory studies, it will be necessary to evaluate the relevance of an eventual convergence of both initiatives to a unique financing mechanism or of the design of two separate but complementary financing mechanisms.

Since Project n° 2 constitutes an important initiative in terms of REDD+, a synergy will also be created with the REDD+ preparation process, implemented according to the defined orientations in the R-PP designed together with the IP/FIP. The financing mechanism developed in the framework of Project n° 2 will notably be destined to develop into playing REDD+ funds (cf. R-PP in Annex 3). The FCPF and all the actors involved in the preparation process will thus constitute potential partners.

G. Justification of the FIP funding

Tunisia obtained a grant for the preparation of its IP/FIP, without however obtaining the guarantee on getting the funds for its implementation. Nevertheless, Tunisia seeks a US$10 million fund for its FIP.

The fund request meets the FIP investment criteria insofar as:

- The forestry, arboriculture and/or agroforestry investments financed on degraded private lands will allow carbon sequestration, and thus will contribute to **climate change mitigation** ;
- There are quite large surface areas of degraded private lands in Tunisia, which gives a **high potential of transposition and replication** to the national scale of the planned investments for the introduction of trees in degraded lands (cf. section 6.4 of the IP/FIP);
- The funding mechanism and the PSE system which will be integrated will be designed in order to guarantee their **economic efficiency**, by notably planning a financial model which can last far beyond the project implementation duration;
- The project conforms with the 2015-2024 SNDGDFP's orientations since it is promoting reforestation on private lands, which thus gives it a **great success potential**;
- The project will turn a profit be it economic, social and environmental (cf. section C above), and will thus directly contribute to the **sustainable development** of the targeted territories;
- Conforming safeguard measures will be implemented (cf. section H below).

H. Safeguard measures

Project 2 will respect the Tunisian regulation and the African Development Bank's policies in terms of social and environmental safeguard, in order to prevent, reduce and mitigate the potential negative impacts on the environment and the populations.

The implementation of an extended consultation process with all the stakeholders should guarantee the project acceptation and appropriation. The strengthening activities of the institutional and regulatory framework that will be carried out in parallel by Project 1 will remove the risk of blockage of the project initiatives, which would have negative consequences.

In the framework of the component 1.2, the eligibility criteria for private lands and owner's development projects will be defined according to the economic, environmental and social stakes, and will guarantee there will be no unwanted impacts.

A strict monitoring of the project activities and their social and environmental impacts will be set up in order to guarantee the respect and efficiency of the safeguard measures.

I. Financing plan

Description	Financing plan (million US$)			
	AfDB	GCF	FIP	Total
Component 1 : Establishment and implementation of a sustainable financing mechanism	**0.6**			**0.6**
1.1 : Preparatory studies	0.1			0.1
1.2 : Definition of the funding mechanism	0.4			0.4
1.3 : Institutional setting of the funding mechanism	0.1			0.1
Component 2 : Support to private owners for funding applications on technical and financial aspects	**2.9**			**2.9**
2.1 : Identification of owners and farms	0.4			0.4
2.2 : Studies of potential and investment planning	1.4			1.4
2.3 : Support to the beneficiaries for preparing the funding applications	1.1			1.1
Component 3 : Investments for the restoration and enhancement of degraded private land	**5.0**	**29.0**	**7.5**	**41.4**
3.1 : Arboriculture and agroforestry	3.0	12.9		15.9
3.2 : Forest Plantations and domestication of medicinal and aromatic plants	1.0	15.5	5.0	21.4
3.3 : Strengthening the capacity of private owners and technical monitoring of the investments	1.0	0.6	2.5	4.1
Component 4 : Project management, monitoring and evaluation	**1.5**		**2.5**	**4.1**
Total	**10.0**	**29.0**	**10.0**	**49.0**

Tunisia has obtained a grant for its IP/FIP preparation, without guarantee about the funding of its implementation. Thus, in addition to the US$ 10 million funds from the African Development Bank, Green Climate Funds and FIP are requested for complementary funding (respectively for US$ 29 million

and US$ 10 million). The national contribution will be mostly in kind, through the provision of human logistic and material resources needed for the project functioning.

J. Schedule of the project preparation

Stages	Description	Indicative dates
Approval of the IP/FIP		Month 0
Preparation of the project	Consultations; elaboration of the project documents	Month 1 to 5
Estimation	Completion of the project documents	Month 6 to 7
Approval by the MDB	Submission of the project documents	Month 7
Approval by the FIP Subcommittee	Submission of the project documents	Month 8

Project n^{o} 3: Sustainable management of Tunisian rangelands

Planned budget: US$ 50 million

A. Related Multilateral Development Banks and national institutions

The project will be implemented a coordination unit will be established within the MARHP. It will include a national coordinator, assisted by a monitoring and evaluation expert and a communication expert. At the local scale, it will be implemented by the CRDAs technical services (as the MARHP decentralized entity).

The project will benefit from the FAO technical executing agency and financial support to be acquired as a submission to GCF.

As a FIP investment project, the project will be steered by a FIP multipartite and multisectoral steering committee, which will include the representatives of all the related stakeholders (central and regional Administration, civil society organizations, the private sector and the local populations and organizations). FIP (and REDD+) national coordination unit will also be set up and will support the project implementation unit for monitoring/evaluation, communication and coordination with other project operating in natural resources management un Tunisia (included the IP/FIP investment Projects 1 and 2).

B. Problem statement

The rangelands is more than a third of Tunisian land which make any investment more than crucial to rural development, poverty alleviation and reducing disparity. Rangelands is a source of income for many rural population, however, its degradation, its inability to provide any more goods and services that it used, loss of biodiversity, hindered the acceptable livelihoods of its population, therefore decrease (or at least the lack of improvement) of the local populations income (related to the reduction of the available pastoral resources), reduced its environmental functions, decreased its capacity to e sequester carbon stocks and enhanced desertification progression. Over the years the situation of rangelands deterioration has worsened; communal utilization of rangeland where policies are not adequate and individuals compete with one another for access to limited amount of forage is believed

to be one of the many causes of land degradation. Legislation relating to range management is weak and ineffective. There are however policies and legislative frameworks that if improved and if implemented can contribute to protection and sustainable use of the rangelands.

Project 3 aims globally will establish rangelands economic, environmental, and cultural functions by improving its productivity, resilience, and conservation in order to improve goods and services of the pastoral ecosystems and the local populations' livelihoods, increase the sequestered carbon stock and present/slow-down desertification.

- **Component 1. Strengthening the capacities of the administration on charge of rangelands at national, regional and local levels.**
  - Facilitate the formulation et implementation of the Pastoral Code
  - Develop and implement adapted governance models
  - Develop the national strategy of rangelands management
  - Develop economic policies and instruments for the rehabilitation and rangelands resting/mise en défens.
- **Component 2 : Improving goods and services of pastoral ecosystems**
  - Formulate and implement 20 sound management plans
  - Develop landscape ecologic and cultural tourism (20 sites)
  - Protect and upscale biodiversity ecosystems.
- **Component 3 : Improving economic growth and facilitating the marketing of pastoral products**
  - Develop required infrastructures (water points, feeder road, platforms/markets)
  - Develop small enterprises (start-ups)and income generating activities
  - Develop agro-pastoral value chains
- **Component 4 : Improving rangeland production and productivity**
  - Rehabilitate and plant 100,000 ha of rangelands with native and adapted species
  - Develop run-off water collection sites.
- **Component 5 : Strengthening managerial and technical capacities of stakeholders**
  - Support civil society and professional organizations
  - Create a forum for discussion/consultation between different stakeholders
  - Promote water, soil, livestock and rangeland management techniques
  - Develop ¨business plans¨ based on the integration of rangeland/oases
  - Promote local know-how and traditional practices

C. Transformational impact and co-benefits

FIP implementation will help to initiate a real change of approach in the management of the rangelands, and forests, from a top-down, compartmentalized approach to joint-management principles which involve local populations and the private sector, use multisectoral approaches at the landscape scale and bring about economic, environmental and social benefits. Institutional and regulatory reforms will also facilitate sustainability. Funding mechanisms for investment in restoration of private lands present a new opportunity.

The impacts and benefits of Project 3 can be divided in three categories:

- **Economic benefits**: improvement of the population incomes through access to sustainable pastoral resources, restoration of ecological tourism, and development of pastoral value chains.
- **Environmental benefits:** Rangelands provide for species diversity of plants and animals. Good rangeland management including protection and conservation of plant and animal species helps to maintain a healthy ecosystem. In addition, rangelands provide habitat for many species of wildlife. It is therefore essential to maintain or restore desired wildlife habitat through ecologically sound rangeland management practices. Good vegetation cover provides a cushion for water catchment as more water is absorbed thereby reducing runoff and increasing ecological balance. Healthy rangelands are responsible for storage, retention and slow release of water. It is therefore necessary to provide for integrated management of water.
- **Social benefits**: improvement of the local populations' livelihoods due to the economic and environmental benefits listed above; reduction of regional inequalities in Tunisia; and development a farer benefits sharing system from rangelands between the different stakeholders. Also, Rangelands in good condition provide recreational opportunities that are conducive to ecotourism development.

D. Expected reduction of GHG emissions

The project will allow a gain of sequestrated carbon of about 200 000 tons of carbon, that is more than 0,75 MtéCO2, and 8 times more than the initial stock of carbon. These estimations do not take into account the carbon from the soil, which represents probably a more important potential of sequestration. In dry areas such as Tunisia, the total stock of organic soil carbon is more than 5 times higher than that of the biotic carbon stock.

Expected potential carbon sequestration

Activity	Area (ha)	Biomass before action (kg MS/ha)	Biomass after action (kg MS/ha)	C before action (tons)*	C after action (tonnes)*	C from rang.	Seq. carbon (ton)
Exclosure	315 000	345	3 150	28 980	264 600	79 380	156 240
Semis + mise en défens	80 000	133	2 800	3 200	67 200	20 160	43 840
Plantation	20 000	300	12 500	2 400	90 000	30 000	60 600
Total	**415 000**	-	-	**24 120**	**326 800**	**98 040**	**260 680**

E. Implementation preparation

Before the project implementation, many preparation activities are necessary. The FIP a multi-stakeholder and multi-sectoral Steering Committee must be set up.

F. Potential national and international partners

Coordination with other projects related to natural resources management is also essential (and especially the PACTE, prepared by DGACTA and the AFD, PRODESUD II and PRODEFIL projects, implemented by the IFAD and the project prepared by the UNDP. Project 3 activities will complement

territorial planning and natural resources co-management activities promoted by Projects 1 and 2 and the PACTE. There are close links with value chain activities under Project 1 and activities to restore landscape productivity under Projects 1 and 2. Component 3 of Project 1 will also address regulatory and institutional barriers to sustainable natural resources management and contribute to the success of this Project and of various projects implemented by other partners. The FIP coordination unit will support synergy between the investment projects. It will also develop, strengthen and/or support the partnership with implementation and execution units of other projects related to natural resources management.

G. Justification of the FIP funding

Tunisia obtained a grant for the preparation of its IP/FIP, without however obtaining the guarantee on getting the funds for its implementation. Nevertheless, Tunisia seeks a US$10 million fund for its FIP.

The institutional and regulatory strengthening activities and investments supported by Project 3 will take into account the lessons learned from past and ongoing projects to enable replication of these initiatives over the national territory, or even elsewhere in the Mediterranean Basin.

The fund request meets the FIP investment criteria insofar as:

- Rangeland investments will allow carbon sequestration, and thus will contribute to climate change mitigation;
- Funding mechanism will be designed in order to guarantee their economic efficiency, by notably planning a financial model which can last far beyond the project implementation duration;
- The project will turn a profit be it economic, social and environmental, and will thus directly contribute to the sustainable development of the targeted territories;
- Conforming safeguard measures will be implemented (cf. section H below).

H. Safeguard measures

Project 3 will respect the Tunisian regulation and FAO's policies in terms of social and environmental safeguard, in order to prevent, reduce and mitigate the potential negative impacts on the environment and the populations.

The implementation of an extended consultation process with all the stakeholders from the project inception, to its delivery, should guarantee the project acceptation and appropriation. The strengthening activities of the institutional and regulatory framework will remove the risk of blockage of the project initiatives.

A strict monitoring of the project activities and their social and environmental impacts will be set up in order to guarantee the respect and efficiency of the safeguard measures.

I. Financing plan

Component and sub-component	Amount (US$ million)			
	FAO	GCF	FIP	Total
Component 1. Strengthening the capacities of the administration		**5.50**		**5.50**
1.1 Facilitate the formulation et implementation of the Pastoral Code		0.50		0.50
1.2 Develop and implement adapted governance models		0.25		0.25
1.3 Develop the national strategy of rangelands management		0.25		0.25
1.4 Develop economic policies and instruments for the rehabilitation et rangelands resting		4.50		6.00
Component 2 : Improving goods and services of pastoral ecosystems		**7.00**	**1.50**	**8.50**
2.1 Formulate and implement 20 sound management plans		0.50		0.50
2.2 Develop landscape ecologic and cultural tourism (20 sites)		6.00		6.00
2.3 Protect and upscale biodiversity ecosystems		0.50	1.50	2.00
Component 3 : Improving economic growth and facilitating the marketing of pastoral products		**6.00**	**5.50**	**11.50**
3.1 Develop required infrastructures		2.50	2.50	6.00
3.2 Develop small enterprises (start-ups) and income generating activities		2.50	2.00	5.00
3.3 Develop agro-pastoral value chains		1.00	1.00	2.00
Component 4 : Improving rangeland production and productivity		**14.5**	**1.5**	**16.00**
4.1 Rehabilitate and plant 100,000 ha of rangelands with native and adapted species		7.50	0.50	8.00
4.2 Develop run-off water collection sites		7.00	1.00	8.00
Component 5 : Strengthening managerial and technical capacities of stakeholders		**5.50**		**5.50**
5.1 Support civil society and professional organizations		1.00		1.00
5.2 Create a forum for discussion/consultation between different stakeholders		1.00		1.00
5.3 Promote water, soil, livestock and rangeland management techniques		1.50		1.50
5.4 Develop ¨business plans¨ based on the integration of rangeland/oases		1.00		1.00
5.5 Promote local know-how and traditional practices		1.00		1.00
Component 6: Project management		**1.50**	**1.50**	**3.00**
Total		**40.00**	**10.00**	**50.00**

K. Schedule of the project preparation

Stages	Description	Indicative dates
Approval of the IP/FIP		Month 0
Preparation of the project	Consultations; elaboration of the project documents	Month 1 to 5
Estimation	Completion of the project documents	Month 6 to 7
Approval by the MDB	Submission of the project documents	Month 7
Approval by the FIP Subcommittee	Submission of the project documents	Month 8

Annex 5: Stakeholders participation plan

The preparation of the IP/FIP in Tunisia is the result of a participative process which involves all the stakeholders of the forestry and pastoral sector at the national scale. That process led to:

- Consultations with the representatives of the stakeholders during a technical mission in March 2016;
- Field visits in March 2016, in the B"ja and Sidi Bouzid governorates, which allowed the consultation of the State decentralized services and local organizations (GDA);
- Focus groups meetings with the different stakeholders (national institutions, civil society organizations, the private sector, the technical and financial partners), during the first joint mission of the MDBs, in June 2016;
- A national workshop with all stakeholders, from the 6th to 8th September, 2016.

Additionally, a national multipartite and multisectoral steering committee has been created by a MARHP ministerial decision on 18th August 2016. The steering committee is composed of representatives of the central and regional Administration, the civil society, the private sector and the local populations (GDA). That committee will not have only the IP/FIP development to follow up but also the implementation of the investment projects. According to the context related to the ongoing decentralization process in Tunisia, the steering committee composition will have to be regularly updated in order to integrate the future territorial collectivities representatives.

The following sections represent the various stakeholders which have participated to the development of the IP/FIP and which will be involved in its setting up.

State administration

A few executives from the various Ministries and institutions supervised by the government have been involved in the development of the IP/FIP in Tunisia. The related Ministry departments are notably:

- The Ministry of Agriculture, Water Resources and Fisheries (MARHP) and, within it the DGF (and its different Boards of Directors), the DGFIOP, the DGSAD, the DGAPC, the DGDLHF, the DGOF;
- The Ministry of Environment and Sustainable Development (MEDD), and notably the DGEQV;
- The Ministry of Investment Development and International Cooperation (MDICI), and notably the DGCFM;
- The Ministry of Local Business.

The involved institutions supervised by the MARHP are the following: the *Régie d'Exploitation Forestière* (REF), the *Office de Développement Sylvo-Pastoral du Nord-Ouest* (ODESYPANO), the *Office de l'Élevage et du Pâturage* (OEP), the *Institut National des Recherches en Génie Rural, Eau et Forêts* (INRGREF; supervised by the *Institution de Recherche et de l'Enseignement Supérieur Agricoles*), the *Institut National de Recherche Agronomique de Tunis* (INRAT),the *Institut des Régions Arides* (IRA) of Médenine, and the *Agence de la Vulgarisation et de la Formation Agricole* (AVFA). The involved forestry Administration decentralized services are the administrative forestry areas (ArF) of the *Commissariats Régionaux au Développement Agricole* (CRDA) of Béja, Sidi Bouzid and Bizerte. The "Climate change" Task Force of the MARHP was also consulted during the IP/FIP preparation phase.

All the national institutions will be able to contribute to the implementation of the IP/FIP, according to their expertise and prerogatives. In the light of the activities and areas of expertise of the MARHP, already responsible for the IP/FIP development in Tunisia, the MARHP will nonetheless have a central role in its implementation since the technical unit for operational execution in charge of the coordination of the investment projects will be placed within the Ministry (cf. section 6.6 of the IP/FIP). It is also the MARHP, and more particularly the DGF (within which was designed the FIP focal point in charge to monitor the process), which will host the FIP Steering Committee and will play an essential role in the whole plan organization.

Civil society

The civil society includes the NGOs and other local organizations, such as the *Groupements de Développement Agricole* (GDA), the *Sociétés Mutuelles de Services Agricoles* (SMSA) or the *Sociétés de Mise en Valeur et de Développement Agricole* (SMVDA).

Tunisia counts a great number of NGOs involved at the international, national and local scales. The ones that have been contacted and that contribute to the development of the IP/FIP are the WWF (World Wildflife Fund), the APEL (*Association pour la Promotion de l'Emploi et du Logement*), the AKAD (*Association de Kairouan pour l'Auto-Développement*), the Mawtini Byati association, the APEB (*Association pour la Protection de l'Environnement de Béja*), the Environnement Azmour association, the Al Madanya association and the ATPNE (*Association Tunisienne pour la Protection de la Nature et de l'Environnement*). These associations take actions in particularly varied fields, notably such as in information, education, communication and awareness campaigns for the preservation of the environment, health, fight against poverty, waste management, and the sustainable management of natural resources.

Local organizations are associations or groups of consumer or producer lobbies, with a professional vocation. They are very numerous in Tunisia, but the majority is not or very little functional.

Organizations of civil society will play an essential role in the implementation of the IP/FIP, notably in the framework of the territorial activities (consultation, information, awareness raising, and communication). Their involvement and representation in the steering committee will insure that the local populations' interests in the IP/FIP implementation process are taken into account. Capacity building actions will be carried out in favour of the civil society organizations, and thus these latter will be both beneficiary and proactive actors in the implementation of investment projects.

Local and traditional authorities

In Tunisia, there is no ancestral traditional authority that can compare to the traditional leaders that are found in other countries. However, the ongoing decentralization process will lead to the creation of territorial collectivities, for which representatives will be elected. These representatives will be closely included to the consultation process and the decision making related to the implementation of the investment projects of their concern.

Besides, in Central and South Tunisia, some collective lands Management Councils represent authorities at the limit between the political and traditional spheres (since they consist of members elected by the concerned collective lands stakeholders and of members appointed by the governor).

Private sector

The private sector is now relatively little involved in the forestry and pastoral sector (besides some occasional initiatives), notably because of the administrative and regulatory obstacles (cf. section 1.6 and 3.1 of the IP/FIP). It has nonetheless been included to the participative process of developing the IP/FIP, notably through cork stoppers factories (*Les bouchonneries tunisiennes*, *Société nationale du liège*) and essential oils companies (*Les vergers de Tunisie*, *Chambre syndicale des producteurs d'huiles essentielles*, microenterprise met in Béja governorate). The Jinène SA company, the *Union Tunisienne de l'Industrie, du Commerce et de l'Artisanat* (UTICA) and the *Union Tunisienne de l'Agriculture et de la Pêche* (UTAP) have also been involved in the process.

The actors of the private sector will contribute to the implementation of the IP/FIP, which precisely aims for developing public-private partnership mechanisms, notably in the framework of the co-management systems and in the activities of support to the development of agro-silvo-pastoral value chains which will be developed by Project 1.

The private owners will also constitute unavoidable actors since they are the direct beneficiaries of investments, notably in the framework of Project 2 related to the implementation of a funding mechanism incentive to investments in degraded private lands.

Finally, the *Caisse des Dépôts et Consignations* (CDC), which is a public office and long-term investor for the general interest, acts as a support to the private sector and has interesting potential. As CDC has participated to the IP/FIP preparation process, it could also play an important role in its implementation, notably with Project 2 and the financing mechanism it plans.

Technical and financial partners

from the Multilateral Development Banks (the World Bank, African Development Bank and European Bank for Reconstruction and Development) which lead the IP/FIP development process, can also be named the *Agence Française de Développement* (AFD), the International Fund International for Agricultural Development (IFAD), the Japanese International Cooperation Agency (JICA), the Global Environment Facility (GEF), the Food and Agriculture Organization of the United Nations Organization (FAO) and the *Agence de Coopération Internationale Allemande* (GIZ). These technical and financial partners have been implicated in the IP/FIP preparation process. They will also have an important role in its implementation, as potential donors and through essential collaboration needed to guarantee a proper synergy between current or future programs and projects

Annex 6: Tunisia Readiness Preparation Proposal (R-PP)

The R-PP sets out a roadmap for Tunisia to achieve REDD+ Readiness over a period of approx. 4 years (2017-2020) with a budget totalling US$ 3.67m. This annex presents only the R-PP executive summary. See a more detailed presentation in Appendix 14.

Tunisia, just as other North African countries, cannot be considered as a classical REDD+ country. With the data that is currently available forest cover (approx. 6%), average forest carbon stocks (37tC/ha) and the annual deforestation rate (<1000 ha) can be considered to be very low when compared to most if not all other REDD+ countries. However, forest degradation mainly through grazing and fuelwood extraction is considered to be a major problem and the largest source of GHG emissions.

As such, activities to reduce forest carbon emissions are not financially viable at current carbon prices of US$ 5. Yet, Tunisian forest ecosystems provide vital ecosystem goods and services to the entire society, but in particular the rural poor. An estimated 760,000 people, most of them considered to be poor, generate a third of their income and subsistence from forest products. The total economic value of forest ecosystem products and services in Tunisia was estimated at US$ 142 million in 2010 or approx. US$ 120/ha, of which only 5% is attributed to carbon retention and sequestration.

Tunisia has been an early advocate (see its UNFCC submission) of considering more seriously - i.e. by allocating funding - the multiple (non-carbon) benefits of REDD+, while at the same time undertaking efforts to enhance its forest monitoring system and the quality of its national GHG inventory to report also on forest carbon emissions. Tunisia, as expressed in its INDC, has also committed to reducing emissions in the forest sector.

Against this background, Tunisia is submitting an R-PP that is adapted to its specific situation. This is expressed through the following particularities:

- A comparatively simplified and streamlined institutional set-up, which seeks very close cooperation and also joint management with the Forest Investment Program (FIP)
- A focus on establishing only the minimum of REDD+ Readiness components first at the national level and avoiding overly complex design, but without compromising on core issues such as stakeholder participation or safeguards.
- Smaller-scale piloting of certain components such as a financing mechanism (instead of creating e.g. a national REDD+ fund)
- For regional implementation, work through the envisaged projects under the Investment Plan of the Forest Investment Program.
- For technical components such as REL and MRV, build on what has already been established, e.g. a REDD+ conforming forest monitoring system to produce activity data.
- Conceptual development and piloting of a multiple-benefits monitoring system (linked to the NFMS) with the aim of seeking result-based payments for non-carbon benefits.

National Readiness Management arrangements

The institutional set-up is kept comparatively simple, with a dedicated and joint management unit - the National Coordination for REDD+ & FIP/IP - for both the REDD+ Readiness Process and the Forest Investment Program. The CN is set-up under the MAHRP, with an appointed national coordinator and technical and administrative support staff, including an international senior REDD+ consultant. The CN is supervised by a steering committee, which consists of representatives of the government, civil society, the private sector and research institutions.

Technical work is advanced mainly through 4 working groups on 1) REDD+ strategy, 2) REL, MRV and Registry, 3) Benefit-Sharing and 4) Safeguards. These working groups are open to all stakeholders and - with the support of the CN and where needed also technical advice - are expected to steer and bring to conclusion their assigned topics.

Consultation and participation

A preliminary analysis of stakeholders and their potential roles in the national REDD+ process is provided in this R-PP. Further, stakeholders have been made aware of the national REDD+ process through a process of both individual consultations and joint meetings, including a national consultation workshop where an advanced draft version of the R-PP has been presented in September 2016.
Consultation and participation throughout the national REDD+ process rests on 5 pillars.

- Sensibilization and access to information: The CN will undertake an initial sensibilization campaign and will provide all information and documentation of the national REDD+ process through a dedicated website as well as inform about upcoming events and progress through a newsletter.
- Working Groups: The working groups are key for advancing the core elements of the national REDD+ Readiness process and are open to all stakeholders (see above).
- Public commenting period: Important documents are made available for public commenting and have to be taken into account.
- National validation workshops: Key REDD+ Readiness elements such as for example the national REDD+ strategy or the national safeguards policy will undergo a final validation to ensure a as far as possible societal consensus.
- A conflict resolution and grievance redress mechanism is established under the CN to ensure that there is a set procedure in case of conflicts.
-

Analysis of the drivers and underlying causes of deforestation and forest degradation & strategic REDD+ options

The main direct causes of deforestation and forest degradation are the clearing of land for agriculture or settlements, burning (human induced fires), fuelwood extraction and forest grazing.
The analysis of the underlying causes of deforestation and forest degradation points towards many administrative weaknesses, mal-adapted policies and forest management, but also poverty, a profound distrust between local forest users and the administration and a lack of detailed knowledge about the available forest resources which is needed to manage them more sustainable.
As a result, the following preliminary strategic REDD+ options are suggested, which will be subject to review and further analysis as part of the national REDD+ strategy process:

- To improve the governance and management of forests, both institutionally and regulatory,
- To better involve local forest users in the management of forests to both make forest use more sustainable (and legal) and improve the socio-economic situation
- To create alternative income sources by valuating the protection and thus maintenance of ecosystem services and thus reduce the dependence on extractive and unsustainable forest use.
- In general reducing pressure on forests by supporting alternative income sources, making current income sources more profitable (improving the value chain) and providing alternative sources of energy
- Increasing forest resilience and thus its carbon retention and sequestration potential through rehabilitation measures such as enrichment planting, reduction of grazing and use of well-adapted tree species and high quality seedlings.

REDD+ implementation framework

In this section, the R-PP provides details on the following key REDD+ components:

- A description of REDD+ activities to be implemented as part of envisaged projects under the FIP/IP.
- The design and process of establishing an investment and benefit-sharing plan. A simplified approach to carbon rights is suggested, where the right to emission reductions is ceded to the government in return for upfront investments and ex-post results-based payments as defined by an investment and benefit sharing plan.
- The design of a REDD+ registry, to transparently provide access to information on emission reduction performance, payment transfers and eventually sale of emission reductions.
- The design of a REDD+ financing instrument and its piloting under an envisaged project under the FIP/IP.
- How to address capacity building during the REDD+ Readiness process

Safeguards

The working group on Safeguards, supported by the CN and where necessary external consultant support, will initiate a national process which ultimately leads to the definition of a national set of social and environmental safeguards in line with the standards of the UN-REDD Program and the FCPF. The process comprises 1) Sensibilization of all stakeholders towards the need for good safeguards, 2) Identification of social and environmental risks related to REDD+ implementation, 3) carrying out a national process of formulating and adopting a national set of safeguards, 4) developing and putting in place a safeguards information system as part of the MRV system and 5) ensuring that REDD+ activities are implemented following the principles of free, prior and informed consent.

Reference Emission Level and MRV

Tunisia will aim to account for all five REDD+ activities. Accounting for forest degradation is considered to be very important, as the latter is likely to be the principal source of forest-related emissions. For deforestation, the REL and MRV will be based on a methodology and system recently introduced by FAO (Collect Earth), which makes use of sampling technique and freely available satellite imagery as well as online-databases to produce activitiy data. Historical data on deforestation over the last 10-15 years will be used to calculate either an historical average or develop a deforestation projection.

For monitoring forest degradation, a separate sample plot based ground monitoring system will be established. Data from the previous forest inventories will be used to estimate a REL for forest degradation.

Based on the current forest definitions, a new forest definition will be developed.

Emission factors will be derived through analysis of previous forest inventories. If necessary, additional field research will be carried out.

Tunisia will account for and report on all principal GHG (CO_2, CH_4, N_2O) and all major carbon pools except harvested wood products (considered to be insignificant).

The forest inventory unit at the Department of Forestry will be responsible for operating the MRV system and will support the working group on REL and MRV to develop both a REL and the MRV system with the help of additional technical support.

The MRV system will - at a conceptual and pilot stage - also include 1) monitoring of performance of individual REDD+ activities and 2) monitoring of non-carbon benefits.

Annex 4: Bibliographical references

Agence Nationale de Maîtrise de l'Énergie, 2014. Stratégie nationale de maîtrise de l'énergie – Objectifs, moyens et enjeux. Ministère de l'Industrie, de l'Énergie et des Mines. Agence Nationale pour la Maîtrise de l'Énergie. République Tunisienne. Juin 2014. 40 p.

Agence Nationale de Maîtrise de l'Énergie, 2015. Rapport technique 1 : Analyse de l'évolution du bilan énergétique de la Tunisie entre 2010 et 2013. ANME/GIZ/APEX Conseil. Décembre 2015. 97 p.

Banque Mondiale, 1995. Stratégie pour le développement des parcours en zones arides et semi-arides. Annexe III. Rapport technique. Tunisie, Département Maghreb et Iran, Bureau Régional Moyen Orient et Afrique du Nord.

Banque Mondiale, 2014. La Révolution Inachevée. Créer des opportunités, des emplois de qualité et de la richesse pour tous les Tunisiens. Mai 2014. 362 p.

Belgacem Areiz O. & Zaâfouri M.S., 1997. Impact de la privatisation des terres de parcours collectifs sur la végétation pastorale en zone désertique tunisienne. In : Bourbouze A. (ed.), Msika B. (ed.), Nasr N. (ed.), Sghaier Zaafouri M. (ed.). Pastoralisme et foncier ; impact du régime foncier sur la gestion de l'espace pastoral et la conduite des troupeaux en régions arides et semi-arides. Montpellier : CIHEAM, 1997. P. 213-217 (Options méditerranéennes : Série A. Séminaires méditerranéens ; n° 32)

Ben Mammou A. & Louati M. H., 2007. Évolution temporelle de l'envasement des retenues des barrages de Tunisie. Revue des sciences et de l'eau, vol. 20, n°2, 2007, p201-210.

[1] Bernoux M. & Chevallier T., 2013. Le carbone dans les sols des zones sèches. Des fonctions multiples indispensables. Les dossiers thématiques du CSFD. N°10. décembre 2013. CSFD/Agropolis International, Montpellier, France. 40 p

Boussaidi N., 2005. Parcours en forêt et risque de dégradation des potentialités pastorales dans la IV^{e} série forestière de Mekna (Tabarka-Tunisie). Université de Tunis-Carthage (INAT). Mastère de l'INAT en lutte contre la désertification.

Convention sur la diversité biologique (CBD) – GEF – PNUD. 5ème Rapport national sur la Diversité biologique. Juillet 2014

Centre National d'Études Agricoles, 2008. Étude sur l'état de la désertification pour une gestion durable des ressources naturelles en Tunisie/Rapport de la troisième phase/Février 2008

Climate Investment Funds, 2010. Directives opérationnelles du FIP. 29 juin 2010. 26 p.

DG Trésor, 2015. Le secteur du tourisme en Tunisie en 2014. Ambassade de France en Tunisie. Service économique régional. Mai 2015. 3 p.

DGACTA & FAO, 2006. Projet LADA : Pour une évaluation de la dégradation des terres en Tunisie. Cadre institutionnel et législatif, information et donnes disponibles, état des connaissances. 63 p.

DGACTA, FAO & Projet LADA. 2011. Rapport final. Projet Land Degradation Assessment in Drylands (LADA). Coordinateur : Hedi Hamrouni, FAO

DGF & Banque Mondiale, 2016. Diagnostic institutionnel et juridique de l'administration des forêts. Réformes institutionnelles et juridiques du secteur forestier. Mars 2016. 69 p.

DGF & FAO, 2007. Programme de développement et de valorisation des forêts de chêne liège de Kroumirie-Mogods – Document de synthèse. MARHP, Étude stratégique pour le développement durable de la subéraie tunisienne. Juin 2007. 64 p.

DGF & FAO, 2012. Étude sur la caractérisation de la population forestière en Tunisie. Avril 2012. 89 p.

DGF & World Bank Group, 2015. Vers une gestion durable des écosystèmes forestiers et pastoraux en Tunisie - Analyse des bénéfices et des coûts de la dégradation des forêts et parcours. 86 pages.

DGF, 1998. Bilan offre-demande de bois-énergie et d'énergies de substitution en Tunisie. Rapport intermédiaire. Première phase. Mars 1998. 57 p.

DGF, 1999. Analyse du bilan bois-énergie et identification d'un plan d'action en Tunisie. Rapport final de synthèse. Avril 1999. 44 p.

DGF, 1999. Analyse du bilan bois-énergie et identification d'un plan d'action en Tunisie. Phase III : définition d'un plan d'action. Version provisoire. Mars 1999. 115 p.

DGF, 2016. Évaluation des besoins et mise en place d'un Système National de Surveillance des Forêts en Tunisie et proposition d'une feuille de route. UN-REDD Programme. Mars 2016. 102 p.

Direction Générale de l'Environnement et de la Qualité de Vie, 2012. Étude d'évaluation de la représentativité écologique et de l'efficacité de gestion des aires protégées – Phase III. République Tunisienne. Ministère de l'Environnement. Mars 2012. 126 p.

Direction Générale des Forêts, 1995. Résultats du premier inventai
re forestier national en Tunisie. Ministère de l'Agriculture. 88 p.

Direction Générale des Forêts, 2010. Inventaire des forêts par télédétection – Résultat du deuxième inventaire forestier et pastoral national. Ministère de la Défense Nationale, Ministère de l'Agriculture, des Ressources Hydrauliques et de la Pêche et Ministère de l'Enseignement Supérieur et de la Recherche Scientifique. 195 p.

Ferchichi A. & Ayadi N., 2014. Inventaire analytique sur les techniques adaptées pour la gestion et l'aménagement des parcours au niveau des zones désertiques de la région MENA. Observatoire du Sahara et du Sahel. Projet MENA-DELP. 119 pages.

Gader D. & Daly-Hassen H., 2000. L'étude prospective du secteur forestier en Afrique – Tunisie. Direction Générale des Forêts. 35 p.

Guillaume H. 2009. Mutations agro-pastorales, ruralité et développement dans le Sud-Est tunisien. In Bonte P., Elloumi M., Guillaume H., Mahdi M. Développement rural, environnement et enjeux territoriaux. CERES éditions. Tunis.

Hamdi M. & Lahmayer I., 2016. Le foncier forestier et pastoral et la stratégie REDD+ en Tunisie. UN-REDD Programme. Ministère de l'Agriculture, des Ressources Hydrauliques et de la Pêche - Direction Générale des Forêts. Tunis, février 2016. 160 p.

Helal S., McConnel R. & Thirong P. S., 2007. Relier les programmes forestiers nationaux aux stratégies de réduction de la pauvreté. Cas de la Tunisie. Organisation des Nations Unies pour l'Alimentation et l'Agriculture. 8 août 2007. 37 p.

Jemaa T., Huguenin J., Najart T., Moulin C.-H., 2013. Impact de la diminution de la superficie des terres du parcours sur le changement des systèmes d'élevage des petits ruminants dans le Gouvernorat de Siliana en Tunisie Centrale. In proceeding FAO-CIHEAM Network on Sheep and Goats Sub-Network on Production Systems, 8th International Seminar Technology creation and transfer in small ruminants: roles of research, development services and farmer associations, Tangier, Morocco, 11 to 13 June 2013.

Le Crom M., Maurice J., Bouyer O. & Tounsi K., 2014. Analyse coûts-bénéfices de la REDD+ en Tunisie. GIZ, DGF. SalvaTerra. Mai 2014. 64 p.

Ministère de l'Environnement et de l'Aménagement du Territoire (MEAT). 1998. Programme d'action national de lutte contre la désertification, Tunisie

Ministère de l'Environnement et de l'Aménagement du Territoire, 2001. Communication initiale de la Tunisie à la Convention Cadre des Nations Unies sur le Changement Climatique. République Tunisienne. Octobre 2001. 222 p.

Ministère de l'Environnement et du Développement Durable & GTZ, 2010. Stratégie nationale d'adaptation au changement climatique du secteur touristique en Tunisie – Synthèse. République Tunisienne. Toursime, Transports, Territoires, Environnement Conseil. 26 novembre 2010. 18 p.

Ministère de l'Environnement et du Développement Durable, 2014. Cinquième rapport national sur la diversité biologique. République Tunisienne. CDB, GEF & PNUD. Juillet 2014. 89 p.

Ministère de l'Environnement et du Développement Durable, 2015. Inventaire des gaz à effet de serre en Tunisie pour l'année 2010. Volume 1 : Rapport principal de présentation des résultats ». République Tunisienne. Juillet 2015. 79 p.

Ministère de l'Environnement et du Développement Durable, 2016. Inventaires des gaz à effet de serre en Tunisie pour les années 2011 et 2012. MEDD/PNUD/CITEPA-APEX Conseil. Mai 2016. Document non encore publié officiellement.

Ministère de l'Équipement et de l'Environnement, 2013. Seconde Communication Nationale de la Tunisie à la Convention Cadre des Nations Unies sur les Changements Climatiques. République Tunisienne. Décembre 2013. 174 p.

Nefzaoui A., 2004. Rangeland improvement and management options in the arid environment of Central and South Tunisia. In : Ben Salem H. (ed.), Nefzaoui A. (ed.) Monrand-Fehr P. (ed.). Nutrition and feeding strategies of sheep and goats under hasrsh climates. Zaragoza : CIHEAM, 2004 (Options Méditerranéennes : Série A Séminaires Méditerranéens ; n°59). p.15-25.

Nefzaoui A., El Mourid M. (2009): Cacti: A key-stone crop for the development of marginal lands and to combat desertification. *Acta Horticulturae, **811**: 365-372*

Nefzaoui, A., El Mourid, M., Saadani, Y., Jallouli, H., Raggad, N., and Lazarev, G. 2007. A Field Manual for the Preparation of a Participatory Community Development Plan. ICARDA Aleppo, Syria, 116 p.

Office de Développement du Sud, 2014. Gouvernorat de Gabès en chiffres. République Tunisienne. Ministère du Développement, de l'Investissement et de la Coopération Internationale. 118 p.

Observatoire Tunisien de l'Environnement et du Développement Durable, 2009. Indicateurs des forêts durables. Ministère de l'Environnement et du Développement Durable - Agence Nationale de Protection de l'Environnement. 35 p.

Ouled Belgacem, A., H. Ben Salem and M. El Mourid. Communal rangeland rest in arid areas, a tool for facing animal feed costs and drought mitigation: the case of Chenini community, Southern Tunisia. Jourrnal of Biological Sciences 8(4): 822-825

Sghaier M & Ouled Belgacem A. 2011. Étude sur la vulnérabilité de l'écosystème pastoral face au changement climatique dans le gouvernorat de Médenine. Rapport thématique de l'économie environnementale (évaluation économique des biens et services de l'écosystème pastoral). MEDD/GTZ.

Sghaier T. & Ammari Y., 2012. Croissance et production du pin d'Alep en Tunisie, INRGR, in *Ecologia mediterranea*, vol. 38

World Bank, 2014b Tunisia. Breaking the Barriers to Youth Inclusion (World Bank, Washington).

Republic of Tunisia

FOREST INVESTMENT PROGRAM IN TUNISIA

Appendices

November 2016

WORLD BANK GROUP
Environment & Natural Resources

European Bank
for Reconstruction and Development

Ministère de l'Agriculture, des Ressources Hydrauliques et de la Pêche

Direction Générale des Forêts

List of appendices

Appendix 1: National context of the Tunisian forest and pastoral sector

1. Tunisia is a Northern African country with a surface area of 164,000 km^2. Tunisia borders with Algeria to the West and with Libya (Map 1) in the South-East. The population was 11 million in 2014. Its capital is Tunis. Administratively, Tunisia is divided in 24 Governorates which are named after their county town.

Map 1: General map of Tunisia

2. Tunisia's relief is contrasted (Map 2):
   - Its Northern mountainous part is crossed by the Tunisian ridge oriented Southwest / Northeast, which is an extension of the Atlas massif.
   - The relief of its half southern part, rather flat and mainly covered with steppe or desert, is composed of a succession of chotts, rocky plateaus and sand dunes.

Map 2: Tunisia relief

Map 3: Tunisia bioclimates

3. The country is characterized by a Mediterranean climate under a sub-Saharan influence, and has two seasons which are highly contrasted (hot and dry summer and mild and humid winter). 5 different bioclimates cover Tunisia, from the most arid in the South to the most humid in the North (Map 3). The mean annual rainfall also varies a lot according to the region. It can range from nearly 1,000 mm in the northwest to less than 100 mm in the far South of the country.

Appendix 2 : State of the forest and pastoral resources

Available data

4. Tunisia carried out two national forest inventories. The first one (DGF, 1995)[1] presents an update of the forest resources between 1988 and 1994 (the satellite images and aerial photographs date from 1988 to 1989, the field records date from 1992 to 1994). The second inventory (DGF, 2010)[2] presents an update of the forest and rangeland resources between 1998 and 2007 (the aerial photographs and satellite images used date from 1998 to 2003, the field records were made between 2000 and 2007). The results of these two national inventories cannot be directly compared in a reliable and thorough manner because of the significant differences in the methods that were used, and notably in terms of scales[3], the inventoried areas[4] and used land use classes[5].

5. The most recent, exhaustive and reliable official data about forest resources in Tunisia is that of the second national forest and rangeland inventory (NFPI). Most of the studies related to the Tunisian forest resources carried out since 2010 are based on these results. This data will therefore mainly be taken here for the estimation of the surface areas, the spatial distribution and qualitative description (specific composition, forage input) of the Tunisian forests and rangelands.

Forest resources

6. The surface areas by land-use type given by the second IFPN are presented in Table 1 below. This inventory considers as 'forest land' lands that are not forests such as uncultivated lands, scrublands (*garrigues*) and bush (*maquis*) with no tree cover, hedges and windbreaks, etc., because of their use as forest[6],. The surface of the forest lands has thus been estimated to 1,141,628 ha (between 1998 and 2003), whereas proper forest areas (including tree-covered scrublands and bush) would only cover in reality 673,193 ha (namely 4,1% of the national territory).

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[1] General Directorate of Forests, 1995. Results of the first national forest inventory in Tunisia. Ministry of Agriculture. 88 p.

[2] General Directorate of Forests, 2010. Inventory of forests by remote sensing – Results of the second national forest and pastoral inventory. National Defense Ministry, Ministry of Agriculture, Water Resources and Fisheries and Ministry of Higher Education and Scientific Research. 195 p..

[3] The first national forest and pastoral inventory characterised the land use at a scale of 1 / 50 000e, whereas the results of the second inventory were digitized at 1 / 25 000e

[4] Desert areas and the large South Tunisian chotts were not integrated into the first national forest inventory, while they were in the second one.

[5]. The land use categories defined in each inventory differ significantly between the two national forest inventories. This does not, for example, allow to calculate the evolution of the surface areas of the different land cover classes.

[6] The Forest Code defines as "land to be used as forest land any land which, for ecological and economic reasons, finds its best use in the establishment of a forest ".

Table 1: Distribution of the surface areas according to the land-use taken from the second IFPN

Land-use	Surface area (ha)	%
Forest surface areas	**673 193**	**4.1 %**
Arboretum	480	0.0 %
Small woods / Tree patches	1,908	0.0 %
Hardwood forest	140,209	0.9 %
Softwood forest	374,862	2.3 %
Mixed forest	26,633	0.2 %
Tree-covered *garrigue*	34,383	0.2 %
Young population	66,901	0.4 %
Tree-covered *maquis*	13,007	0.1 %
Riverbank plantations, dunes	14,810	0.1 %
Other forest cover	**464,436**	**2.8 %**
Windbreak, edges	1,831	0.0 %
Forest clearing	1,207	0.0 %
Garrigue with no tree cover	243,892	1.5 %
Uncropped/uncultivated land	131,855	0.8 %
Forest infrastructure	8,610	0.1 %
Maquis with no tree cover	70,178	0.4 %
Row/Ribbon plantation	6,863	0.0 %
Other land	**15,258,372**	**93.1 %**
Built land	184,694	1.1 %
Cropped land	4,503,112	27.5 %
Dessert	4,555,957	27.8 %
Rangeland + Mosaic	5,213,830	31.8 %
Water and humid zone	800,778	4.9 %
Total	**16,396,000**	**100.0 %**

7. The results taken from the second IFPN present a substantial degree of uncertainty related to (i) the use of aerial and satellite images which date between 1998 and 2003, which does not give a precise update at a given date, (ii) to confusions related to considering ecosystems that arer not forests as forests and to the chosen definitions for land use classes, (iii) to the difference between figures given in the different tables and the figures in the report, and finally (iv) to the significant lack of information on the methodology used and the obtained statistical accuracy.

8. The existing forest surface areas are frequently given as spanning 1 to 1.3 million hectares, according to the actors, the documents and the existing studies. These figures generally take into account the reforested areas by the Forest administration since 2000 (see Appendix 7), which are added to the forest surface area estimated by the second IFPN. The most recent estimate gives the Tunisian forest surface area as being 1,192,403 ha (in 2012)[7].

9. Data related to today's forest surface area in Tunisia equally presents quite an uncertainty, because of the existing doubts on the reliability of both the data given by the second IFPN and the data on the reforested areas between 2000 and 2010. Seeing that the surface area of real forest ecosystems (outside *maquis* and *garrigue* with no tree cover notably) between 1998 and 2003 and the

[7] *DGF & World Bank Group, 2015. Vers une gestion durable des écosystèmes forestiers et pastoraux en Tunisie - Analyse des bénéfices et des coûts de la dégradation des forêts et parcours. 86 pages.*

uncertainty on the reforested areas between 2000 and 2010, the real current forest surface area in Tunisia would a priori cover 750,000 to 850,000 ha.

10. The spatial distribution of the forests, according to the second IFPN, is presented in Map 4. The great majority of them (95% of the total forest surface area) are located in the northwest, northeast and western central part of the country. The natural forests are essentially located along the Tunisian ridge (see § 1 and Map 2), whereas forests from reforestation are mainly located in the north of Tunisia. The eastern central and south of the country are on the other hand nearly devoid of forest.

11. Most of forest land belongs to the State Forest Domain (SFD). Private forests represent less than 5 percent of all of the Tunisian forest area.

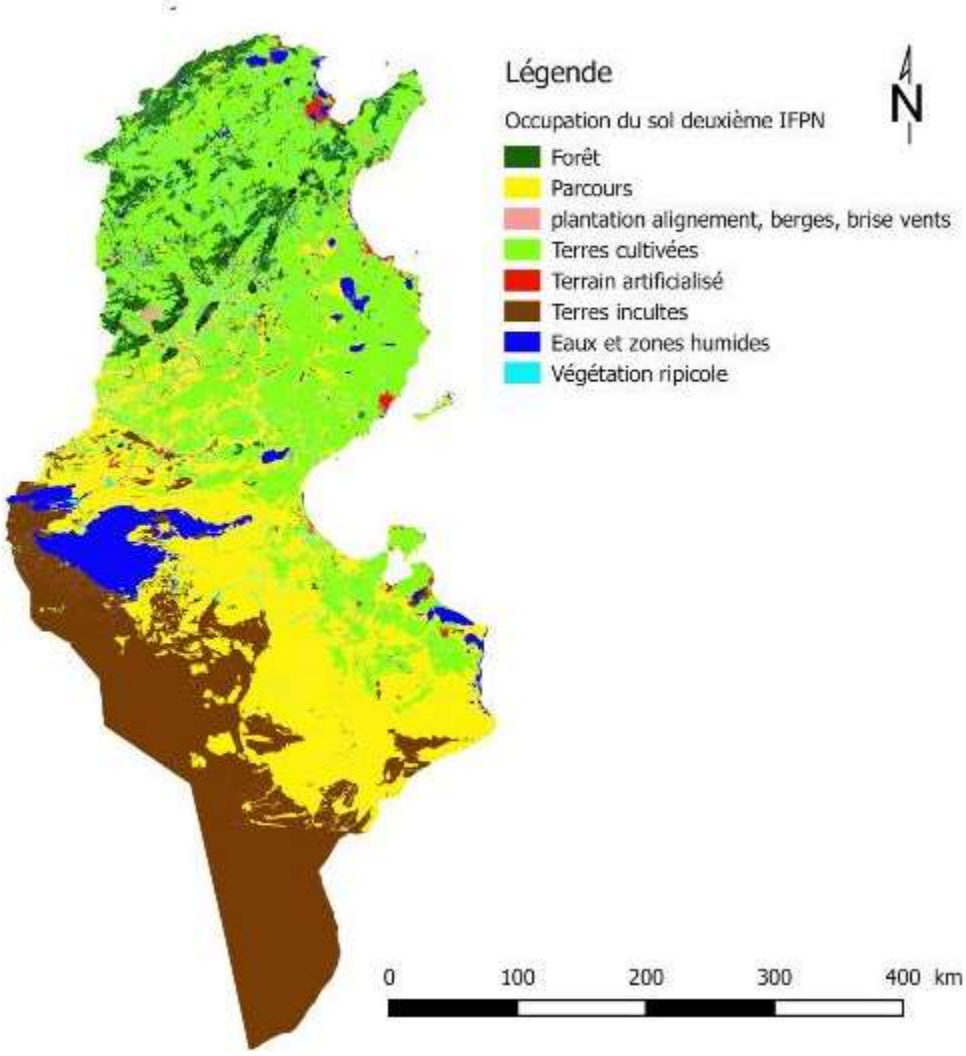
Table 2: Forest distribution according to land tenure

Land Tenure	Surface Area (ha)
Forests from the State Forest Domain	943,166
Forests from the State Private Domain (SpD)	59,602
Private Forests	37,318
Total	**1,040,086**[8]

Source: Hamdi & Lahmayer, 2016[9]

[8] *The total surface area of the forest environments presented here differs from those presented in Table 1. The study quoted here neither does neither specifiy the methodology used during the conducted land expertise nor the data sources used. This difference cannot therefore be explained, and these figures are to be considered with caution.*

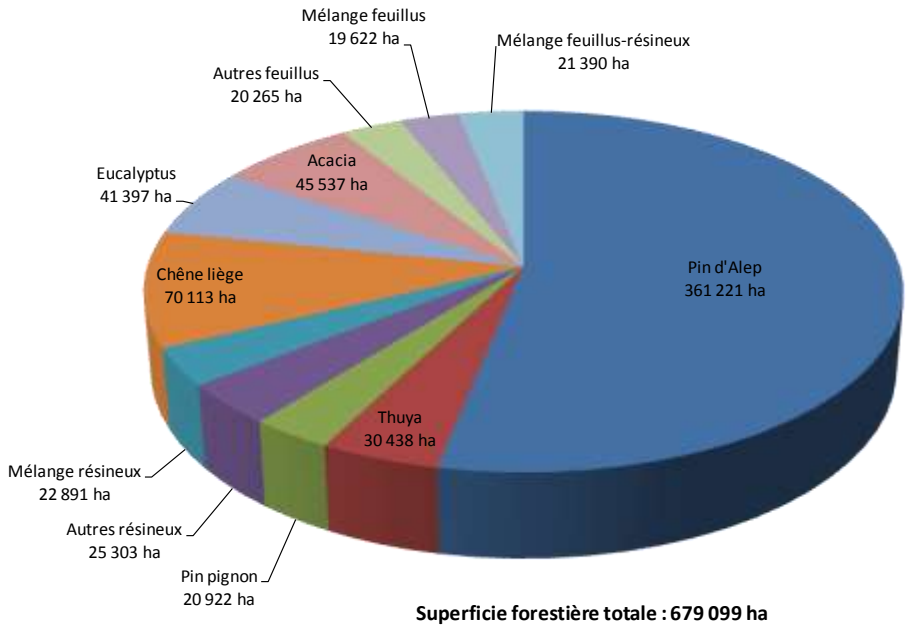
[9] *Hamdi M. & Lahmayer I., 2016. Le foncier forestier et pastoral et la stratégie REDD+ en Tunisie. UN-REDD Programme. Ministère de l'Agriculture, des Ressources Hydrauliques et de la Pêche - Direction Générale des Forêts. Tunis, février 2016. 160 p.*



Map 4: Land use in Tunisia from the second IFPN

12. According to the second IFPN (Figure 1), softwood stands represent more than 65% of the total national forest surface area[10], whereas hardwood stands constitute nearly 30% of it (the rest is a mixture of hard- and softwood relatively hardly represented). More than 50% of the forest surface areas are composed of Aleppo pine, whose stands are mainly concentrated in the governorates of Beja, Zaghouan, the Kef, Kasserine and Siliana, in the north and northwest of the country. Cork oak stands represent around 10% of the total national forest cover, and are mainly located in the governorates of the extreme north of the country (Jendouba, Beja and Bizerte). The Locust and Eucalyptus are the other most numerous hardwood species, representing each 5% of the total national forest cover.

[10] The total forest area in Figure 1 is different from that listed in Table 1. This difference in the results of the second IFPN and which cannot be explained illustrates the doubts about the reliability of the results referred to in § 7.



Source: DGF, 2010

Figure 1 : Distribution of the forest surface areas according to their specific composition

Pastoral resources

13. The FAO estimates it to 4.8 million hectares in 2011 (Ferchichi & Ayadi, 2014)[11], whereas the most recent study (DGF & the World Bank, 2015) evaluate it to 4.4 million hectares in 2012. In Table 3, 626,000 ha of agriculture-steppe mosaic must be added to the presented surface areas, mainly located in the south of the country, which illustrates the progression of practices from pastoralism to agropastoralism as well as the progressive extension of cultures to the detriment of steppe rangelands (see Appendix 6).

Table 3: Distribution of the pastoral surface area by rangeland type according to the second IFPN

Rangeland type	Surface (ha)
Steppe formations	3,878,100
Herbaceous formations	64,563
Esparto grassland	452,339
Pastoral plantations	105,773
Total	**4,500,775**

[11] *Ferchichi A. & Ayadi N., 214. Inventaire analytique sur les techniques adaptées pour la gestion et l'aménagement des parcours au niveau des zones désertiques de la région MENA. Observatoire du Sahara et du Sahel. Projet MENA-DELP. 119 pages. Analytical inventory on techniques for the management and planning of the rangelands for the desert areas in the MENA region. The Sahara and Sahel Observatory*

14. Steppe formations[12] are essentially located in arid and pre-saharan environments. Alfa grass lands[13] are mostly located in the center, and cover quite a large surface area in the Governorates of Kasserine, Sidi Bouzid and Gafsa.

Table 4: Pastoral surface area distribution according to the rangeland tenure statute

Land tenure statute & rangeland type	Surface (ha)	Proportion
State rangeland	212,000	5.0 %
Forest rangeland	240,000	5.7 %
collective rangeland	2,500,000	59.0 %
Private rangeland	1,200,000	28.3 %
Esparto/Alfa rangeland	85,000	2.0 %
Total	**4,237,000[14]**	**100.0 %**

Source: Hamdi & Lahmayer, 2016

Pastoral and forest resource conservation and protected areas

15. Tunisia implemented a relatively important protected areas network[15], including 17 national parks (covering more than 530 000 land ha) and 27 natural reserves (covering 44 475 ha). The total surface area of the protected areas is close to 585,000 ha, or 3.6% of the total surface area of Tunisia[16]. Tunisian protected areas are divided into 5 bioclimatic storeys (see Appendix 1) and in the different ecological regions of Tunisia. Their representativeness of the different natural regions is nonetheless considered still insufficient (DGEQV,) 2012[17]. The forest ecosystems are characteristic of 27 protected areas, while alfa areas are present in three protected areas.

16. Tunisian protected area territories are not subject to significant specific threats (such as illegal mining, oil or forestry exploitation, for example). However, they face management difficulties similar to those of the Tunisian forestry and pastoral sector. The effectiveness of the management of protected areas is generally insufficient, due to the inadequacy of management methods to the socio-economic context, the lack of governance, the lack of mobilized human, financial and material resources, and the weakness of the legal framework, the institutional context and planning and monitoring devices[18]. The fact that protected areas are managed by several different institutions (including the MEDD and FMB) particularly harms the effectiveness of their management. If the protection of protected areas remains relatively efficient, these constraints translate however a

[12] Steppe formations can be defined as plant formations open of xerophilic plants, herbaceous or woody, mostly in spaced out clumps.

[13] Alfa patches can be defined as steppe formations where alfa dominates (Stipa tenacissima)

[14] The total presented in Table 4 differs from Table 3 due to differences in methodologies, sources and reference years retained in the cited publications. However, beyond these differences, these are proportions showing the breakdown of the areas between the different types of courses, which are useful to note here.

[15] The term "protected area" is only used by Tunisian legislation for marines and protected coastal areas. It designates here the national parks and nature reserves

[16] It is worth noting that the area presented here is the official area published in the Official Journal of the Tunisian Republic, which may significantly differ from the areas determined by digital mapping (Department of Environment, 2012)

[17] Direction Générale de l'Environnement et de la Qualité de Vie, 2012. Étude d'évaluation de la représentativité écologique et de l'efficacité de gestion des aires protégées – Phase III. République Tunisienne. Ministère de l'Environnement. Mars 2012. 126 p.

[18] From the logical framework of the national strategy on protected areas in Tunisia

vertical approach to the management of protected areas, a low involvement of local populations, insufficient enforcement of the regulation and a low economic valorisation of the protected areas, which do not allow to optimize their contribution to the development of the forestry and pastoral sector.

Appendix 3 : Description and economic valuation of the goods and services provided by forests and rangelands

17. Recent studies (DGF & World Bank, 2015[19] ; DGF & FAO, 2012[20]) provide data on the economic value of the benefits provided by forests and rangelands. Although the methods used do not guarantee a high accuracy of the advanced figures, these studies provide orders of representative scale of the economic importance of goods and services provided by Tunisian forests and rangelands. Most of the data presented in this section comes from these studies[21].

The forest sector

Supply services

18. Tunisian logged wood feeds the market with **timber** (for construction works) , wood for **pallets** or **pulpwood** (to make particle boards or paper). These activities provide an income to the population employed as labour force, as well as an economic value added related to wood processing. Auction sales carried out by the *Régie d'Exploitation Forestière* (see Appendix 11) also lead to benefits for the Tunisian state.

19. Tunisian wood is also used as **fuel wood** or to make **charcoal** by the local populations. This activity can take on different aspects: collection of dead wood for domestic use, illicit felling or cutting for domestic use or marketing, felling (informal or obtained through auction sales) for the making and marketing of charcoal. These activities thus provide direct services (fuel wood) and/or income to the local populations. There is no available recent and accurate data on the consumption of biomass-energy in Tunisia, apart from a study carried out in 1997[22], on which the 2010 GHG inventory was based to model and estimate (among others) the consumption of wood fire and charcoal from the (lawful or unlawful) forest and rangeland harvesting or arboriculture (wood from thinning). A consolidated summary of the available data is presented in Appendix 4.

20. The forests are also used as **rangelands** and as such contribute to feeding livestock. In 2004, forest rangelands area has been estimated to 97,000 ha (Nefzaoui, 2004).

21. The Tunisian forest ecosystems also provide numerous **Non-Timber Forest Products** (NTFP), which most important ones are cork, rosemary, myrtle, lentisk (or mastic bush), cones from Stone pine and Aleppo pine, mushrooms, snails and honey. Cork, rosemary and myrtle are marketed by the *Régie d'Exploitation Forestière* through auction sales. Sales by private agreement also occasionally happen, for small amounts, and for the NTFP, such as mushrooms and lentisk. These NTFP thus provide income to the State and to the local populations. However, the great potential of NTFP of the Tunisian forests is still not valued enough today.

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[19] DGF & World Bank Group, 2015. Vers une gestion durable des écosystèmes forestiers et pastoraux en Tunisie - Analyse des bénéfices et des coûts de la dégradation des forêts et parcours. 86 pages.

[20] DGF & FAO, 2012. Évaluation économique des biens et services des forêts tunisiennes. Note de synthèse. Juillet 2012. 16 p.

[21]. When data provided by these two studies differed, the most recent figures were selected from the 2015 study).

[22] DGF, 1998. Bilan offre-demande de bois-énergie et d'énergies de substitution en Tunisie. Rapport intermédiaire. Première phase. Mars 1998. 57 p.

DGF, 1999. Analyse du bilan bois-énergie et identification d'un plan d'action en Tunisie. Phase III : définition d'un plan d'action. Version provisoire. Mars 1999. 115 p.

DGF, 1999. Analyse du bilan bois-énergie et identification d'un plan d'action en Tunisie. Rapport final de synthèse. Avril 1999. 44 p.

22. **Hunting activities** in the Tunisian forests can equally provide income through the sale of the game by its owner or the hunting rights.

Regulation services

23. Forest ecosystems play a fundamental role in the **protection of the soils** against erosion (notably water erosion in the mountainous areas) and in the **preservation of the water resource** (fight against dam siltation). Tunisian dams loose annually between 0.5 and 1% of their capacity because of aggradation, directly linked to the watershed erosion. In 1998, the rate of siltation of the Tunisian dams was 17.7%. It went up to 20% in 2002 and could reach more than 40% in 2030 (Ben Mammou & Louati, 2007)[23]. The indirect economic importance of this protection function can thus be huge, as locally as nationally.

24. Through their role of soil protection against erosion (see § 23) and the contribution of organic matter they provide, forests contribute to the **protection and maintenance of the fertility of farmland** located downstream from the forests. Indirect socioeconomic impacts of these benefits may be locally particularly important for people.

25. Forest ecosystems also contribute to the **fight against climate change**, through the **sequestered carbon** in the plants and in the soil. The quantity of carbon produced by the Tunisian forest stands in 2012 was estimated at one million tons CO_2-equivalent ($teCO_2$). Through the conservation of the forest cover, of the microclimate that it creates and its water resource protection role (see § 23), the Tunisian forest equally plays an essential part in **climate change adaptation,** in view of the great rise in temperature combined to a decrease of rainfall for 2020 and 2050 (MEE, 2013) that are predicted by climate change projection models[24].

Cultural services

26. The forests have an important **recreational role** that leads to income related to the marketing of forest access rights to and the indirect economy around its leisure function and to tourism (guides and guards salary, money spent by visitors reinvested in the local economy, etc.). Although today it is still largely underexploited, the recreational role of Tunisian forest ecosystems represents a significant potential for a sustainable economic development. This potential has however not yet been precisely assessed.

27. Tunisian forests provide services related to fauna and floristic **biodiversity conservation**. Tunisian flora has actually 2,200 species and a majority of them is under the forest cover and rangelands, 10% of which is rare and even very rare (MEDD, 2014)[25]. Tunisian wildlife has more than 500 species of Vertebrates, of which 400 are Bird species, close to 80 species of Mammals and more than 60 species of Reptiles. Insects are also represented by around 670 species. Tunisian forests thus play an essential role in the preservation of that biologic heritage.

28. The total economic value of the benefits provided by the Tunisian forests was estimated for the year 2012 at 208 million Tunisian Dinars (TD), which represents 0.3% of the GDP (Table 5). This corresponds to an economic value of around 176 TD/ha, even if high regional differences exist. The economic value of the benefits provided by the forests to Tunisia is mainly related to the provided

[23] *Ben Mammou A. & Louati M. H., 2007. Évolution temporelle de l'envasement des retenues des barrages de Tunisie. Revue des sciences et de l'eau, vol. 20, n°2, 2007, p201-210.*

[24] *Ministère de l'Équipement et de l'Environnement, 2013. Seconde Communication Nationale de la Tunisie à la Convention Cadre des Nations Unies sur les Changements Climatiques. République Tunisienne. Décembre 2013. 174 p.*

[25], *Ministry of Environment and Sustainable Development 2014. Cinquième rapport national sur la diversité biologique. Tunisian Republic CDB, GEF & PNUD. Juillet 2014. 89 p.*

forage (38% of the total value of the benefits), to the water and soils protection (12%) and to the NTFP (10%). The benefits gained by the country and the international community are as for them mainly related to carbon sequestration (24% of the total value of the benefits), as well as to the protection of the watersheds and the fight against erosion (11%).

Table 5: Estimates of the benefits and costs of the annual degradation of the Tunisian forests (in 2012)

Benefits and costs	Total value (million of TD)	Hectare value (TD/ha)
Benefits		
Supply services	128.9	109
Regulation services	74.9	63
Cultural services	4.4	4
Total benefits	*208.2*	*176*
Degradation cost		
Overgrazing	5.9	5.0
Fire	17.0	14.4
Clearing	3.5	3.0
Degradation due to wildlife	0.3	0.2
Total cost	*26.7*	*22.6*
Total economic value	**181.5**	**153.4**

Source: DGF & the World Bank, 2015

29. Auction sales carried out by the *Régie d'Exploitation Forestière* yields around 15 million TD annually, of which a little less than half comes from cork sales, and a little less than a third comes from wood sales (the other revenue come from other NTFP sales, such as rosemary, myrtle, mushrooms and lentisk).

30. Despite the relatively small surface of the forest cover and its limited contribution to the GDP, the economic value of the benefits provided by the forests is still important. The cost of the forests degradation, estimated to be of approximately 13% of the total value of the provided benefits (Table 5), is quite substantial, all the more so as it has probably been under-estimated, since the degradations linked to felling and illicit harvesting (for timber, pulpwood, firewood or charcoal), have not been taken into account in that estimate. Moreover the forest ecosystems may become more economically important in the future, in the climate change context, notably because the provided regulation services may also become more and more important, and that is linked to a predictable decrease in water resources and an increase of the GHG concentration in the atmosphere.

Pastoral sector

Traditionally, livestock farming and rangelands play an essential role in Tunisia. Despite the decrease in pastoral resources in the animal feed, more and more dependent to food supplement, livestock farming is still an economically and culturally embedded practice, particularly ovine and goat farming. The Tunisian rangelands (esparto grassland and steppe rangelands) provide, like forest environments, supply, regulation and cultural services. These are detailed in

31. Table 6.

Table 6 : Detailed description of the goods and services provided by the Tunisian rangeland

Type of service	Service	Description and assessment
Alfa grass		
Supply services	Supply of Kasserine pulp mill (SNCPA[26])	➲ Reduction of annually harvested quantity (14,500 t/year on average between 2008 and 2012, against 46,700 t/year between 1992 and 1998) ➲ Value : 272 TD/t (in 2012) ➲ Average productivity 163 kg/ha ➲ Economic value estimated at 44.3 TD/ha, i.e. a total value of 18.9 million TD
	Craft industry	➲ Used for manufacturing mats, baskets, sieves, etc. ➲ Products used for domestic needs and/or to be sold ➲ Annually used quantity estimated at 1.30 tons/year (CNEA, 1990)
	Fodder production	➲ Forage production between 50 and 120 UF/ha ➲ Substitute food to hay or straw ➲ Average production estimated at 58 UF/ha ➲ Economic value estimated at 23.2 TD/ha, i.e. a total value of 9.9 million TD
	Energy recovery	➲ Valorisation possible as bio-fuel or alfa briquettes ➲ Potential currently not valorised
Regulation services	Protection of the watersheds and water and soil conservation	➲ Important role for soil protection against erosion ➲ Positive impacts on downstream water reservoir and crops ➲ Economic value estimated at 40.4 TD/ha, i.e. a total value of 15.9 million TD
	Protection against siltation and desertification	➲ Protection role of soils against wind erosion and desert progression ➲ Economic value estimated at 80 TD/ha, i.e. a total value of 34.2 million TD
	Carbon sequestration	➲ Contribution to GES emissions reduction ➲ Quantity of sequestered de CO2 estimated at 0,29 tCO2eq/ha (Daly, 2014) ➲ Economic value estimated at 13.6 TD/ha, i.e. a total value of 5.8 million TD
Cultural services	Recreational	➲ In 2012, 30 000 visitors have visited natural parks in which rangelands prevail ➲ Total economic value of 33,000 TD, i.e. 0.1 TD/ha.
	Biodiversity conservation	➲ Economic value estimated (from annual costs invested in biodiversity conservation) at 0.3 TD/ha, i.e. a total value of 0.13 million TD
Other steppe rangelands		
Supply services	Fodder production	➲ Main direct use of steppe rangelands ➲ Productivity varying from 30 à 300 UF/ha, according to the bioclimate ➲ Pastoral plantation productivity varying from 500 to 800 UF/ha, according to the bioclimate and species used ➲ Total economic value estimated at 102.3 million TD, i.e. 25.6 TD/ha

[26] Société Nationale de Cellulose et de Papier d'Alfa *(National Society of Cellulose and Alfa Paper)*

Type of service	Service	Description and assessment
	Aromatic and medicinal plants	➲ Mainly white wormwood (Artemisia), thyme and rosemary ➲ Total economic value estimated at 58.3 million TD, i.e. 14.6 TD/ha
	Remeth	➲ *Arthrophytum scoparium* or *Hammada scoparia* ➲ Used to make snuff (Neffa) ➲ Total economic value estimated at 22.5 million TD, i.e. 5.5 TD/ha
	Honey	➲ Average economic value estimated at 1.5 TD/ha, i.e. a total value of 506,000 TD
	Hunting[27]	➲ Favourable environment for hares and partridge hunting ➲ Total economic value of game estimated at 0.13 TD/ha, i.e. a total value of 619,000 TD
Regulation services	Protection of the infrastructures	➲ Role of protection of installations and roads against wind erosion and desert progress ➲ Economic value estimated at 80 TD/ha, i.e. a total value of 319.7 million TD
	Protection of soils	➲ Important role of land protection against water erosion ➲ Important positive impacts on downstream water reservoirs and crops ➲ Economic value estimated at 19.4 TD/ha, i.e. a total value of 77.7 million TD
	Carbone sequestration	➲ Quantity of sequestered de CO2 estimated at 0.25 tCO2eq/ha ➲ Economic value estimated at 11.8 TD/ha, i.e. a total value of 47.1 million TD
Cultural services	Recreational	➲ Visit of national parks, ecological and cultural tourism ➲ Total economic value estimated at 4.2 million TD (en 2012), i.e. 1 TD/ha
	Biodiversity conservation	➲ Economic value estimated (from annual costs invested in biodiversity conservation) at 0.3 TD/ha, i.e. a total value of 1.2 million TD

32. Table 7 shows the economic evaluation of the goods and services provided by the Tunisian rangelands. The majority of the rangelands economic value is linked to the regulation services that are provided, and notably to their protection role against silting and desertification. Rangelands feeding value also represents a sizable proportion of their total value (15%). Taking into account the important areas covered by rangelands (and especially the steppe rangelands), their total economic value is particularly high. The important role linked to protection of land against silting and desertification (usually an irreversible phenomenon) enables to highlight the importance to work towards their sustainable management and their protection.

[27] *Valid for rangelands as a whole (steppe rangelands **and** alfa grass)*

Table 7: Economic evaluation of the goods and services provided annually by the rangelands (in 2012)

Benefits and costs	Total value (million TD)	Value/hectare (TD/ha)
Esparto grasslands		
Supply services	28.8	67.5
Regulation services	55.9	134.0
Cultural services	0.2	0.4
Total benefits	*84.9*	*198.7*
Degradation cost	*12.6*	*29.5*
Other steppe rangelands		
Supply services	190.1	47.3
Regulation services	444.5	111.2
Cultural services	5.4	1.3
Total benefits	*640.0*	*159.8*
Degradation cost	*60.7*	*15.1*
Total Benefits	**724.9**	**163.9**
Total degradation cost	**73.3**	**16.6**

Source: DGF & Banque Mondiale, 2015

33. The cost of rangelands degradation and clearing has been evaluated to 73 million TD a year, i.e. 10% of their total economic value (DGF & the World Bank, 2015).

Appendix 4: Summary of the available data on the Tunisian biomass energy sector

34. The latest national survey on the consumption of biomass-energy in Tunisia was carried out in 1997 by the SWEDFOREST-SCET Tunisia[28] consortium for the Directorate General of Forests. Since then, no national study or official information on the use of the biomass-energy in Tunisia has been published.

35. In the framework of the GHG inventory carried out for 2010 (MEDD, 2015), a model was established in Excel® format for the biomass-energy consumption of the residential and tertiary sectors from 1997 to 2010. That model relied upon:

- The results of the two national surveys on the biomass-energy carried out up to now (1984 and 1997);
- A stratification of the household consumption of biomass-energy (cooking, bread preparation, water heating, heating, etc.), by biomass type (fire wood, charcoal, green and animal wastes), and by location (rural and urban), as well as tertiary consumptions;
- The respective progressions of unit consumption by type of use, by household and location, between 1984 and 1997;
- The respective increase in urban and rural populations.

36. That model thus estimated the consumption of biomass-energy for the year 2010 and the 1997-2010 period. It has also given prospective estimates for the years 2020 and 2030. Thanks to these, the consumption data could be estimated for 2011 and 2013 in the framework of the improvement works on the energy balance for 2010-2013[29]. The same data was also used for the 2011 and 2012[30] GHG inventory. The table hereunder gives details of the estimated and used data in all the works mentioned above.

Biomass (Tons)	2010	2011	2012	2013
Fire wood	1,720,103	1,710,271	1,700,509	1,690,817
Charcoal	177,681	181,617	185,644	186,765
Green wastes	312,281	310,872	309,472	308,079
Animal wastes	108,478	107,817	107,161	106,509

37. It should be noted that the 1997 data have not made the difference between types of fuel wood according to their origin (logged in forests and/or rangelands, or from arboriculture). The estimates do not integrate these differences either, especially as the GHG or energy balance inventories do not really need to distinguish the fuel wood origins.

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[28] DGF, 1998. Bilan offre-demande de bois-énergie et d'énergies de substitution en Tunisie. Rapport intermédiaire. Première phase. Mars 1998. 57 p.

DGF, 1999. Analyse du bilan bois-énergie et identification d'un plan d'action en Tunisie. Phase III : définition d'un plan d'action. Version provisoire. Mars 1999. 115 p.

DGF, 1999. Analyse du bilan bois-énergie et identification d'un plan d'action en Tunisie. Rapport final de synthèse. Avril 1999. 44 p.

[29] Agence Nationale de Maîtrise de l'Énergie, 2015. Rapport technique 1 : Analyse de l'évolution du bilan énergétique de la Tunisie entre 2010 et 2013. ANME/GIZ/APEX Conseil. Décembre 2015. 97 p.

[30] MEDD, 2016. Inventaires des gaz à effet de serre en Tunisie pour les années 2011 2012. MEDD/PNUD/CITEPA-APEX Conseil. Mai 2016. Document non encore publié officiellement.

38. It should also be noted that the 1997 data (and thus the 2010 and 2013 estimates reflect real population demand (or estimated demand after modelling) for fuel wood, including that from wood collecting and legal and illegal logging. These data are thus logically a lot better than the ones given by the DGF, which include only the quantity of wood logged in forest by the forestry Administration, and officially sold.

39. The wood from arboriculture comes from pruning, and thus do not impinge on the arboriculture resource. On the other hand, wood taken from forests do impinge on the forest resource in particular illegal logging. Indeed, these latter do not follow sustainable management practices, contrary to the forestry Administration legal logging. Since there is no recent specific study, it is impossible to estimate the real impact of these illegal logging practices on the forests and rangelands, nor is it to estimate the potential increase of the legal supply.

40. Moreover, it should be pointed out that the quantity of wood used by the population for charcoal production was estimated on the basis of the same yield hypothesis of the type of carbonization practice used in 1997 (20%).

41. Based on all the modelling done, the consumption of biomass-energy would represent 12.7% to 14.7% of the primary energy consumption in Tunisia, and between 12% and 12.6% of the final energy consumption[31, 32]. Wood and charcoal would represent 84% of the final consumption of biomass-energy, being around 10% of the energy balance (final energy) in Tunisia. Besides, on the basis of these estimates, the fuel wood is still an important energy source for the residential sector, since it represents around 48% of the final household demand in energy.

42. Despite the efforts made while modelling, the fuel wood consumption estimate is still subject to high state of uncertainty. According to the GHG inventory for 2011 and 2012, this degree of uncertainty on the data would be around 30%[33].

[31] *ANME, 2015.*

[32] *Primary energy corresponds to the potential energy contained in natural resources before any transformation. Final energy correspond to the energy effectively consumed, taking into account loss related to production, transportation and transformation of the fuel.*

[33] *MEDD, 2016. Document not officially published*

Appendix 5: Synthetic presentation of socio-economic data characterizing forest populations

43. A study of forest populations of the 14 forest governorates of Tunisia[34] (DGF & FAO, 2012[35]) estimated the number of forest users at more than 730 000 (nearly 7% of all of the Tunisian population, and 21% of the rural populations), of which nearly 30,000 live in the forests. This corresponds to a national average of about 87 users by square kilometre of forest (non forested *maquis* and *garrigue* included).

44. As for the whole of Tunisia, forest populations are characterized by their youth (though only 34% of the forest population is less than 25 years old, compared with 46% at the national level), a high activity rate[36] (78% in the forest Governorates) and an important pluriactivity (CDF & FAO, 2012). However, forest populations evolve in a socio-economic context marked by significant poverty. In Tunisia, 70% of poor households live in rural areas and the unemployment rate[37] reaches 30% in the forest Governorates, whereas the national average is less than 20%. Over a third (34%) of the forest population lives below the poverty line, compared with 26% nationally[38]. The household income of forest population, significantly lower than the national average, depends very strongly on agricultural production and forest products, each representing about 40% of the total household income. In some Governorates (Siliana, for example), the share of forest derived revenue compared to the total household income may exceed 60%. Approximately 65% of the forest population considers as 'very important' their relationship with the forest.

45. Income derived from the forests is mostly related to the supply of fodder (58% of the total income from the forest) and logging operations (28%). Indeed, the forest sector represents annually more than 7 million days of work, or the equivalent of more than 35,000 fixed full time jobs (Helal & al., 2007)[39]. These revenues are supplemented by profits from the production of charcoal (5% of the total forest revenue) and honey (2%) and the harvest of pine or Aleppo Pine seeds (1%) or other NTFPS (over 5%).

46. The poverty of the forest areas leads to a significant rural exodus. Close to a quarter (24%) of the forest population plans to move, mostly due to a lack of financial resources and/or the desire to find a job.

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[34] Nabeul, Ben Arous, Ariana, Manouba, Bizerte, Béja, Jendouba, Zaghouan, Siliana, Le Kef, Kairouan, Kasserine, Sidi Bouzid et Gafsa

[35] DGF & FAO, 2012. Étude sur la caractérisation de la population forestière en Tunisie. Avri l 2012. 89 p Study on the characterization of the forest population in Tunisia. April 2012.

[36] Proportion of people declaring that they are or seek to be in paid employment

[37] Proportion of people unemployed and looking for a job within the active population

[38] These figures, from the the most recent FMB & FAO study (2012), are to be considered with caution. The 26% national average presented here strongly contrasts with the 15.5% average assessed for the year 2010 in a study supported by the National Institute of Statistics (INS, 2012). Beyond the values presented here, what is essential to point out are the regional disparities, and the difference between the rural and national average.

[39] Helal S., McConnel R. & Thirong P. S., 2007. Linking national forest programmes to poverty reduction strategies. The case of Tunisia Organisation des Nations Unies pour l'Alimentation et l'Agriculture. 8 août 2007. 37 p.

Appendix 6 : Detailed presentation of forest and rangeland deforestation and degradation factors

Direct drivers

47. Fires concern an average area of 3 000 ha since 2011 (Table 8). They can be accidental or voluntary. Mean annual values estimated for the 2000-2009 period vary from 270 to 400 ha/yr. It is however likely that the surface areas burned between 2001 and 2011 are underestimated: ongoing research work conducted by the DGF believe that the surface areas actually burned between 2001 and 2010 would rather be in the order of 13 000 ha, that is an annual surface area of 1 300 ha (DGF, 2016). The significant increase in the surface areas burned since 2011 can be explained by the outbreak of arson following the events of social protest in 2010-2011.

Table 8: Annual burned surface areas

Ground Use before Fire	Burned Surface Areas (ha) per annum[40]														
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forests	200	68	308	49	229	38	363	380	83	673	1 587	1 717	3 388	4 870	658
Maquis, *garrigues*	26	56	44	57	157	71	95	99	23	29	108	462	721	906	93
Herbaceous stratum	1	2	33	78	76	47	77	27	8	9	9	85	33	120	31
Residues	1	5	2	7	48	5	3	4	3	13	3	29	1	50	10
Total	**228**	**131**	**388**	**191**	**509**	**160**	**537**	**510**	**117**	**723**	**1 707**	**2 293**	**4 143**	**5 946**	**792**

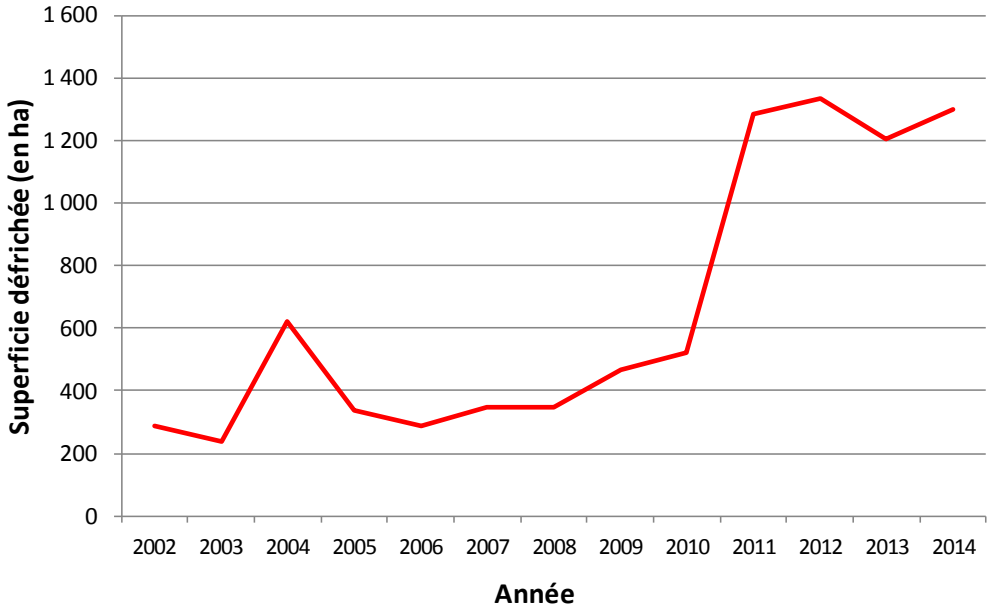
Source: DGF, 2016

48. Depending on the nature of the burnt vegetation, fire can be considered as a factor of deforestation (in the case of total and long-term loss of forest cover) or of forest degradation. Indeed, burnt Aleppo Pine, cedar and cork oak stands will tend to regenerate naturally after two to three years (provided that they are old enough to be composed of mature trees). The forest land use is not modified and the fire will then have caused a degradation only. However, species such as pine, Acacia or Eucalyptus stands do not regenerate in the absence of planting work. The fire results in this case in gross deforestation.

49. **Clearings**, undertaken to extend the area under cultivation (for agriculture or tree farming) or habitat, is a factor of gross deforestation, but relate only to limited areas (Figure 2), in the order of 1 000 to 1 400 ha since 2011 (from 200 to 600 ha between 2001 and 2010)[41].. As for the fires, this increase can be explained by the distrust towards the state authorities observed since the events of 2010-2011. Furthermore, clearings for residential purposes increased particularly in the coastal areas, where reforestation was conducted in the past by the services of the State to protect the sand dunes, due to the rise in financial value of these lands. However, there is today no data to precisely quantify this type of clearing.

[40] The data presented do not take into account the exceptional fires related to military manoeuvres in the governorates of El Kef and Kasserine, affecting an area of about 20,000 ha for the period 2013-2015 (DGF, 2016

[41]. It is to be noted that the surface areas actually cleared are probably slightly higher than the figures presented, taking into account the existence of infringements that are not recorded by the Forest Administration.



Source : DGF, 2016

Figure 2 : Evolution of cleared surface areas per annum since 2002

50. **Illicit wood removals** constitute a relatively important factor in the degradation of both public and private forests. They can be carried out by local peoples, for fuel wood or charcoal, or by people or companies from the private sector to produce and market sawnwood or roundwood (pallets, pulpwood). A study conducted in the governorate of Kef in 1990 showed already that the removal and consumption of firewood in rural areas exceeded the production capacity of the forests (DGACTA & FAO, 2006). Despite the importance of this phenomenon, there is to date no other data enabling to precisely quantify it.

51. **Overgrazing**, resulting in the consumption by herds of young plants, acorns and shoots of the year, is also an important factor of forest degradation. In addition to the weakening of the most sensitive individuals, this phenomenon is particularly problematic in the Tunisian Northwest cork oak forests (*suberaies*), as it causes a slowdown, and possibly a complete stop of the natural regeneration process. An important part of these stands is senescent, causing a decrease in density and productivity of stands and representing a threat to the maintenance of forest cover in the medium term. In 2007, nearly 30 000 ha of cork oak forest had a less than 50% canopy and required silvicultural regeneration operations (DGF, 2007) [42]. The rate of overgrazing of the various forest formations (including *garrigue* and *maquis*) was assessed at values between 50 and 70% (OTEDD, 2009) [43].

52. The **main direct factor of clearing and degradation of the rangelands is linked to the conversion of the land use**, particularly for the practice of the cereal growing and arboriculture Although these helped improve the self-sufficiency of the country for certain products (vegetables, fruits and grains, barley in particular) and farm developed on rangelands indirectly participates to livestock rearing through the provision of agricultural by-products for cattle feeding, this situation has strongly weakened the farming systems of small ruminants (sheep and goats). This clearing

[42] *DGF, 2007. Étude stratégique pour le développement durable de la suberaie tunisienne (UTF/TUN/032/TUN). Analyse et synthèse des résultats des diagnostics de la suberaie (problématiques, enjeux et défis). Document de synthèse. Ministère de l'Agriculture et des Ressources Hydrauliques. FAO. Juin 2007. 19 p.*

[43] *Observatoire Tunisien de l'Environnement et du Développement Durable, 2009. Indicateurs des forêts durables. Ministère de l'Environnement et du Développement Durable - Agence Nationale de Protection de l'Environnement. 35 p.*

phenomenon began in the 1960s in collective land status steppes with a relatively favourable climate (Central Tunisia), spread then to the arid regions such as the governorate of Médenine and Tataouine. The conversion of rangelands to olive groves and grain farming on these territories is explained by the planting of olive trees being considered as a productive use of land, allowing a private appropriation of land, which was often originally collective. According to Guillaume (2009), olive tree farming is indeed due to peasant logic having as objectives to assert ownership, to take into account weather conditions and the long term in the constitution of the tree capital (in contrast to criteria of productivity and profitability in the short term) and the sociocultural dimension of the olive tree, which constitutes an asset and a real intergenerational link.

53. **Overgrazing and overexploitation of the rangeland** are significant factors of degradation. They concern about 2 million hectare (DGF & World Bank, 2015). **Overgrazing** is explained by the increase (or stability) of the herd, despite the decrease of the rangeland surface area. For example, in south-eastern Tunisia where the bulk of the rangeland is to be found, the pressure by sheep varies from 0.25 to 0.7 UO/ha/yr, while the actual capacity of the rangelands varies from 0.15 to 0.2 UO/ha/yr (Santacruz & Ouled Belgacem, 2011). The coefficient of overgrazing is particularly high: 80-91% in 2012 for the whole of the country, while it was estimated at 40 per cent in 1990 (DGF & World Bank, 2015). Rangeland forage production covered 10 to 20% of the needs in 2012-2013, while in 1990 it was 60%. The degradation through overgrazing translates into (DGACTA et al. 2011) a decrease in the rate of vegetation cover by 30-50%, a reduction of perennial species in favour of annuals and a soil degradation, resulting from the reduction of vegetation cover which increases their sensitivity to erosion (some measures consider the loss of soil in the Southern steppes at between 3.4 and 10 t/ha/yr). The overexploitation of the rangeland consists of the illicit extraction of multi-year woody species, practiced widely, including by the agropastoral population's poorest fringes. For lack of available data, this phenomenon cannot be quantified exactly but all specialists agree that it is important and creates stronger than overgrazing impacts.

Indirect factor

Indirect factor	Impor-tance	State of affairs, findings	Implications, impacts
Low efficiency of Administration	High	➲ Organization in separate departments of the Directorates-General within the MARHP and of the Directorates within DGF ➲ Multiplicity of structures on rangeland management; insufficient consultation, coordination and communication between them ➲ Separation between the administrative and functional components at the level of the CRDA ➲ Low power of the divisions in the CRDA organizational chart ➲ Weakness of governance, activity follow-up and assessment tools ➲ Significant lack of human, financial and material resources ➲ Weakness of the human resources management policy ➲ Weakness of the budget allocated to training, support or maintenance ➲ Separate construction of the operating and investment budgets ➲ Predominantly unilateral management approaches (top-down)	➲ Lack of collaboration between the different structures and coordination of strategies and activities ➲ Absence of a genuine planning and follow-up system ➲ Operational difficulty within the CRDA ➲ Less than optimal and unsustainable management of forests and rangelands ➲ Lack of confidence of the population and private sector toward the administration
Weak adaptation of the regulation	High	➲ Last review of the Forest Code (edited for the first time in 1959) in 1988 ➲ Sales of wood, cork, myrtle and rosemary conducted only by auction (with exceptions), so not accessible for local people ➲ Concessions and temporary occupation licensing system not suitable for forestry and unfavourable to the involvement of the private sector ➲ Co-management systems in partnership with local populations and civil society not provided for by law ➲ Preponderance in the forest Code of the obligations of users, rights being limited to rights of use ➲ No clearly defined forest ownership rights ➲ Component relating to the functions of control and repression of the Forest Administration prevailing compared to socio-economic development functions ➲ Significant administrative burdens ➲ Failure and lack of effective incentive mechanisms for local people to invest in the forest and pastoral sector (investments Code)	➲ Insufficiently dissuasive fines for some infractions ➲ Strongly restricted access of the forest peoples to forest products marketing ➲ Low involvement of local people and the private sector in the management of the forests and rangelands ➲ Lack of confidence of the population and private administration toward the Administration

Indirect factor	Impor-tance	State of affairs, findings	Implications, impacts
Agricultural and pastoral policies no or little adapted	Medium	➲ Policies set on the management of water points and food distribution since the 1970s ➲ Trend to the privatization of collective land ➲ Failure to take into account environmental services offered by the rangeland ➲ Lack of real land and rural development policy	➲ Growth and settlement of the herds thereby increasing the pastoral pressure on the rangeland. ➲ Damaging land use changes for the forest and rangelands (clearings, expansion of irrigated crops on the rangeland, cultivation of degraded land on steep slopes, etc.)
Insufficient application of regulation	Medium	➲ Lack of means of the Administration for the implementation of a follow-up and a sufficiently effective control of forest management ➲ Concept of integrated and participatory management little applied in reality in the field (PV of integrated and participatory management produced in the absence of a real consultation process)	➲ Offences are not systematically punished ➲ Lack of monitoring of judicial proceedings related to the infringements on forest environments ➲ Inadequacy of the consultation process
Lack of confidence of the population and private administration	High	➲ General will of the people to avoid any interaction with the Administration ➲ Perception by the private owners of the forest and the forest regime as a constraint, rather than as an asset ➲ In connection with the findings related to the lack of adaptation of the regulation and the low efficiency of Administration ➲ Lack of effective dialogue and consultation mechanisms with local populations and civil society	➲ Few initiatives of the private sector in relation to forest management ➲ No forest concessions allocated ➲ Regular poor sales of forest products by tender ➲ Low economic valorisation of forests and rangelands ➲ Forest clearing, degradation and fires
Poverty of rural and forest populations	High	➲ Forest areas make up an important part of the income of the deprived populations living near forests ➲ Low income of local people ➲ Existence of disparities between rural and urban areas ➲ Lack of accessibility to new technologies that can represent opportunities for a better use and valuation of forest and pastoral products	➲ Increase of forest products gathering (and particularly wood) in a logic of subsistence in the short term at the expense of a long-term sustainable management ➲ Exodus of rural population to the city, often followed by a reinvestment of the generated income in the increase of livestock or cultivated areas, at the expense of the forests and the rangelands

Indirect factor	Impor-tance	State of affairs, findings	Implications, impacts
Low level of information of the population about the benefits provided by forests	High	➲ Lack of communication and outreach actions implemented by the Forestry Administration ➲ Lack of knowledge of the populations on the role of protection and the environmental benefits of the forest ➲ Weak knowledge of the potential income that can be drawn from forest ecosystems	➲ Forest clearing and voluntary fires on private and public lands ➲ Low involvement of rural people in forest management
Complexity of the land situation	High	➲ Disappearance of boundary markers, vagueness of property boundaries ➲ Absence or age of title deeds ➲ Absence of digitalization and registration of land boundaries ➲ Variety and variability of the beneficiaries of the collective rangelands	➲ Damage to the forests of the DFE ➲ Property boundaries disputes ➲ Complexity of managing the collective rangelands
Deconstruction of traditional societal systems	Medium	➲ Mutation of the production systems and pastoral society linked to the settling phenomenon ➲ Management of natural resources (including rangelands) according to the administrative entities rather than according to the limits of the traditional systems ➲ Loss of official legitimacy of traditional authorities	➲ Increase of pastoral pressure on the rangeland ➲ Lack of overall and collective management of the collective rangelands leading to overgrazing
Climate change	Low	➲ Increase in average and extreme temperatures ➲ Increased risk of prolonged and/or successive droughts ➲ Existence of several studies on the vulnerability of ecosystems (and especially of the cork oak forest, the rangelands and Alfa areas) to climate change ➲ Impacts cannot yet be assessed with precision and certainty	➲ Increase in the risk of fire and the vulnerability of forest stands to pests ➲ Risk of reduced productivity and biodiversity of the rangelands ➲ Potential increase in the mortality rate of the stands of drought-sensitive species ➲ Increase in the vulnerability of pastoral ecosystems
Lack of knowledge on forest and pastoral resources	Medium	➲ Lack of reliable and consistent quantitative data on the state of the forest and pastoral resources ➲ Discrepancies between the figures of the various reports and studies available ➲ Lack of reliable data on the potential for carbon sequestration in the forest and pastoral environment ➲ Lack of knowledge about soil carbon ➲ Lack of detailed typology of the rangelands ➲ Absence of a national research program related to the forest and pastoral sector	➲ Sketchy data on the state of the forests and rangelands ➲ Difficulty of establishing a precise carbon footprint of the forest and pastoral sector ➲ Lack of useful information to adapt the sustainable management techniques of forests and rangelands

Indirect factor	Impor-tance	State of affairs, findings	Implications, impacts
Management mode of forest ecosystems and pastoral little adapted to the socio-economic context	Medium	➲ Unilateral management by the Administration not sufficiently taking into account the needs, interests and concerns of rural populations and forest users ➲ Superficial and ephemeral character of the consultations with local people in the development of the management PVs ➲ In connection with the low capacity of the Forest Administration, especially its lack of human resources	➲ Low valuation of forest products (timber and NTFPS) ➲ Low economic income from the exploitation of forest products for local people ➲ Less than optimal and unsustainable management of forests and rangelands ➲ Lack of confidence of the population and the private sector toward the administration
Lack of a system for monitoring of the forest and pastoral communities and activities are related	High	➲ Existence of initiatives and activity monitoring mechanisms within different structures, but in an independent and not centralized fashion ➲ Lack of monitoring on rangeland productivity ➲ Limited efficiency and sustainability of existing information systems	➲ Lack of basic knowledge and data on forest and pastoral resources, their development and factors of deforestation or degradation of forests and rangelands ➲ Need to develop a national monitoring system (required for the REDD+ process especially)
Lack of development or management of the rangeland plan	High	➲ Lack of overall vision and programming of activities guaranteeing the sustainability of the management ➲ Undefined objectives and technical, financial and human resources to be implemented ➲ Insufficient exploitation of the partnership opportunities between the public and private sectors and civil society	➲ Less than optimal (and unsustainable) rangeland management
Low valuation of the existing potential of carbon sequestration	Medium	➲ Low productivity of forest stands, related to their lack of maintenance ➲ Lack of silvicultural work undertaken due to the lack of forest administration means ➲ Existence of little productive degraded private land	➲ Carbon sequestration by forests and rangeland below their potential ➲ Possibility to restore and enhance degraded private land

Appendix 7 : Reforested surface areas between 2001 and 2015

Table 9: Annually reforested surface areas between 2001 and 2015

Year	Reforested surface areas (in ha) by reforestation type			
	Reforestation	Pastoral Plantations	Windbreak in agricultural lands	TOTAL
2001	5,800	7,525	2,000	15,325
2002	7,488	10,641	2,000	20,129
2003	7,295	5,963	2,000	15,258
2004	9,844	7,967	2,000	19,811
2005	13,093	5,949	2,000	21,042
2006	11,118	6,898	2,000	20,016
2007	7,472	6,038	2,000	15,510
2008	9,249	6,855	2,000	18,104
2009	10,246	7,014	2,000	19,260
2010	2,843	1,493	2,000	6,336
2011	4,982	2,181	0	7,163
2012	6,382	2,181	0	8,563
2013	4,105	2,566	0	6,671
2014	4,127	2,876	0	7,003
2015	5,138	2,636	0	7,774
TOTAL	**109,182**	**78,783**	**20,000**	**207,965**

Source: DGF, 2016 (from annual report of the National Tree Day)

54. Significant differences can be noted between the figures presented here and those presented in other studies (SalvaTerra & GIZ, 2014[44] ; FAO, 2010; DGF & the World Bank, 2015). This shows the uncertainty as for the surface areas really reforested and their success. The reforested surfaces are likely to have been overestimated between 2000 and 2010.

[44] *Le Crom M., Maurice J., Bouyer O. et Tounsi K., 2014. Analyse coûts-bénéfices de la REDD+ en Tunisie. GIZ, DGF. SalvaTerra. Mai 2014. 64 p.*

Appendix 8: Additional data characterizing the changing trends of forest and pastoral resources

Trends of forest resources

55. According to the data given by the DGF (DGF, 2016), the reforestation operations carried out between 2000 and 2015 might cover around 110,000 ha (see Table 9) and largely compensate the forest areas lost through clearing and fires (see Table 8 and Figure 2).

56. The *garrigues* and *maquis* with tree cover could have lost nearly 150,000 ha, whereas *garrigues* and *maquis* without tree might have increased by 180,000 ha. Subject to the risk of erroneous interpretation of the results linked to the different methodologies or implementations of the national forest inventories, these variations could show the phenomenon of forest stand degradation. A more thorough analysis including the mapping comparison of the inventories would however be necessary to confirm or invalidate this interpretation.

57. It is indeed likely that illegal felling leads to the exhaustion (in density and species) of the forest stands, even if no precise data is available on that matter today, especially in terms of surface concerned and impact quantification of these practices. In the North-west of the country, large surface areas of cork forests are currently composed of senescent stands which might need forest regeneration. In 2005, 90% of the cork forest was covered with stands considered as old (DGF & FAO, 2007)[45].

58. The qualitative degradation of the Tunisian forests can also take the form of plantation stands that have not been through required silviculture works (especially thinning), because of a lack of available human and financial resources. This is particularly the case of immense planted areas (of Stone pine) in the 1990s, in the framework of the second Programme of Forest Development in the Béja governorate. That lack of thinning leads to an increase of these stands vulnerability (to drought, fire, parasite and disease) and a decrease in productivity.

Trends of pastoral resources

59. For a long time, agricultural development policies defined priorities focusing on intensive production, at the expense of pastoral resources. The actions of the State in this area have long been limited to the equipment of pastoral water points and the distribution of feed in times of drought. Since the 1990s, a reversal of the trend has been marked, with particular attention being paid to rangelands in development strategies. This translated by the plantation of fodder shrubs and cactus, to ensuring forage reserves for shortage periods, and in the improvement of the rangelands by leaving land out to rest.

60. A study carried out by the *Observatoire du Sahara et du Sahel* (Ferchichi & Ayadi, 2014)[46], giving data from the FAO (FAOSTAT, 2013)[47], indicated that permanent pasturelands in Tunisia have

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[45] *DGF et FAO, 2007. Programme de développement et de valorisation des forêts de chêne liège de Kroumirie-Mogods – Document de synthèse. MARHP, Étude stratégique pour le développement durable de la subéraie tunisienne. Juin 2007. 64 p.*

[46] *Ferchichi A. & Ayadi N., 2014. Analytical inventory techniques adapted for the management and planning of the rangelands at the level of the MENA region's desert areas. Projet MENA-DELP. Observatoire du Sahara et su Sahel. Août 2014. 119 p*

[47] *Jemaa T., Huguenin J., Najart T., Moulin C.-H., 2013. Impact de la diminution de la superficie des terres du parcours sur le changement des systèmes d'élevage des petits ruminants dans le Gouvernorat de Siliana en Tunisie Centrale. In proceeding FAO-CIHEAM Network on Sheep and Goats Sub-Network on Production Systems, 8th*

increased of more than 500,000 ha between 1991 and 2011, whereas another study (Jemaa et al., 2013)[48] mentions the loss of approximately one million hectares of rangelands between 2004 and 2010 over Tunisia, and the loss of 103,485 ha of natural rangelands between 1994 and 2005 in the Kairouan, Kasserine, Sidi Bouzid and Siliana governorates, which represents more than 16% of the global surface of these governorate rangelands. The comparison of the two national forest and pastoral inventories (DGF & the World Bank, 2015) shows a 6,000 / 6,500 ha a year decrease of the grazing areas in the South and Center-West regions over the 1990-2003 period. In contrast, an increase of the pastoral area has been observed in the North-West, North-East and Centre-East especially due to pastoral plantations made[49].

61. The surface area of the **esparto/alfa grasslands** fell from 635,000 ha to 452,000 ha between 1961 and 2003 (DGF, 2010), which corresponds to a 29% loss in 42 years. The degraded esparto grasslands surface area is estimated to being 125,000 ha (Daly, 2014) [5051]. A report from the Ministry of the Environment and Land-Use Planning (MEAT, 1998)[52] estimated that more than half of the esparto grasslands might be degraded. That degradation is notably related to clearing, overfarming and overgrazing (see Appendix 6). The most damaged landscapes are foothills with great slopes and sensitive to erosion further to the reduction or disappearance of the plant cover. That degradation also manifests itself by a loss of the biological diversity and a lesser productivity over the long-term (gone from 450 kg/ha in 1976 to 340 kg/ha in 2003)[23]. The DGF recorded 715 reports from 2010-2013 (of which 95% are in the Kasserine Governorate), which relate to degradations over a total surface area of 2,850 ha (Daly, 2014). Since the 2011 revolution, the CRDA technical services in Kasserine estimate that **4,000 to 5,000 ha of the esparto grassland are annually cleared**.

International Seminar Technology creation and transfer in small ruminants: roles of research, development services and farmer associations, Tangier, Morocco, 11 to 13 June 2013.

[48] Jemaa T., Huguenin J., Najart T., Moulin C.-H., 2013. Impact de la diminution de la superficie des terres du parcours sur le changement des systèmes d'élevage des petits ruminants dans le Gouvernorat de Siliana en Tunisie Centrale. In proceeding FAO-CIHEAM Network on Sheep and Goats Sub-Network on Production Systems, 8th International Seminar Technology creation and transfer in small ruminants: roles of research, development services and farmer associations, Tangier, Morocco, 11 to 13 June 2013.

[49] The difference in methodologyused between the two forest and pastoral inventories requires to consider these figures with caution, and not interpret them as general trends.

[50] This reference quotes a report by the MARHP (Ministry of Agriculture 2013) Report on the development of alfa value chain. November 2013) which could not be consulted. The figures therefore could not be verified and crossed with the original report, and must be treated with caution.

51 Ministère de l'Environnement et de l'Aménagement du Territoire (MEAT). 1998. Programme d'action national de lutte contre la désertification, Tunisie

52 Daly (2014), citant une étude prospective des nappes alfatières réalisée par la Ministère de l'Agriculture (DGF, 2005).

Appendix 9: Sequestration and greenhouse gas emissions in the forets and rangelands

62. The emissions and removal of greenhouse gas in forest and pastoral lands have been studied several times in Tunisia:

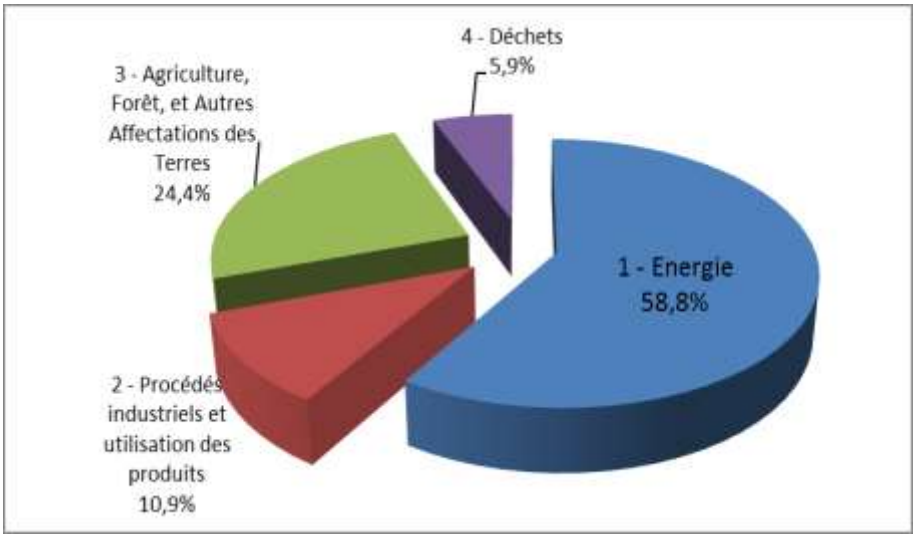
- The first studies were carried out in 1999-2000, during the stages of preparation of the Initial Communication to the UNFCCC (MEAT, 2001)[53], and covered the GHG inventory of the AFOLU sector (Agriculture, Forests and Other uses of the Lands) for 1994, just as well as the identification of the options of mitigation of the emissions and the absorption of the GHG.
- The 2000 GHG inventory, which also included the AFOL sector, was carried out in the framework of the 2nd Tunisian National Communication[54].
- More recently, the 2010[55] GHG inventory, carried out in the framework of the first Tunisian biennial report to the UNCCC, also included the AFOL sector.
- Finally, a study on GHG emission mitigation was carried out in 2014 and led to NAMA proposals (Nationally Appropriate Mitigation Actions; mitigation measures adapted to the national context) for the forests sector.

63. The last two studies are the most recent references and those that have maximized knowledge in term of GHG emission/absorption of the AFOL sector. It is thus possible to draw lessons from them in order to improve the forests and rangelands contributions to the carbon footprint in Tunisia. In the framework of the preparation of the 2nd biennial report and the 3rd Tunisian national Communication, a GHG inventory is being carried out for 2011 and 2012. The results have not been published yet, but the first available information match with those of the second GHG inventory (2010).

[53] *Ministère de l'Environnement et de l'Aménagement du Territoire, 2001. Communication initiale de la Tunisie à la Convention Cadre des Nations Unies sur le Changement Climatique. République Tunisienne. Octobre 2001. 222 p.*

[54] *Ministère de l'Équipement et de l'Environnement, 2013. Seconde Communication Nationale de la Tunisie à la Convention Cadre des Nations Unies sur les Changements Climatiques. République Tunisienne. Décembre 2013. 174 p*

[55] *Ministère de l'Environnement et du Développement Durable, 2015. Inventaire des gaz à effet de serre en Tunisie pour l'année 2010. Volume 1 : Rapport principal de présentation des résultats ». République Tunisienne. Juillet 2015. 79 p.*



Source: GHG Inventory in Tunisia for the year 2010 (MEDD, 2015)

Figure 3: Distribution by source of gross GHG emissions in Tunisia in 2010

GHG emissions related to agriculture, forests and other land uses (AFOLU)

64. Results presented here are from the 2010 GHG inventory carried out in 2013-2014 in the framework of the first Tunisian biennial report. On methodology according to the 2006 IPCC[56] guidelines for national GHG inventories, the sources of emission/removal taken into account by the GHG inventory for the AFOLU sector are distributed into 4 families:

- Cattle breeding (CRF 3.A: GHG emissions from enteric fermentation and manure from livestock management);
- Land (CRF 3.B: emissions/removals including forests, rangelands, agricultural lands, wetlands, and other uses of the land);
- Other sources of emissions excluding CO_2 from land (CRF 3.C: burning of biomass, use of urea, N_2O emissions, etc.);
- Other sources of emissions (CRF 3.D: use of wood in all its forms) .

65. If emissions from livestock are clearly compartmentalized, other sources are much more complex to characterize, because they overlap and are also sources of removals. For example, the use of fertilizers is in the category CRF 3.C, but organic fertilizers are taken into account in the category CRF 3.A. The largest category is linked to the use of land (CRF 3.B), since it includes all categories of use of land and land use change, and all carbon fluxes associated with it (soil, living biomass, litter). The inventory of GHGS emissions/removals arising from the use and changes in use of soils (CRF 3.B) considers carbon stock variations taking into account changes in land use over the past 20 years preceding the year of the GHG inventory, in accordance with the 2006 IPCC guidelines (which also define the land use list (including 6 classes: forests, crops, rangelands, wetlands, human settlements, and other).

66. The GHG inventory of emissions/removal that come from the **biomass growth and removal** (CRF 3.B, 3.C et 3.D) takes into account the fact that biomass growth leads to carbon absorption (and thus to stock) in the biosphere, which reduces all the more so the carbon in the atmosphere, and

[56] *Intergovernmental Panel on Climate Change (IPCC)*

that biomass removal on the other hand contributes to carbon emissions in the biosphere to the atmosphere. The main emissions/removals taken into account are those related to:

- Existing forest, pastoral and agricultural ecosystems (mainly arboriculture) at the inventory reference year(CRF.3.B);
- Forest and pastoral reforestation (CRF.3.B);
- Burning of biomass (CRF 3.C: forest or harvest fires, burning of crop residues);
- Wood gathering (mainly wood energy) from all sorts of lands (forests, rangelands, arboriculture, etc. (CRF.3.D).

Table 10: Inventory report on the AFOL sector's GHG emissions for 2010 in Tunisia

GHG emission/absorption source	Emissions				Absorptions	Net emissions ($MteCO_2$)
	CO_2 (Mt)	CH_4 (Mt)	N_2O (Mt)	Total ($MteCO_2$)	CO_2 (Mt)	
3.A – Livestock farming		**108.5**	**0.8**	**2,945.9**		**2,945.9**
3.B – Lands	**2,944.0**			**2,944.0**	**-13,610.9**	**-10,666.9**
3.B.1 – Forests					-6,314.9*	**-3,284.5***
3.B.3 – Rangelands	2,850.4					
3.B.2 – Farmlands	91.9			91.9	-7,320.3	**-7,228.4**
3.B.4 – Wetlands	1.7			1.7	-155.7	**-154.0**
3.C – Other sources and emissions outside CO_2 of the lands	**34.4**	**0.5**	**5.5**	**1,682.7**		**1,682.7**
3.C.1 – Emissions related to biomass burning	27.6	0.5	0.0	43.3		**43.3**
3.C.1.a – Forests	*26.0*	*0.1*	*0.0*	*29.2*		***29.2***
3.C.1.b – Rangelands	*0.6*	*0.0*	*0.0*	*3.62*		***3.6***
3.C.1.c – Formlands	*0.9*	*0.4*	*0.0*	*10.5*		***10.5***
3.C.3 – Urea use in agriculture	6.8			6.8		**6.8**
3.C.4 – Direct emissions of N_2O of managed lands			4.1	1,221.2		**1,221.2**
3.C.1 – Indirect emissions of N_2O of managed lands			1.4	409.2		**409.2**
3.D – Other (wood products)	**3,646.9**			**3,646.9**		**3,646.9**
Total emissions/absorptions	6,625.3	109.0	6.3	**11,217.4**	**-13,610.9**	**- 2,391.4**

** GHG absorptions by forests and rangelands could only be distinguished through reforestation.*

67. As mentioned above, the AFOLU sector includes agriculture through several sources of emissions/removals. Agriculture-related emissions are strongly dominated by emissions of CH4 and N_2O from livestock (2.9 $MteCO_2$) and N_2O emissions from the use of chemical and organic fertilizers and manure of domestic animals on rangelands (1.6 $MteCO_2$). Agriculture represents 42% of the emissions in the AFOLU sector. This figure would however be much higher if it included the use of the biomass-energy from the fruit tree culture (mainly olive tree wood)[57].

68. The AFOLU sector also presents the specificity to constitute a source of carbon removal, via existing forests and reforestation (forest and rangelands), as well as arboriculture (olive groves and other fruit trees). In total, the AFOLU sector removed 13.6 Mtco2e in 2010, thereby offsetting the total

[57] *Wood energy consumption estimates do not distinguish the origin of the consumed wood (wood from forests or rangelands,) or wood from the tree farming, but according to the latest estimates, two-thirds would come from arboriculture.*

emissions of the sector, presenting even a net removal balance of 2.4 $MteCO_2$ (see Table 10). At the national level, the AFOLU sector will therefore have "offset" 30% of Tunisian GHG emissions in 2010. The AFOLU sector therefore helped accentuate the image of Tunisia as a (net) low GHG emission country.

69. Agriculture is also an important source of carbon removal (7.3 $MteCO_2$ in 2010, representing 54% of the total carbon removals from Tunisia). This strong removal capacity comes mostly from olive groves (6.4 $MteCO_2$, or 88% of carbon removals of the agricultural sector, to 1.7 million hectares in 2010), and, to a lesser extent, from fruit tree cultivation (0.9 $MteCO_2$, about 420,000 ha in 2010). Arboriculture could therefore, if practiced in complementarity and consistency with the conservation and sustainable management of forests and rangelands, represent an interesting opportunity for improvement of the carbon footprint of the AFOLU sector in Tunisia.

70. GHG emissions and absorption report only related to forests and rangelands (outside agriculture and arboriculture) shows a net removal of around 2 $MteCO_2$, thanks to the removal of 6.1 $MteCO_2$ (Table 11). The importance of CO_2 emissions related to the rangelands (2.8 $MteCO_2$) reflects the intensity of human activities there (livestock, crops, etc.).

Table 11: GHG inventory report on forests and rangelands in 2010

Sources of GHG emission/absorption	Emissions				Absorptions	Net emissions ($MteCO_2$)
	CO_2 (Mt)	CH_4 (Mt)	N_2O (Mt)	Total ($MteCO_2$)	CO_2 (Mt)	
3.B – Lands	**2,850.4**	**-**	**-**	**2,850.4**	-6,134.9	**-3,284.5**
3.B.1 – Forests	-	-	-	-	-6,134.9*	**-3,284.5***
3.B.3 – Rangelands	2,850.4	-	-	2,850.4		
3.C – Other sources and emissions outside CO_2 of the lands	**34.4**	**0.1**	**0.0**	**32.8**	**-**	**32.8**
3.C.1 – Emissions related to biomass burning	26.6	0.1	0.0	32.8	-	**32.8**
3.C.1.a – Forests	*26.0*	*0.1*	*0.0*	*29.2*	-	***29.2***
3.C.1.b – Rangelands	*0.6*	*0.0*	*0.0*	*3.62*	-	***3.6***
3.D – Other (wood products)	**1,215.6**	**-**	**-**	**1,215.6**	**-**	**1,215.6**
Total emissions/absorptions	**4,092.6**	**0.1**	**0.0**	**4,098.9**	**-6,134.9,,**	**-2,036.0**

71. The approach to GHG inventory calculation is largely based on the 2006 IPCC guideline recommendations, while using Tunisia specific data (forest and pastoral surface areas from the national forest inventory, and forest and pastureland reforestation surface area from the DGF). The GHG inventory was thus carried out on the basis of the best methodological knowledge worldwide and of the best data available in Tunisia. According to the uncertainties evaluations carried out on the GHG inventory in 2010, the AFOL sector estimates present a global uncertainty of about 26%. In the current studies being carried out, which final results are still unavailable, these uncertainties might be more important. This percentage is still however totally conform to standards, bearing in mind the level of knowledge worldwide, the variations of carbon quantity in the soils and the quality of the data on activities available in Tunisia. These uncertainties in no way lessen the pertinence of the reforestation and improvement of forests and rangelands management actions. These were carried out in order to reinforce carbon absorption by the forest and pastoral ecosystems, all the more so that such actions have very positive implications in the preservation of soils, protection of water resources, and more generally on ecology. (see Section 4 of the IP/FIP).

Appendix 10: Analysis of the forest and pastoral governance

Administration of the forest and pastoral sector

72. The forest and pastoral sector is administered by the Ministry of Agriculture, Water Resources and Fisheries (MARHP), which governs the five sectors of activity that are (i) agriculture, (ii) fisheries and aquaculture, (iii) livestock, (iv) hydraulic resources and (iv) natural resources (including forests, rangelands and soils). The Directorate General of Forests (DGF) is one of the 10 technical branches of the MARHP. The DGF mission is 'the implementation of the provisions of the forest Code and its implementing rules' (article 7 of the Forestry Code) which groups three major roles: the implementation of the forestry regime, the management of hunting and game conservation and the protection of nature and wildlife. It relies for this on:

- 4 technical directorates, located at central level. They conduct studies, take part in the development of the sector strategy, in activity planning, the management of forestry projects and supervision and follow-up activities;
- 26 forest districts (ArF)[58], located at the governorate level and hierarchically regional stations in agricultural development (CRDA). They conduct management and control activities in the field ;
- Direction of forest exploitation (REF), responsible for the logging and sale of forest products;
- Common services of the MARHP (see Appendix 11).

73. Apart from the DGF, the Forestry And Pastoral Administration is reinforced by stakeholder support structures in the areas of research and training, such as the *Institut silvo-Pastoral of Tabarka* (ISP), the National Institute for Research in Rural Engineering, Water and forEsts (INRGREF) and the *Centre de Formation Professionnelle agricultural* (CFPA). In addition, many other structures and institutions are, directly or indirectly, affected by the forest and pastoral sectors. Their roles and responsibilities are presented in more detail in Appendix 11. Figure 4 shows a mapping of the institutions concerned with forestry and pastoral.

74. The cohabitation of the various Directorates responsible for the management of natural resources (water, soil, forests, rangelands) within the Ministry of Agriculture is a definite asset for the management of Tunisian forests and the rangelands. This illustrates that the interdependence of the various sectors concerned and the necessary complementarity of policies and strategies for natural resources management are taken into account. The magnitude of the MARHP prerogatives also demonstrates that the importance of these sectors is recognized by the Tunisian Government

[58]. With 2 forest districts each for the Jendouba and Kasserine CRDA, there are in total 26 districts for 24 CRDA. The second Kasserine forest district is vested to the management of alfa covers.

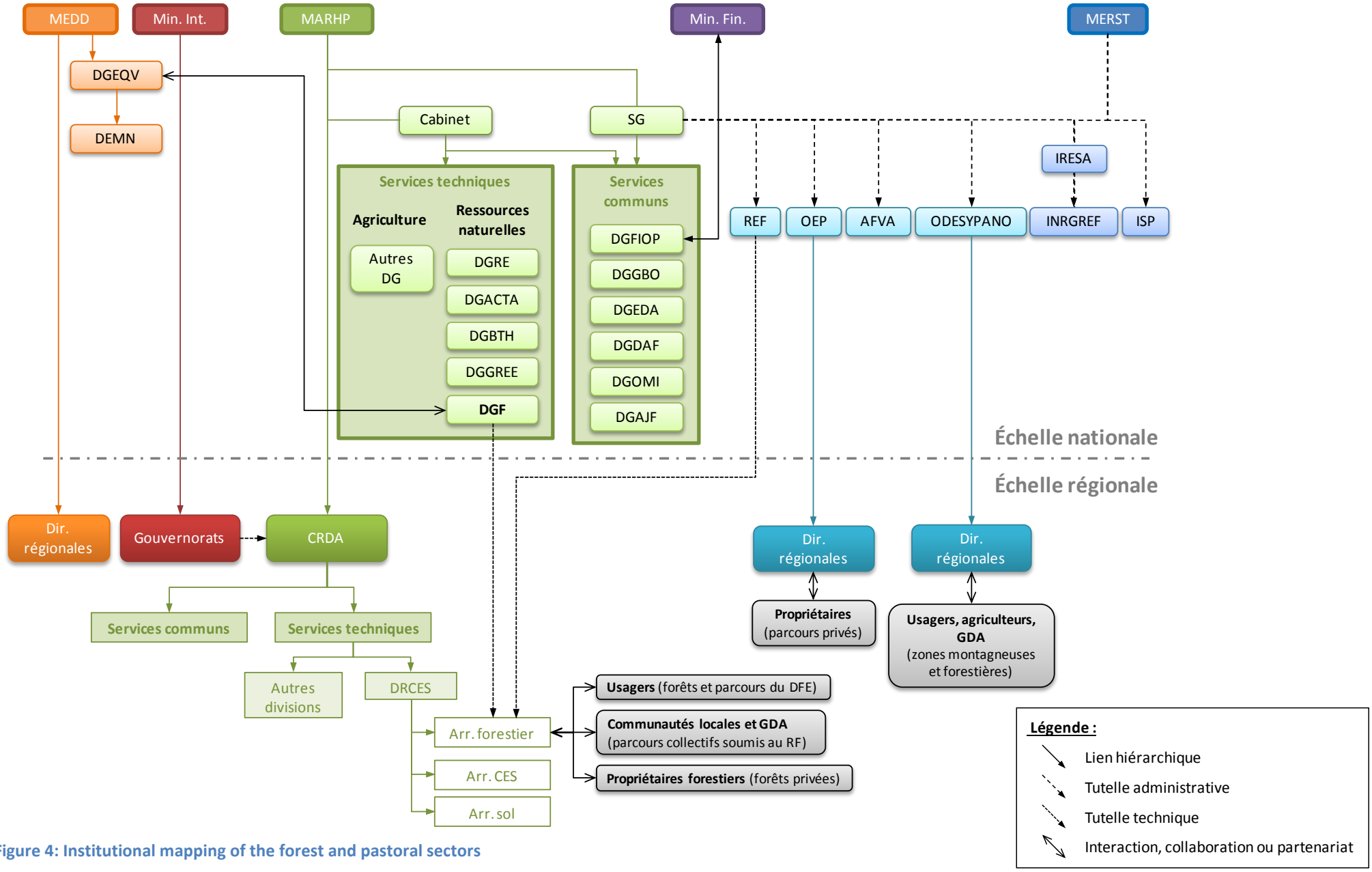


Figure 4: Institutional mapping of the forest and pastoral sectors

75. The analysis of the administrative organization of the institutions involved in the management of natural resources, including forests and rangelands, shows however the complexity of the current institutional framework. The actors external to the MARHP involved in the management of resources are particularly numerous, and there is no functional relationship defined between them, nor any coordination instance or operational structure. There is no technical structure either dedicated to the coordination between the various MARHP entities concerned with natural resources beside the Minister's Office, whose organization does not respond to these needs in an optimal way. This causes a certain compartmentalisation between the various General Directorates and structures under the MARHP. In the absence of significant changes and the lack of flexibility in the organization of the MARHP, this complexity intensified during the past 15 years and prevented the Administration to adjust its organization according to developments in the political, socio-economic and sectoral issues.

76. A comprehensive analysis of the institutional and legal context of the forest and pastoral sectors was conducted in a study[59] within the framework of the preparation of the Integrated Lanbscapes Management in Tunisia's Lagging Regions Project (see section 6 of the IP/FIP). The main obstacles and constraints observed in this analysis are presented in Table 12.

Table 12: Obstacles and constraints of the institutional context of the forest and pastoral sectors

Structure	Results of the Analysis
MARHP	➲ Structure based on a fragmented organization into various technical departments both at central and regional level ➲ Lack of a structure in charge of developing the agricultural development policy and sectoral strategies which would take into account the spatial and technical complementarity of the different structures ➲ Weakness of cross cutting governance and monitoring and evaluation tools of the activities of the various departments (absence of effective project assessment mechanisms, weakness of the resources allocated to the General Directorate of Organisation, Informatics, Document Management and Documentation and of the budgeting process) ➲ Weakness of the MARHP common services, which do not allow to perform their function at the scale of such an important Ministry, with such wide and varied attributions ➲ Lack of ownership of the process of budget management by objective, explained by weak capacity and organizational problems ➲ Lack of human resources management policy ➲ Inefficient use of the management tools such as regional management plans for the conservation of water and soil (mainly due to the weakness of the central structures in operational monitoring) and the integrated and participatory forest planning PV (lack of financial and human resources)
DGF	➲ Actions based primarily on short-term programming and on the monitoring of annual achievements (despite the existence of a 10 year strategy); almost non-existent long-term programming (apart from cooperation projects) ➲ Lack of ongoing evaluation mechanisms ➲ Current organization significantly different from the official chart (defined by Decree n° 2001-420 of 13 February 2001), explained by the creation of reduced support structures, put in place in order to compensate for the weakness of the main support structures of the Department (common services) ➲ Insufficient operational development of the Directorate of Social And Economic Development (established in 2001 in order to strengthen actions in connection with forest populations), due to the lack of means and regulatory barriers ➲ Duties and tasks of the Delimitation Service different from those defined by the Decree of 2001

[59] *DGF & Banque Mondiale, 2016. Diagnostic institutionnel et juridique de l'administration des forêts. Réformes institutionnelles et juridiques du secteur forestier. Mars 2016. 69 p.*

Structure	Results of the Analysis
	➲ Compartmentalisation and imbalance in terms of workload and human and financial resources between the different structures explained by the organization chart and the lack of mechanisms for an effective collaboration ➲ Rangeland management occupying a restricted place within the Forest Administration
REF	➲ Missions relatively limited insofar as it focuses on the harvest and the sale of available resources without intervention for the enhancement or promotion of products ➲ Logging operations management not optimal due to the lack of functional and administrative links to the ArF, despite their close cooperation ➲ Inefficient workers recruitment policy, that does not allow to achieve the objectives defined in the annual operating plans ➲ Monitoring of logging operations difficult and incomplete, due to the lack of capacity at the level of the ArF, particularly in terms of human resources and information systems ➲ Lack of evolution of forest products sale and adjudication procedures, leading to the price-cuttings and/or the undervaluing of certain forest products (related to the existence of a limited number of successful tenders and the large size of the lots offered for sale which does not favour small purchasers)
CRDA et ArF	➲ Potential conflicts for the implementation of forestry activities on the ground related to the separation of the administrative and functional aspects and the absence of appropriate mechanisms for the coordination and planning (the ArF depends on the CRDA for administrative and financial questions and on the DGF on the functional and technical levels. The potential divergence between political priorities and technical priorities can be problematic (links between the CRDA and governorates) ➲ Weakness of the CRDA divisions affecting the planning process and the consistency between the actions of various departments ➲ Weakness of the human resources of the ArF resulting in a low efficiency of the hierarchical organisation (the workload of the Chief of District does not allow him, for example, to play its role as supervisor) ➲ Lack of functional organization at yard level, the yard heads being responsible for the supervision and control of all of the activities on their perimeter ➲ Fairly flat organisation of districts, in order to compensate for the lack of staff and logistical means ➲ Lack of skills for the management of collective rangelands, especially in the Centre and South of the country

77. The many actors involved on the rangeland shows the complexity and the lack of coordination of the Administration. The DGF intervenes on State Forest Domain rangelands (through a branch of the Silvo-Pastoral Development Directorate), while the OEP works on the private rangelands. The ODESYPANO also works on the mountainous areas of rangelands in the North East, while the DGACTA implements actions on rangelands to protect Tunisian water and soils watersheds, without any coordination or consistency of the various interventions.

78. The recent adoption of the Budgetary Management By Objective (BMO), which aims to optimize the management of the State's finances and to improve the efficiency of public action, is a positive sign underlining the desire to encourage a better functioning of the Administration. The definition within the MARHP of 6 programs (of which one consolidates the components 'Forests' and 'Conservation of waters and soils') is an asset for the management of natural resources. The lack of consideration of the capacity of the public structures in terms of planning and the allocation of each sub-programme of the BMO to a Directorate cause however organizational problems which affect an effective BMO implementation and the adaptation of the budget establishment methods that it is supposed to produce.

Deconcentration and decentralisation

79. The Constitution of the Republic of Tunisia of 27 January 2014 advocates a principle of **territorial decentralisation** (articles 14 and 131). Decentralization in Tunisia translates today into the existence of Regional Councils, having the same boundaries as Governorates, and communes, which are

discontinuous territorial entities that do not cover the whole of the territory. A draft law under preparation should soon achieve the decentralization process by the creation of local communities including districts, divided into regions, themselves divided into municipalities, which will enjoy a legal, financial and administrative autonomy. This upcoming decentralization should foster regional economic development and reduce the disparities between the urban or coastal and rural territories (including forest and pastoral). It should also encourage the deployment of decentralized natural resource management systems, through the development of local development plans at municipalities scale.

80. The management of natural resources involves a deconcentration of State services. The Forestry Administration is one of the most deconcentrated administrative services of Tunisia, thanks to the existence of the CRDA and the forest districts. However, as mentioned in Table 12, the separation between the administrative and technical aspects at the level of the CRDA and the ArF produces a certain dysfunction that affects efficiency and performance of the sector. Forestry and pastoral activities programming is carried out and coordinated by different technical directions of the DGF, while taking into account the proposals of the ArF. These proposals, developed on the basis of the financial resources allocated to the ArF by DREA in the national forest programme and existing capacities, are therefore not necessarily in line with the objectives of the DGF programme. This often explains discrepancies between forecasts and actual figures relating to the logging activities, forestry operations and the management of forests.

Participatory consultation mechanisms with in the forest and pastoral sector players

81. The participation of local partners and actors (and particularly within the forest peoples) is also sought quasi-systematically during the development of the integrated and participatory forestry planning PV. These consultations, imposed by the terms of reference of the studies consist in (i) information, awareness raising and animation of the forest users within the framework of a socio-economic diagnosis, (ii) the development of participatory resource inventories, and (iii) the organization of workshops on the orientations and the contents of proposed management PV. However, the preparation of the management PV being entrusted to service providers (consulting bureaux) without all the skills required, and due to the lack of supervision and control by the Forest Administration, the quality of the consultations carried out is often insufficient, especially in the participatory aspect. The management PVs only initiate a superficial and ephemeral consultation process. Indeed, to date, none of the management PVs developed was implemented in reality, for lack of means.

BOX 1: INVOLVEMENT OF CIVIL SOCIETY IN THE MANAGEMENT OF NATURAL RESOURCES

Over the past two decades, Tunisia has known many experiences and initiatives aiming at involving civil society organizations, such as environmental NGOs and peasant and socio-professional groups, in the management of natural resources.

Implication of forest peoples in the management of forests:

The revision of the Forest Code, in 1988, introduced the possibility of organization of Common Interest Forest Associations (AFIC; see Appendix 12). The 1990-2000 national reforestation and soil protection strategy and the Forest Development Programmes (PDF), and based on the experience of the ODESYPANO in terms of participatory approach, ten integrated development pilot operations (OPDI; *Opérations pilotes de développement integré*) based on the set up of AFIC were launched in 1994 in the different forest regions, in order to implement an integrated forest planning and cooperative forest management focused on the development priorities of forest populations. The OPDI were prepared and implemented with the support of specialized NGOs.

The results of these OPDI were limited and did not last because in particular of the provisions of the Forest Code on access to resources (Appendix 12), and of the limited capacities of the Forest Administration and the CRDA. The repeal of the provisions relating to the AFIC and their replacement by the GDA (see Appendix 12) notably introduced restrictions on revenue generation and harmed the success and sustainability of these operations. Subsequently and on the basis of this experience, several similar actions were conducted in the context of the implementation of the 2002-2011 forest strategy, including by the PGIF I (see Appendix 16). However, most of these operations failed to produce conclusive and sustainable results for the same reasons, except in the case where they were used or continued in other projects.

GEF Micro funding program (1993-2015):

In the context of the environmental conventions implementation, particularly those arising from the Earth Summit, many projects relating to the management of natural resources were being implemented by civil society organizations (rural or socio-professional organisations or environmental NGOs). These projects were funded by the Small Grants Programme of the Global Environment Facility (GEF) Fund, of other national and bilateral partners and international NGOs. More than 85% of these projects intervened on biodiversity (46%), degradation of the land (25%) or mitigation of climate change (14%), through actions of information, awareness-raising, capacity strengthening, community management, conservation or valorisation.

Since 1993, 169 projects have been initiated and implemented, for a total amount of US$ 15.8 million (of which about a third comes from grants to the Program).

This Program had positive impacts related especially to the date palm sector, to oasian ecosystems, to the preservation of the rangelands and the fight against desertification. However, the limited size of the projects and their dissemination in space and in time limit the extent and durability of these impacts.

Information, communication and transparency

82. The lack of a communication and information dissemination mechanism led the DGF to set up its in own support structures, such as communication unit created in 2013, with the role of promoting external communication on the activities of the sector (to institutional and non-institutional partners, development and cooperation partners and the general public) and developing the internal communication within the Forest Administration through information exchange and sharing mechanisms. This initiative seems to have had positive effects, since many actors from the public and private sectors have approached the Forest Administration to identify investment opportunities in the forest sector or to solicit forestry concessions, as it is the case for the *Caisse des Dépôts et Consignations*

(CDC), the 'Jeff Medjerda' company and the «El Karthikeyan» NGO. Consultations with the latter led to the signing in 2014 of a partnership agreement for the implementation of a reforestation programme ("Green Tunisia»), aiming at planting one million trees. However, despite the creation of this communication unit, the lack of information available at the local level remains patent, with the exception of occasional communication efforts by the civil society (NGOs).

83. On the whole, the budget control procedures in force in the Tunisian Administration promote transparency, although their heaviness affects the performance of the activities and their budgetary efficiency (increase of the costs). However, the current procedure for the development of the National Forest Programme, which represents an average of 87% of the budget of the sector, does not promote a systematic transparency, as more than 70% of the total budget is dedicated paying the casual workforce used for forestry work. This makes monitoring the use of the corresponding budget line for the various scheduled activities and operations particularly complicated. The audit report of the 2002-2011 National Strategy on the Development of the Forest and Pastoral Sector, established by the Court of Auditors in December 2012, also noted many deficiencies and anomalies. The recent adoption by the MARHP of the Budgetary Management by Objective (BMO), in the context of the ENPARD[60] initiative with the EU support, should however improve transparency. The budgeting by objective procedures require that each target be supported by measurable results, which allows an adequate monitoring of the achievements and an audit of their costs.

84. The management of the projects co-financed by the development partners is however completely transparent insofar as the technical and financial monitoring and reporting procedures are aligned with those of the financial partner (conditionality, procedures manual, procurement plans, format and periodicity, independent annual audit, etc.).

85. At the technical level, data and information produced in different types of technical reports (annual reports, evaluation reports, etc.) suffer from the absence of verification and/or quality control mechanisms. This often causes discrepancies and more or less important inconsistencies in quantitative data, which makes them particularly difficult to interpret.

[60] *European Neighbourhood Programme for Agriculture and Rural Development (*Programme européen de voisinage pour l'agriculture et le développement rural*)*

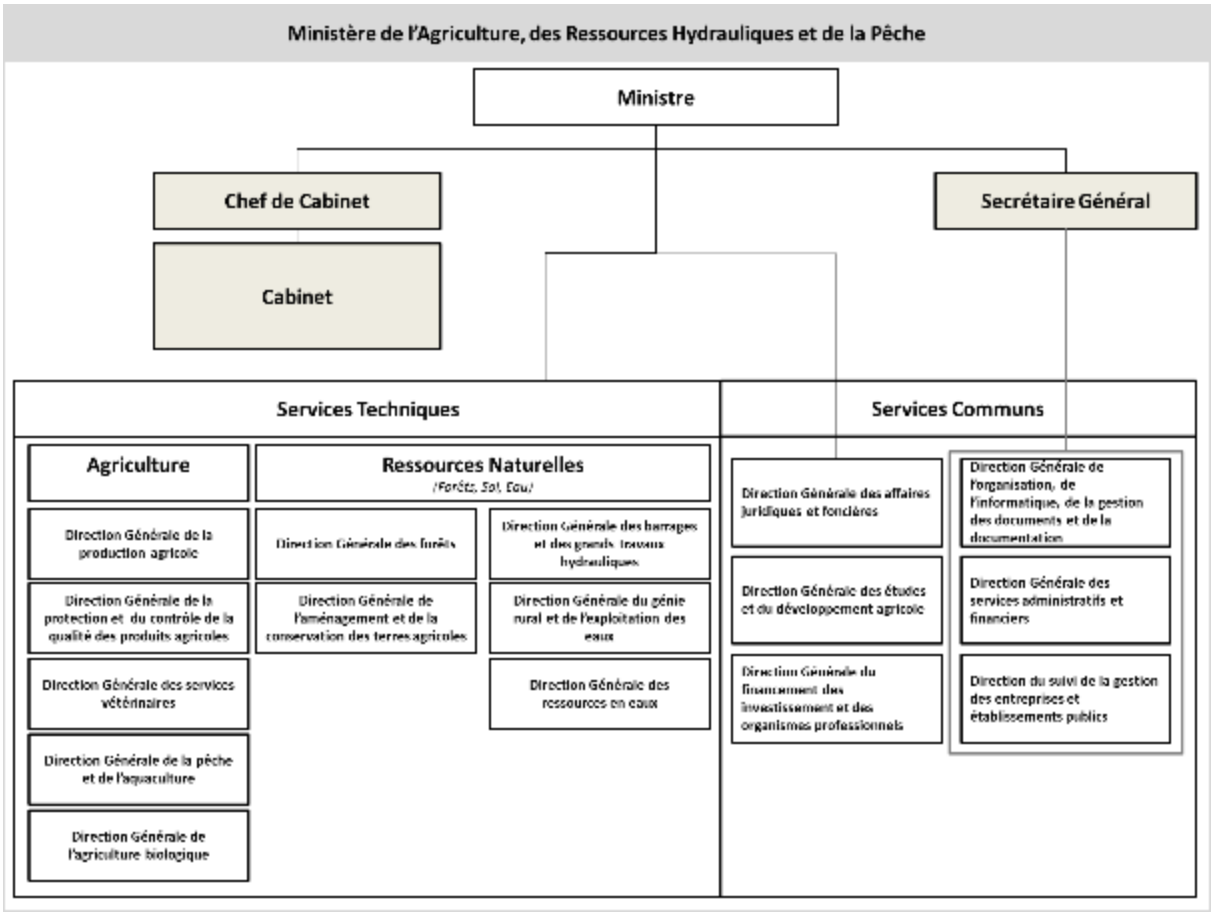
Appendix 11 : Presentation of the national institutions involved in natural resource management in Tunisia

86. The first forestry office in Tunisia was created in June 1883 within the General Directorate for Public Works. It was then placed under the administrative supervision of the Ministry of Agriculture. Further to the development of its role and assignments as well as the increase of the forest surface areas under the forestry system, the forestry Administration progressively grew to become in 1990 the General Directorate of Forests (DGF) within the Ministry of Agriculture, Water Resources and Fisheries (MARHP).

*Ministry of Agriculture, Water Resources and Fisheries (*Ministère de l'Agriculture, des Ressources Hydrauliques et de la Pêche *; MARHP)*

87. The missions and assignments of the MARHP are defined by Decree 2001-419 of 13 February 2001. They cover 5 activity sectors: agriculture, fisheries and aquaculture, livestock, hydraulic resources and natural resources (including forests, rangelands and soils).

88. The MARHP is composed of a Minister's Office, a General Secretariat, 10 technical General Directorates, 6 Support General Directorates and one budget management by objective unit (with a Directorate General level). Its official organizational chart is presented in Figure 5.



Source: DGF & Banque Mondiale, 2016

Figure 5 : Official organisational chart of the Ministry of Agriculture, Water Resources and Fisheries

*General Directorate of Forests (*Direction Générale des Forêts *; DGF)*

89. The general mission of the General Directorate of Forests (DGF) is 'the implementation of the provisions of the Forest Code and its implementing rules' (article 7 of the Forest Code). Its major roles and fields of action are presented in the table below. The DGF relies on 4 technical Directorates at the central level, and on forest boroughs at the local level, which are part of the Regional Rural Development Commission (*Commissariats Régionaux au Développement Agricole*).

Role	Fields of action
Implementation of the forest Code	(i) Submission to the Forest Code; (ii) Management of the State Forest Domain and the private forests; (iii) Management of the rangelands; (iv) Inducements from the State to participate to the promotion of silvo-pastoral actions; (v) Regulation and conservation of the State forest domain and of the lands under the Forest Code; (vi) Assessment and compensation for offenses; (vii) Sand dunes; (viii) Alfa grasslands.
Management of hunting and game conservation	(i) Law and practice on hunting rights; (ii) Fight against predators and pests in agriculture; (iii) Hunting tourism; (iv) Hunting regulation and penalties; (iv) Hunters associations; (v) Consultative commission for hunting and game conservation.
Protection of nature and wildlife	(i) Protected areas and recreational forests; (ii) Wetlands protection; (iii) National Council for the protection of nature; (iv) Regulation and penalties.

*Direction of forest exploitation (*Régie d'Exploitation Forestière *; REF)*

90. The REF depends on the Ministry and is responsible for the logging and sale of forest products, in close collaboration and coordination with the DGF technical Directorates, while relying on the administrative forestry areas in the field. The REF does not have its own budget for investment. That budget is a part of the National Forest Program budget made available to the DGF and the administrative forestry areas.

*Regional Rural Development Commission (*Commissariats Régionaux au Développement Agricole *; CRDA)*

91. Regional Rural Development Commissions (CRDA) are public administrative institutions with a corporate status and financial autonomy. They are responsible, at the regional scale (governorate), for all the missions carried out by the Ministry at central level. Their responsibility include:

- See to the implementation of the legal and regulatory provisions, especially concerning farmland protection, forests and water police, as well as animal and plant health;
- Conduct land holding restructuration operation and monitor the operations of farmland attribution and land structure reform (apart from those covered by the authority of the Agency for Agrarian Reform of Irrigated Public Land (ARAPI);
- Ensure the protection and development of forest resources, water and soil conservation, and watershed management;
- Ensure the management of the public hydraulic and forest domain and the conservation of the natural resources.

92. The CRDAs are managed by a Regional Commissioner for Rural Development, a General Director. They work with the concerned Governor, in compliance with the current law and regulations, and collaborate and coordinate their actions with the Regional Directorate of the institutions placed under the MARHP authority. The CRDAs are organized into divisions and districts, according to the decrees of specific organization and Law 89-44 of 8 March 1989, and according to the specificities and needs of each region.

*Administrative Forest Districts (*Arrondissements forestiers ; *ArF)*

93. The administrative forest districts (ArF) are part of the CRDAs and are located at the governorate level. They deal with the main management and control activities in the field in the State public and private forest domain, as well as in the private forests and collective rangelands under forest regime.

94. The ArF administrative and financial supervision is carried out by the CRDAs, whereas they technically depend on the DGF at the central level.

Other stakeholders of the MARHP related to the forest Administration

95. The DGF, the REF and the ArF/CRDA work in collaboration with many other institutions that depend on the MARHP and that are presented below.

Structures	Roles and duties
Minister's Office	➲ Decision making and important arbitration
Directorates	
General Directorate of Studies and Farming Development *Direction Générale des Études et du Développement Agricole* (DGEDA)	➲ Coordination of the sectoral planning ➲ Participation to sectoral strategies formulation ➲ Formulation of statistics on agriculture (forests excluded) ➲ General census of agriculture in rural areas (new activity being currently prepared)
General Directorates of financing, investments and farmers organizations *Direction Générale du Financement, des Investissements et des Organisations Professionnelles* (DGFIOP)	➲ Coordination of the budget management of the various MARHP programmes with the Ministry of Finance ➲ Financial coordination with the Central Bank of the resources related to the projects and programmes co financed by the development partners ➲ Promotion of the professional farming organizations and follow up, evaluation and control of their activities
General Directorate of Development and Conservation of Farmland *Direction Générale de l'Aménagement et de la Conservation des Terres Agricoles* (DGACTA)	➲ Development of management activities for the protection of farm lands by developing structures for the conservation of waters and soils
General Directorate of legal and land tenure Affairs *Direction Générale des affaires juridiques et foncières*	➲ Farm land property ➲ Land-related litigation
General Directorate of dams and large hydraulic works *Direction Générale des Barrages et des Grands Travaux Hydrauliques* (DGBGTH)	➲ Construction, maintenance and management of large dams and hydraulic structures ➲ Land protection (watersheds) upriver of large dams and hydraulic structures (in coordination with the DGF and the DGCTA)
General Directorate of Financial and Administrative Services *Direction Générale des Services Administratifs et Financiers* (DGSAF)	➲ Administrative and Financial management of the MARHP: employees and career advancement, acquisition of goods and services, etc.

Structures	Roles and duties
General Directorate of Organization, information technology, records management and Documentation *Direction Générale de l'Organisation, de l'Informatique, de la Gestion des Documents et de la Documentation* (DGOIGDD)	➲ IT management ➲ Electronic management
Budget Management By Objective Unit *Unité de Gestion du Budget par Objectif* (UGBO)	➲ Support to the different structures of the MARHP for the GBO implementation
Organizations under the MARHP	
National Institute of Rural Engineering, Water And Forestry Research *Institut National de Recherche en Génie Rural, Eaux et Forêts* (INRGREF)	➲ Scientific research in waters and forests rural engineering ➲ Management of the arboreta
AgroSilvoPastoral Development Office of the North West *Office de Développement Agro-Sylvo-Pastoral du Nord Ouest* (ODESYPANO)	➲ Integrated management of mountainous and forest areas in the Northwest notably through the support to the development of agriculture and agro-silvo-pastoral activities
Breeding and Grazing Office *Office de l'Élevage et du Pâturage (OEP)*	➲ Development and improvement of livestock farming yield ➲ Development of cattle feed resources (including the improvement of private rangelands)
Tabarka Silvo-Pastoral Institute *Institut Sylvo-Pastoral de Tabarka (ISPT)*	➲ Silvo-pastoral research ➲ Training of qualified technicians in forestry and silvo-pastoralim
Farming outreach and training Agency *Agence de Vulgarisation et de Formation Agricole* (AVFA)	➲ Agricultural training ➲ Management of the Agricultural vocational centre in the Remel forest sector

Other stakeholders involved in the management of forests and rangelands

96. Other institutions and national structures linked to other governmental departments are more or less, directly or indirectly, concerned by the forest and rangeland sector, and collaborate and/or complement to the players listed below. They include in particular:

- The Ministry of Environment and Sustainable Development (*Ministère de l'Environnement et du Développement Durable*; MEDD), and mainly the General Directorate of Environment And Quality Of Life *Ministère de l'Environnement et de la Qualité de la Vie* (DGEQV) acting through its Directorate of Ecology and the Natural Environment (*Direction de l'Écologie et du Milieu Naturel*; DEMN), which holds:
  - The secretariat of the National Council of Fight Against Desertification (*Conseil National de Lutte Contre la Désertification* ; CNLCD) ;
  - The focal point for the Convention on Biological Diversity (CDB) in Tunisia, in charge of coordinating the preparation and implementation of the CDB through the national strategy and action plan for biodiversity, currently being updated;
  - The 'Climate Change' and 'Adaptation Funds' focal point;
  - The Green Fund for the Climate focal point.
- The Coastal Protection and Development Agency (*Agence pour la Protection et l'Aménagement du Littoral*; APAL), under the MEDD, acts also on the coastal wetlands;
- The Land Court, under the Justice Ministry;

- The Ministry of Equipment, Habitat and Land Planning (*Ministère de l'Équipement, de l'Habitat et de l'Aménagement du Territoire*), in charge of land management and conservation;
- The governorates, under the Home Office (*Ministère de l'Intérieur*), in charge of territorial Administration and public security at the regional scale. They maintain functional cohesion with the CRDAs, in particular with the administrative forest districts (owing to their paramilitary and legal character).

97. In parallel, the Administration of the forest and rangeland sector has progressively been strengthened over time by support institutions in the research and training fields, in particular with:

- The Tabarka Silvo-pastoral Institute *Institut Sylvo-pastoral of Tabarka* (ISP): created in 1970, it is a Farming higher education and research institute, under the MARHP and the Ministry of Higher Education And Scientific Research (*Ministère de l'Enseignement Supérieur et de la Recherche Scientifique* in Tunisia; MERSRST; University of Jendouba).
- The National Institute of Rural Engineering, Water And Forestry Research (*Institut National de Recherche en Génie Rural, Eaux et Forêts*; INRGREF): created in 1996, it is since 1957 the result of the improvement of research institutes in the water and forest fields, and is also under the MARHP and MESRST (University of Carthage).
- The Agricultural Professional Training Centre (*Centre de Formation Professionnelle Agricole*; CFPA) in the Remel Forests area: created in 1968 as a forest exploitation school, this education center was converted in a CFPA for forestry in 1999 in order to train labourers, technicians and project promoters in various forestry and agroforestry specialties.

Appendix 12 : Analysis of the legal framework of forest and pastoral sector in Tunisia

98. The legal forestry and pastoral framework is essentially governed by the Forest Code and its implementing provisions. However, a large number of texts (laws and decrees) having a global or cross-cutting nature interfere with the management of natural resources (including forest and pastoral resources).

99. Figure 6 sketches legal and regulatory context of the forest sector and shows the four spheres of regulations including forest and rangelands management. The exhaustive list of rules related to forest and pastoral resource management is given in Table 13.

Table 13: Laws and regulations related to forest and pastoral resources

Area of intervention	Reference	Institutional responsibility
Forest and rangeland management	*Loi n° 88-20 du 13 avril 1988 portant refonte du Code forestier et ses textes d'application (décrets et arrêtés)*	MARHP/DGF/CRDA
Forest administration organisation	*Loi n° 98/43 du 8 mars 1989 portant création et organisation des Commissariat Régionaux au Développement Agricole*	MARHP and Ministry of Finances
	Décret n° 2001-419 du 13 février 2001, fixant les attributions du Ministère de l'agriculture	MARHP and Ministry of Finances
	Décret n° 2001-420 du 13 février 2001, fixant l'organisation du Ministère de l'agriculture	MARHP and Ministry of Finances
Populations/users organisation	*Loi n° 99/43 du 10 mai 1999 portant sur les Groupements de Développement Agricole et de la pêche modifiée par Loi n° 2004/24 du 15 mars 2004*	MARHP/DGFIOP/CRDA
	Loi n° 2004-24 du 15 mars 2004, modifiant et complétant la loi n° 99-43 du 10 mai 1999, relative aux groupements de développement dans le secteur de l'agriculture et de la pêche	MARHP/DGFIOP/CRDA
Natural resources protection	*Loi n° 95/70 du 17 juillet 1995 portant promulgation du Code de la Conservation des eaux et des sols*	MARHP
	Loi n° 76/85 du 11 aout 1976 relative aux possibilités d'expropriation des terrains privés reboisés au profit du DFE dans le cadre de l'utilité publique	MDEF et MARHP
	Loi n° 83/87 du 11 novembre 1987 relative à la protection des terres agricoles, y compris les forêts	MARHP/CRDA
	ŸLoi n° 99/93 du 17 août 1999 portant Code des hydrocarbures et stipulant l'obligation de protection des forêts ;	MIEM/Ministry of Finances
	Loi n° 2003/26 du 14 avril 2003 modifiant et complétant la Loi n° 76/85 du 11 aout 1976, relative à l'expropriation des terrains privés reboisés au profit du DFE dans le cadre de l'utilité publique et de l'intérêt national	MDEAF et MARHP
	Différents décrets et arrêtés portant création des parcs nationaux et des réserves naturelles	MARHP/DGF/CRDA
	ŸLoi n° 2003-30 du 28 avril 2003, portant promulgation du Code minier et stipulant l'obligation de protection des forêts	MIEM and Ministry of Finances
	Loi n° 83/87 du 11 novembre 1987 relative à la protection des terres agricoles, y compris les forêts	MARHP
Natural resources co-management	*Loi n° 2005-13 du 26 janvier 2005 relative aux concessions forestières (cogestion et partenariat public-privé)*	MARHP/CRDA
	Loi n° 2008-23 du 1er avril 2008, relative au régime des concessions	Prime Ministry

Area of intervention	Reference	Institutional responsibility
	Décret n° 2008-2965 du 8 septembre 2008 portant création de l'unité de suivi des concessions	Prime Ministry
	Décret n° 2010-1753 du 19 juillet 2010, fixant les conditions et procédures d'octroi des concessions	Prime Ministry
	Décret no 2013-4630 du 18 novembre 2013 portant création d'une unité de suivi des concessions	Sectorial Ministries
Incentive of investments	*Loi n° 63/17 du 27 mai 1963 relative à l'encouragement des reboisements et du développement sylvo-pastoral*	MARHP and Ministry of Finances
	Loi n° 93-120 du 27 décembre 1993 relative au Code des investissements	Sectorial Ministries and Ministry of Finances
	Décret n° 95/793 du 2 mai 1995 relatif à l'octroi de crédits aux petits agriculteurs pour les plantations forestières productives, les plantations pastorales et l'amélioration des parcours	MARHP and Ministry of Finances
Water resources	*Loi n° 16-75, du 31 mars 1975, portant promulgation du Code des eaux*	MARHP
Land management	*Décret-loi n° 64/03 du 20 février 1964 relatif à l'immatriculation obligatoire de tous les immeubles ruraux, y compris les forêts*	MEHAT/MARHP
	Loi n° 64/05 du 12 mai 1964 relative au transfert des propriétés forestières au DFE et au transfert des terres objet de contrats de reboisement avec les étrangers au DFE	MDEAF et MARHP
	Loi n° 64/28 du 4 juin 1964 portant régime général des terres collectives et relative au statut des terres des parcours et l'organe de gestion des terres collectives, le bornage et l'arbitrage de celles-ci	MDEAF et MARHP
	Décret n° 90-99 du 11 juin 1990 portant attribution du MDEAF	MDEAF and Ministry of Finances
	Loi n° 92/44 du 4 mai 1992 portant transfert de certaines attributions des Ministères de l'Agriculture et celui des finances, au Ministre chargé du domaine de l'État et des affaires foncières	MDEAF, MARHP and Ministry of Finances
	Loi n° 94-122 du 28 novembre 1994 portant promulgation du Code de l'aménagement du territoire et de l'urbanisme	MEHAT

MEHAT	*Ministère de l'équipement, de l'habitat et de l'aménagement du territoire*
MARHP	*Ministère de l'Agriculture, des ressources hydrauliques et de la pêche*
MDEAF	*Ministère du Domaine de l'État et des Affaires foncières*
MIEM	*Ministère de l'Industrie, de l'énergie et des mines*

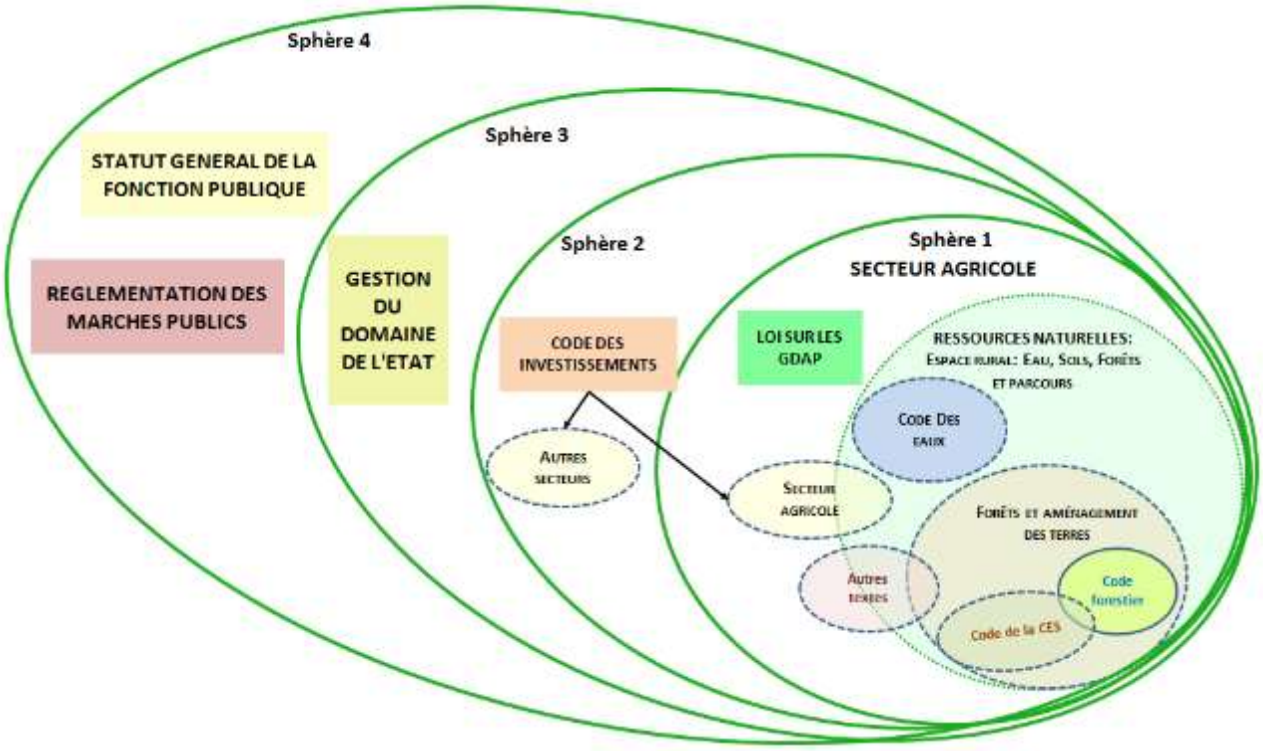


Figure 6 : Sketch of the forest sector legal and regulatory context

100. Observation and results of analysis presented in this document are consistent and corroborated by the institutional and legal diagnosis of the forest sector (DGF & World Bank, 2016) carried out in the framework of the preparation of the integrated landscape management of the least developed regions in Tunisia project. (see section 6 of IP/FIP). Institutional and organizational analysis highlight a number of deficiencies impacting significantly the forest administration performances (see Appendix 10), originating mostly from the Forest Code and joint regulatory texts.

Forest code and implementing rules

101. The fact that the Tunisia has a Forest Code since 1966 (revised in 1988) is an important asset for forest management. The Forest Code covers the three main areas are: the (i) application of the forest regime (including the organization of the forest users, alienation of forest products, and temporary occupancy and forest concession regime, (ii) hunting management and game conservation, and (iii) the protection of nature, flora and wildlife. The Forest Code recognizes the richness of the forest heritage and specifies that "its protection and its development are a fundamental requirement of the national policy for economic and social development" (article 1). It also recognises that 'the protection of the national territory against desertification and the development of agro-pastoral resources constitute actions of national interest' (article 68). This is a favourable background context for the sustainable management of forests and rangelands.

102. The definition and application of the forest regime (title 1) are an important tool for the protection of forest ecosystems. However, the provisions for its implementation and the constraints that it creates, especially for the logging of forests on private land, are major obstacles to private investment in the forestry and pastoral sector and contribute to the lack of trust between the forest owners and the Forest Administration.

103. The forest code recognizes the rights of use of forest peoples living within forests (title 1, Chapter 4, section 4). These rights of use, such as the collection of dead wood, collection of secondary species brush and grazing, are limited to the personal needs of the user and his family, and may not have an industrial

or commercial character. Apart from these rights of use, **access to forest products** is strongly limited by the provisions relating to the disposal of forest products (title 1, Chapter 4, section 3). It can indeed be done by public tender, even though private sales between private individuals may take place in particular cases. This public tender system involving the auction does not allow local poor households or private structures that have limited means to benefit from the exploitation of these resources. These provisions are thus not conducive to the economic valorisation of the forests and to the sharing of benefits with local populations.

104. The forestry code and its implementation texts however provide the **participation of local populations to forest management**, in particular through the establishment of Common Interest Forest Associations (*Associations forestières d'intéreret collectif;* AFIC), aimed at "the integration of the forest population by engaging in forestry protection and development actions and the exploitation of forest resources" (sections 43 and 44). These favourable provisions were however thwarted from May 1999 by the provisions of the transverse texts relating to the organization of development groups in the agriculture and fisheries. Apart from the provisions allowing the creation of AFIC, the Forest Code does not entail any **incentive or supporting mechanism** for forest populations to invest and get involved in the management of forest resources, which does not encourage the economic development of forest and pastoral ecosystems.

105. **Private sector involvement** in the better use of forests is also planned in the forest law, through temporary occupation and concessions mechanisms (title 1, Chapter 8, section 2 of the forestry code and Act n° 2005-13 January 26, 2005 on forest concessions). A set of forest concessions were studied and organised to be granted[61], but new general provisions, defined from 2008, rendered ineffective these incentive measures of (see § 114 below).

106. The Forest Code includes provisions relating to the **management of rangelands** (title 1, chapter 6). However, these remain very limited, insofar as all other provisions relate at the same time to forests, the land under forest regime and protected areas. Even if rangelands are systematically indicated, these provisions do not reflect the issues of collective rangelands, which have a particular landholding status. This underlines the need for a set of special provisions for the management of rangelands, based on past experiences and the history of pastoral development over the past five decades.

107. The Forest Code provides dissuasive measures in the event of offense in order to guarantee the protection of forests and rangelands. Several of those provisions however have not been revised for several decades and are not efficient anymore, which does not help preventing degradation and deforestation phenomena.

108. Overall, all the Forest Code and its implementing texts focus on the "repressive" aspect and on control, monitoring and inspection missions by the Forest Administration. Very few provisions refer to socio-economic development objectives, which is indicative of a vision and a relatively 'traditional' approach that does not allow an optimal valorisation of forest and pastoral ecosystems. This approach centered on protection of the ecosystems is now suitable anymore. In the current economic and environmental context, the protection of forests and rangelands cannot be guaranteed if they are not developed and that all stakeholders, including local communities and private players, benefit from the generated economic benefits. This derives from the absence of a dynamic approach of the sector management, which should include a periodic assessment of the effects of the key provisions of the forestry legislation in view of their progressive adaptation to developments in the sector context (especially socio-economic and demographic).

Transversal texts interfering with forest and pastoral sector

109. As presented in Appendix 11, legal texts relative to the **organization of forest and pastoral resources Administration** (law n° 98/43 of 8 March 1989 and decrees n° 2001-419 and 2001-420 of 13 February

[61] *List of concessions can be consulted on website http://www.onagri.nat.tn/uploads/divers/foret/index.htm*

2001, do not allow the Forest Administration to perform its duties as effectively as possible. Indeed, beyond the organizational problems identified, the prevalence of control and punishing systems and mechanisms compared to those dedicated to forest and socio-economical development is detrimental to integrated and participative forest and pastoral ecosystems sustainable management, and induces an important lack of trust of population and private sector towards the forest Administration. This lack of trust accentuates their low involvement in forest management and encourages degradation and deforestation phenomena.

110. Legal texts relative to the organization of rural population around natural resources management (law n° 99/43 of 10 May 1999 relative to development groups in the agricultural and fishing sectors, modified by the law n° 2004/24 of 15 March 2004) repealed the provisions of the forest code relative to the forest user organization in AFIC. Intended to help farmers and fishermen organize their production and/or natural resources management, provisions in those texts are not adapted to groups who would want to intervene in forests management, in the sense that they have introduced limitations on the purpose of the GDA, which does not include forestry activities, and restrictions on the generation of revenue by them.

111. Legal texts relative to **natural resources protection, including forest resources**, are found in decrees and bylaws laying down the creation of National Parks and Natural Reserves, and in several laws about protection of agricultural and forest land, through amongst others (i) possibility to expropriate private reforested land in favour of state forest domain for public interest, (ii) the obligation to protect forests for projects related to oil and mine exploitation, and (iii) the obligation to carry out impact studies on the environment. The provisions on these last two points are on the whole favourable to the protection of natural resources. However, if the provisions relating to the expropriation of replanted private lands have allowed the reconstruction/rehabilitation of forest and pastoral ecosystems in sensitive areas such as coastal dunes, they were not revised since their adoption, nor followed by measures to promote their sustainable development by their owners. This situation has led to generate and maintain certain distrust toward the forest administration that resulted, particularly since 2011, in abuses to natural environments (intentional fires, clearings, destruction of structures, etc.).

112. Legal texts relative to **the support of investment in agriculture, including forestry and pastoralism**, (law n° 63/17 of 27 May 1963 meant to encourage reforestation and silvo-pastoral development and law n° 93-120 of 27 December 1993 relative to the Investment Code), include measures to encourage the development of agricultural production, forestry and pastoralism, subject to the provision of loans and grants. However in view of their generic character which does not take into account the specificities of the forest and pastoral sector, these measures did not produce the expected effects. Instead, they have had negative impacts on forests and rangelands due to the agricultural clearings that they have tended to promote. This can be explained through the social and economic, even cultural, aspect of the agricultural production that are not subject to any 'administrative' constraint, as well as by the inadequacy of incentive measures to the needs of rural populations. In addition, the involvement of the forest administration, which suffers from a deteriorated image and a reputation of excessive heaviness for the rural populations, has tended to divert the rural populations from desired investments.

113. Legal texts relative to **land administration and to land-use planning** are related to amongst others

- Land titling (including forest domain) and to land administration linked to forest and reforestation contracts, such as the (Legislative Decree n° 64/03, 20February 1964, relating to the compulsory registration of all rural estate, including forests): these texts promote land securing both in the agricultural sector in the forestry sector, and constitute an asset for the protection and sustainable management of forest and pastoral ecosystems;
- Land planning as in the law n° 94-122 of 28 November 1994 laying down the land-use and urban planning code. This text does not specifically cover the development of rural areas outside urban areas governed by the town planning code, which opens the way for changes in use of land in rural areas and to land speculation;

- Transfer of some attributions from the Finance And Agriculture Ministers to the Minister responsible for the State Domain And Land Affairs (law n° 92/44 of 4 May 1992) in particular as regards rural leases and the pricing of agricultural and forestry concessions. In the absence of references in the forest domain, the pricing of forest concessions is regarded as similar to that of granted state-owned agricultural lands, which does not correspond to the economic reality of the forest context and discourages private sector investment in the forest sector.

114. Law n° 2005-13 of 26 January 2005 on forest concessions (whose enforcement is governed by the MARHP) establishes a favourable framework for the involvement of the private sector in the management of forest resources through a Public-Private Partnership. However, law n° 2008-23 of 1 April 2008 on the concession regime, Decree n° 2010-1753 of 19 July 2010 laying down the conditions and procedures for the granting of concessions) and texts relating to the granting of public contracts lay down the general provisions on these subjects in a uniform manner, without taking into account the specificities of the forest and pastoral sector (including the specificities of the Forest Administration). They impede or come into conflict with Law n° 2005-13 on forest concessions. For example, the proponent of an ecotourism project on a specific logging concession must go through a bidding procedure, which increases the risk of failure of the project due to unsuccessful procedures linked to the absence of competitors or the existence of suspicious or malicious competition.

Appendix 13: Analysis of the forest and pastoral sector political framework in Tunisia

Natural resources management and agricultural production

115. The agricultural development policy of Tunisia has as its main objectives the promotion of natural resources (water, soil, rangeland, forests and fisheries), the consolidation of food self-sufficiency, the enhancement of the competitiveness of the agricultural sector and the strengthening of exports. For this purpose, it includes two sets of sectoral/subsectoral strategies:

- That governing the management of natural resources, which comes under 5 strategic programs relating (i) to water resources, (ii) to forests and rangelands, (iii) the management planning and conservation of agricultural land, (iv) fisheries and aquaculture, and (v) the support to various programmes;
- That governing the agricultural production, which comes under several programmes or strategies for the different subsectors and the main branches of plant production (crops, olive growing, fruit growing, dates, etc.) and animal (livestock and animal products, animal health, etc.).

116. These two sets are complemented by the national adaptation strategy of Tunisian agriculture and ecosystems to climate change (2007).

117. In Tunisia, there is no particular natural resources management policy. Strategic guidelines and national policy in this matter are found in the national Agenda 21. The national strategy for sustainable development 2012-2016 has defined 10 areas of intervention which determine the development durability in Tunisia and five main strategic lines, including the promotion of sustainable development and the efficient management of natural resources. This focus suggests the development of a new approach to environmental and protection of natural resources policy by intensifying efforts aiming at optimizing resources use and preserving ecological balance through, among others, incentives for private investment in the environmental sector depending on the concession option, the adoption of the choice of the green economy as a priority in the sustainable development model, preservation of natural resources and fight against desertification.

118. Natural resource management is governed by two sets of policies and strategies: on the one hand, the sub-sectoral strategies related to the promotion of natural resources and forming an integral part of agricultural development policy, and whose preparation and implementation is the responsibility of the MARHP, (see § 118), and on the other hand, national strategies and environmental policies relative to the implementation of international conventions from the derived from the CNUED[62] and ratified by Tunisia (United Nations Convention to Combat Desertification, Convention on Biological Diversity, United Nations Framework Convention on Climate Change), with a transversal nature, and whose preparation and implementation are coordinated by the MEDD. These cross-cutting strategies include in particular the National Strategy on Climate Change in Tunisia (2011), the sustainable development national strategy (2011), National strategy and Action Plan for Biodiversity (2009;being updated), the National Programme of Action to Fight Desertification (1998-2017; being updated with the PNUE/FEM assistance). As a stakeholder to various international conventions, Tunisia is expected to bring its various sectoral strategies into the national strategies adopted within the said agreements.

Forest and pastoral policy and strategy

119. Since the independence, the forest sector has benefited from a favourable political environment through the implementation of investment programs and major maintenance. The forest sector's contribution to employment through a significant supply of working days in the less developed regions of the country (production of nursery plants, reforestation, silvicultural work and maintenance, logging, caretaking, etc.) is indeed one of the national priorities.

[62] *Conférence des Nations Unies sur l'Environnement et le Développement (Sommet de la Terre) de 1992*

120. Over the last two decades, the forest policy has evolved through (i) the forest code reform in 1988 introducing the forest population participation to the sector's development, (ii) the revision in 2005 of certain provisions of the Forest Code aiming at promoting a public-private partnership (PPP) around the forest development through the granting of logging concessions and (iii) the passage of a ten-year programming approach to a strategic planning approach , which has resulted in the implementation of the National Development Strategy of the forestry and pastoral sector (SNDSFP) 2002-2011, the development and adoption of the 2015-2024 National Development Strategy and Sustainable Management of Forests and Rangelands (SNDGDFP) (see Box n° 1).

121. The implementation of the previous SNDSFP (2002-2011) has resulted in the mobilization of 426 million of TD from the budget of the State (which mostly comes from the National Forest Programme) and 66.5 million from external funding, nearly 500 million of TD, for the forest and pastoral sector. The mobilized amounts constitute an important asset for the Tunisian forestry and pastoral sector. However, only 74% of programmed expenditure, on average, was actually made. In addition, against the forecast cost of TD 909 million for the implementation of the 2002-2011 SNDSFP, this is only 47% of the initially programmed expenditure. Despite the importance of the mobilized means, these low achievement rates illustrate the difficulties faced by the Forest Administration to implement a sustainable management of the forests and rangelands.

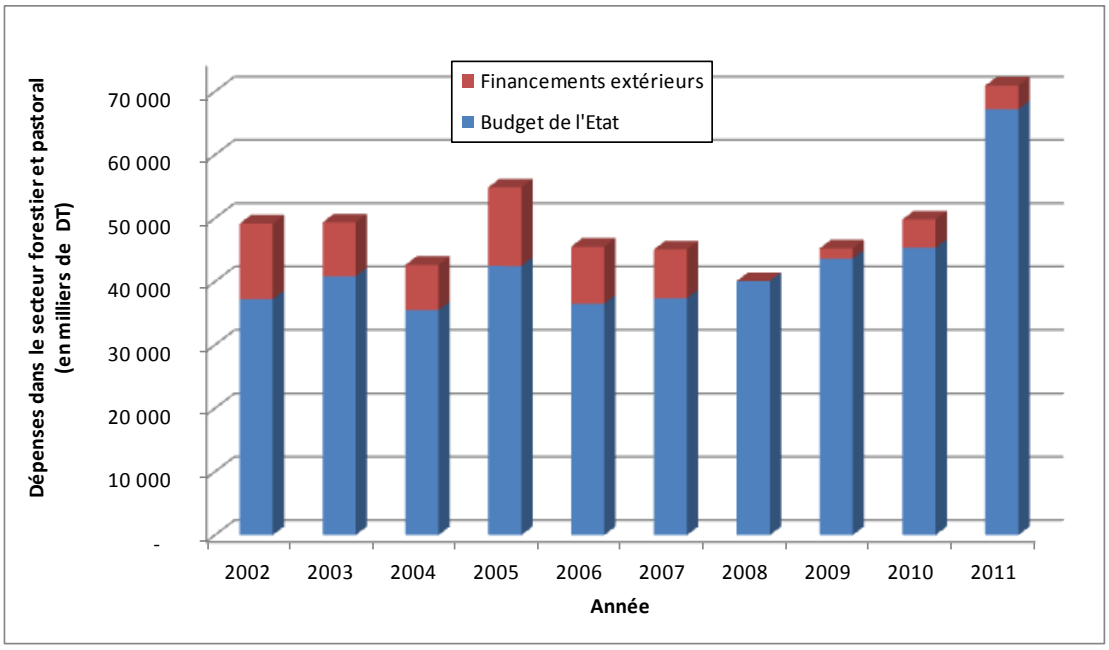


Figure 7: Evolution of amounts spent in the forest and pastoral sector from 2002 to 2011

122. The 2015-2024 SNDGDFP defines four strategic focuses (see box n° 2), each with several components. The existence of this strategy and the defined focuses constitute an important asset for the sustainable management of Tunisian forests and rangelands, because they take into account the achievements, failures and the potential development of the agro-pastoral sector and define priorities responding to its key issues. However, ambitious targets linked to the restructuring of the Administration, to the legislative reforms and the reorientation of the policies implemented so far (involving, inter alia, the massive recruitment of seasonal workers), combined with the absence of implementation of a change process are important challenges for the effective implementation of the SNDGDFP. In this context, the present IP/FIP can play an important role of support tool to the implementation of the SNDGDFP.

Box n° 2 : Key points of the SDGDFP 2015-2024

1. **Create an environment conducive to sustainable forest and rangeland development**, aiming at establishing an institutional and regulatory environment as well as capacities encouraging the lasting comitment of stakeholders in the forest and rangelands sustainable management
2. **Ensuring a sustainable development of forest and pastoral resources** that is in synergy with the economic and social development policies and priorities , to maintain , improve and develop the sector products over the long term
3. **Establish sustainable management of forests and rangelands in harmony with environmental policies** , so as to preserve their integrity and maintain and improve the environmental functions and services of forest and pastoral ecosystems
4. **Consolidate and improve the forest and pastoral cover** so as to improve forest cover and pastoral steppe and pre-Saharan regions in quantitative and qualitative terms, for a better contribution to achieving national goals of sustainable development and global targets for biodiversity, adaptation and mitigation of climate change and fight against desertification.

123. The agricultural policy to this day has resulted in the absence of a specific policy for rangelands, by the extension of arboriculture and crop cultivation on the most favourable rangelands, because in particular of the State incentives and the privatization of collective lands (World Bank, 1995)[63] and the development of irrigated farming in the southern regions. It resulted in a mosaic of perimeters splitting pastoral areas and encouraged overgrazing and of conflicts between farmers and large livestock breeders. Gradual awareness of the continuous degradation of rangelands from 1990 and led to the development of the 10 year rangeland strategy (1990-2000), which planned to ensure the reinstatement of suitable rangelands degraded by their rehabilitation and management. This first strategy has been relayed by the SNDSFP 2002-2011, and the SNDGDFP 2015-2024.

Strategy of development and conservation of agricultural land

124. As an integral part of the natural resource management policy, the planning and agricultural land conservation strategy is developed and implemented by the DGACTA and CRDAs since 1990 (in addition to the forest and pastoral strategy). Over the past two decades (1990-2011), this strategy, which occurs on private agricultural land outside forest domain, focused on (i) the development of watercourses, (ii) protection of crop lands, (iii) the servicing and maintenance of the works, (iv) work the replenishment of underground water reserves, and (v) construction of hill lakes. The various projects and programmes implemented in this field enabled to[64]:

- reduce the proportion of land subject to erosion from 24% of the national territory in 1990 to 15.2% in 2011;
- to increase the productivity of managed lands by about 20%, as well as to increase the length of useful life of the hill lakes;
- mobilize 90 million m3 of water per year for the irrigation of 6 957 ha for the benefit of 4 179 beneficiaries;
- reduce siltation of dams from 28 million m3/year to 19.8 million m3/year.

125. A new strategy (2015-2024) is currently being developed. This new strategy will initially focus on (i) integrated management of landscape and the strengthening of links between the conservation of natural resources and improving the conditions of life and the income of farmers, (ii) the effective participatory

[63] *Banque Mondiale, 1995. Stratégie pour le développement des parcours en zones arides et semi-arides. Annexe III. Rapport technique. Tunisie, Département Maghreb et Iran, Bureau Régional Moyen Orient et Afrique du Nord.*

[64] *Source : MARHP, 2014*

management, (iii) the empowerment of planning and management of the operation by the farmer, and (iv) implementation of planning models. Applicable therefore stressed that this strategy in this preparation, in addition to complementarities spatial and thematic, a certain synergy with the 2015-2024 SNDGFDFP in terms of participatory approach to the landscape scale centered on economic development. This constitutes an important asset for forestry and pastoral Tunisian. Both of these policies should be implemented in a coordinated and harmonised way. In this sense, this IP/FIP may be a particularly useful tool to ensure this synergy.

Policies and strategies for the water resources

126. The water sector has known since the early 2000s the development of new strategies and approaches focused on integrated water resources management and management of Risks Related to Climate Change, with the complementary strategy of mobilization of water resources (2002-2011), the complementary strategy of water and soil conservation (2002-2011) and the adaptation strategy of the agriculture sector and ecosystems to climate change (2007). The implementation of these strategies led to many studies and investment projects, including the Sector Investment Programme (PISEAU)[65]. Water policy currently in force in Tunisia is based on the mobilization of all resources identified, saving water, water quality management, reuse of brackish and sea water, extreme event management (droughts and floods), integrated and rational use of water, strengthening of institutions in charge of water management. However, although forest ecosystems play a key role in protecting the main watercourses, dams and hydraulic infrastructures, the construction of these infrastructures is not always accompanied by watersheds protection operations, for lack of coordination and financial means, which does not help the protection of water resources.

Agricultural production policies and strategies

127. A set of strategies aimed at the consolidation of food self-sufficiency, the improvement of the competitiveness of the agricultural sector and the strengthening of agricultural exports, these strategies are based on a set of subsectoral programs (olive oil strategy, citrus, etc.) or value chains (organic farming, potato, tomato, etc.). They implement a range of measures relating to (i) the remediation of the land situation, (ii) upgrading agricultural and pastoral farms, (iii) innovation and technology transfer, (iv) financing and encouragement to investment , (v) governance, (vi) the employability and the improvement of the management rate, and (vii) the development of the domestic and foreign market. These measures are almost exclusively oriented towards plant and animal production, the agri-food economy and export. Only measures relating to the encouragement of agricultural investment concern, at the margin, forestry and pastoral activities so that they are almost never solicited by farmers and pastoralists (see Appendix 12). This is reflected by a strong expansion of agricultural activities at the expense of land of the most productive rangelands, including in Central and Southern Tunisia, and, to a certain extent, at the expense of the forests in the North.

Other sectoral policies and strategies and consequences for the forest and pastoral sector

128. National policy of the **energy sector** is the responsibility of the Ministry of industry and is coordinated by the National Agency for Energy Control (ANME). In 2001, Tunisia 's energy balance became negative, because of the growth in demand and the stagnant supply. The energy policy of Tunisia has then set as objective the improvement of the energetic independence and security through the diversification of energy sources and the improvement of the economic competitiveness of Tunisian companies. The current energy policy works in the direction of rationalization of energy consumption and the

[65] *First phase of PISEAU was conducted from 2001 to 2006, and its second phase from 2009 to 2013.*

development of the use of renewable and alternative energies. However, the National Energy Control Strategy (ANME, 2014) [66] does not mention the wood energy sector, despite its socio-economic importance and its role in meeting the energy needs of households in rural areas (See Appendix 4), as demonstrated by the prospective study of the forest sector in Africa (Gader & Daly - Hassen, 2000) [67]. Despite interventions by the ANME in the wood-energy sector over the past 15 years, including through projects affecting the wood energy savings (dissemination of stoves with more efficient furnaces in disadvantaged rural areas), it denotes the absence of coordination and synergy between forestry and energy policies and strategies, despite the favourable current context characterized by a renewed interest in clean/renewable energy sources such as wood biomass. Indeed, the recent (2015) entry on the Tunisian market of solid fuel boilers (wood, waste and agro-industrial by-products, etc.) is already one of the precursors of development and the enhancement of the biomass-energy, which will have a direct impact on GHG emissions.

129. **Tourism** plays a major role in the Tunisian economy. Following its important development since the beginning of the 1960s, its revenues represented in 2014 7 to 8% of GDP and provided nearly 15% of jobs nationally (DG treasury, 2015) However, the slowdown observed in the last decade has led authorities to consider the stimulation of the sector. Given the degradation of the tourism sector since the Revolution in 2011, the new strategy aims to revitalise the sector, including via the diversification of products. In the context of climate change, Tunisia also developed a national adaptation strategy of the tourism sector to climate change (MEDD & GTZ, 2010) [68]. However, these policies do not explicitly evoke the tourist valorisation of forests and rangelands, despite the importance of the potential for synergy between these areas. The development of an alternative and sustainable national tourism (ecotourism, agro-tourism, cultural tourism, etc.) in the forest and pastoral spaces would participate in the revitalization of the tourism sector while promoting the conservation of biodiversity, local development and combating desertification.

[66] *ANME, 2014. Stratégie nationale de maîtrise de l'énergie – Objectifs, moyens et enjeux. Ministère de l'Industrie, de l'Énergie et des Mines. Agence Nationale pour la Maîtrise de l'Énergie. République Tunisienne. Juin 2014. 40 p.*

[67] *Gader D. & Daly-Hassen H., 2000. L'étude prospective du secteur forestier en Afrique – Tunisie. Direction Générale des Forêts. 35 p.*

[68] *Ministère de l'Environnement et du Développement Durable & GTZ, 2010. Stratégie nationale d'adaptation au changement climatique du secteur touristique en Tunisie – Synthèse. République Tunisienne. Toursime, Transports, Territoires, Environnement Conseil. 26 novembre 2010. 18 p.*

Appendix 14 : State of progress of the REDD+ process in Tunisia

Readiness Preparation Proposal (R-PP)

for Country: Republic of Tunisia

Date of submission or revision: *4 October 2016*

Forest Carbon Partnership Facility **(FCPF)**

The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries**(UN-REDD)**

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General Information

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Mr. Baptiste Algoet	FRMi
Mrs. Flore Hirsch	FRMi

Dates of R-PP preparation (beginning to submission):	03-09/2016
Expected duration of R-PP implementation (month/year to month/year):	04/2017 - 08/2020
Total budget estimate:	USD 3.67 million
Anticipated sources of funding:	from UN-REDD: 3.67 million
Expected government signer of R-PP grant request (name, title, affiliation):	*To be completed by the MARHP*
Expected key results from the R-PP implementation process:	• Outcome 1: The institutional arrangements for managing the REDD+ Readiness process are set-up and operational • From country Results Framework or R-PP components • Outcome 2: Information sharing & consultation infrastructure established and operational • Outcome 3: REDD+ strategy developed & approved • Outcome 4: A benefit sharing plan has been formulated and approved • Outcome 5: A REDD+ pilot financing mechanism is established • Outcome 6: A REDD+ registry is established • Outcome 7: A set of national REDD+ safeguards is formulated and approved • Outcome 8: REDD+ safeguards are operationalized • Outcome 9: A reference emission level has been defined • Outcome 10: A national REDD+ MRV system is developed and operational

Executive Summary

This R-PP sets out a roadmap for Tunisia to achieve REDD+ Readiness over a period of approx. 4 years (2017-2020) with a budget totalling USD 3.67m.

Tunisia, just as other North African countries, cannot be considered as a classical REDD+ country. With the data that is currently available. forest cover (approx. 6%), average forest carbon stocks (37tC/ha) and the annual deforestation rate (<1000 ha) can be considered to be very low when compared to most if not all other REDD+ countries. However, forest degradation mainly through grazing and fuelwood extraction is considered to be a major problem and the largest source of GHG emissions.

As such, activities to reduce forest cabon emissions are not financially viable at current carbon prices of USD 5. Yet, Tunisan forest ecosystems provide vital ecosystem goods and services to the entire society, but in particular the rural poor. An estimated 760,000 people, most of them considered to be poor, generate a third of their income and subsistence from forest products. The total economic value of forest ecosystem products and services in Tunisia was estimated at USD 142 million in 2010 or approx. USD 120/ha, of which only 5% is attributed to carbon retention and sequestration.

Tunisia has been an early advocate (see its UNFCC submission) of considering more seriously - i.e. by allocating funding - the multiple (non-carbon) benefits of REDD+, while at the same time undertaking efforts to enhance its forest monitoring system and the quality of its national GHG inventory to report also on forest carbon emissions. Tunisia, as expressed in its INDC, has also committed to reducing emissions in the forest sector.

Against this background, Tunisia is submitting an R-PP that is adapted to its specific situation. This is expressed through the following particularities:

- A comparatively simplified and streamlined institutional set-up, which seeks very close cooperation and also joint management with the Forest Investment Program (FIP)
- A focus on establishing only the minimum of REDD+ Readiness components first at the national level and avoiding overly complex design, but without compromising on core issues such as stakeholder participation or safeguards.
- Smaller-scale piloting of certain components such as a financing mechanism (instead of creating e.g. a national REDD+ fund)
- For regional implementation, work through the envisaged projects under the Investment Plan of the Forest Investment Program.
- For technical components such as REL and MRV, build on what has already been established, e.g. a REDD+ conforming forest monitoring system to produce activitiy data.
- Conceptual development and piloting of a mulitple-benefits monitoring system (linked to the NFMS) with the aim of seeking result-based payments for non-carbon benefits.
-

National Readiness Management arrangements

The institutional set-up is kept comparatively simple, with a dedicated and joint management unit - the National Coordination for REDD+ & FIP/IP - for both the REDD+ Readiness Process and the Forest Investment Program. The CN is set-up under the MAHRP, with an appointed national coordinator and technical and administrative support staff, including an international senior REDD+ consultant. The CN is supervised by a steering comittee, which consists of representatives of the government, civil society, the private sector and research institutions.

Technical work is advanced mainly through 4 working groups on 1) REDD+ strategy, 2) REL, MRV and Registry, 3) Benefit-Sharing and 4) Safeguards. These working groups are open to all stakeholders and - with the support of the CN and where needed also technical advice - are expected to steer and bring to conclusion their assigned topics.

Consultation and participation

A preliminary analysis of stakeholders and their potential roles in the national REDD+ process is provided in this R-PP. Further, stakeholders have been made aware of the national REDD+ process through a process of both individual consultations and joint meetings, including a national consultation workshop where an advanced draft version of the R-PP has been presented in September 2016.

Consultation and participation throughout the national REDD+ process rests on 5 pillars.

- Sensibilization and access to information: The CN will undertake an initial sensibilization campaign and will provide all information and documentation of the national REDD+ process through a dedicated website as well as inform about upcoming events and progress through a newsletter.
- Working Groups: The working groups are key for advancing the core elements of the national REDD+ Readiness process and are open to all stakeholders (see above).
- Public commenting period: Important documents are made available for public commenting and have to be taken into account.
- National validation workshops: Key REDD+ Readiness elements such as for example the national REDD+ strategy or the national safeguards policy will undergo a final validation to ensure a as far as possible societal consensus.
- A conflict resolution and grievance redress mechanism is established under the CN to ensure that there is a set procedure in case of conflicts.
-

Analysis of the drivers and underlying causes of deforestation and forest degradation & strategic REDD+ options

The main direct causes of deforestation and forest degradation are the clearing of land for agriculture or settlements, burning (human induced fires), fuelwood extraction and forest grazing.

The analysis of the underlying causes of deforestation and forest degradation points towards many administrative weaknesses, mal-adapted policies and forest management, but also poverty, a profound distrust between local forest users and the administration and a lack of detailed knowledge about the available forest resources which is needed to manage them more sustainable.

As a result, the following preliminary strategic REDD+ options are suggested, which will be subject to review and further analysis as part of the national REDD+ strategy process:

- To improve the governance and management of forests, both institutionally and regulatory,
- To better involve local forest users in the management of forests to both make forest use more sustainable (and legal) and improve the socio-economic situation
- To create alternative income sources by valuating the protection and thus maintenance of ecosystem services and thus reduce the dependence on extractive and unsustainable forest use.
- In general reducing pressure on forests by supporting alternative income sources, making current income sources more profitable (improving the value chain) and providing alternative sources of energy

- Increasing forest resilience and thus its carbon retention and sequestration potential through rehabilitation measures such as enrichtment planting, reduction of grazing and use of well-adapted tree species and high quality seedlings.
-

REDD+ implementation framework

In this section, the R-PP provides details on the following key REDD+ components:

- A description of REDD+ activities to be implemented as part of envisaged projects under the FIP/IP.
- The design and process of establishing an investment and benefit-sharing plan. A simplified approach to carbon rights is suggested, where the right to emission reductions is ceded to the government in return for upfront investments and ex-post results-based payments as defined by an investment and benefit sharing plan.
- The design of a REDD+ registry, to transparently provide access to information on emission reduction performance, payment transfers and eventually sale of emission reductions.
- The design of a REDD+ financing instrument and its piloting under an envisaged project under the FIP/IP.
- How to address capacity building during the REDD+ Readiness process

Safeguards

The working group on Safeguards, supported by the CN and where necessary external consultant support, will initiate a national process which ultimately leads to the definition of a national set of social and environmental safeguards in line with the standards of the UN-REDD Program and the FCPF. The process comprises 1) Sensibilization of all stakeholders towards the need for good safeguards, 2) Identification of social and environmental risks related to REDD+ implementation, 3) carrying out a national process of formulating and adopting a national set of safeguards, 4) developing and putting in place a safeguards information system as part of the MRV system and 5) ensuring that REDD+ activities are implemented following the principles of free, prior and informed consent.

Reference Emission Level and MRV

Tunisia will aim to account for all five REDD+ activities. Accounting for forest degradation is considered to be very important, as the latter is likely to be the principal source of forest-related emissions. For deforestation, the REL and MRV will be based on a methodology and system recently introduced by FAO (Collect Earth), which makes use of sampling technique and freely available satellite imagery as well as online-databases to produce activitiy data. Historical data on deforestation over the last 10-15 years will be used to calculate either an historical average or develop a deforestation projection.

For monitoring forest degradation, a seperate sample plot based ground monitoring system will be established. Data from the previous forest inventories will be used to estimate a REL for forest degradation.

Based on the current forest definitions, a new forest definition will be developed.

Emission factors will be derived through analysis of previous forest inventories. If necessary, additional field research will be carried out.

Tunisia will account for and report on all principal GHG (CO_2, CH_4, N_2O) and all major carbon pools except harvested wood products (considered to be insignificant).

The forest inventory unit at the Department of Forestry will be responsible for operating the MRV system and will support the working group on REL and MRV to develop both a REL and the MRV system with the help of additional technical support.

The MRV system will - at a conceptual and pilot stage - also include 1) monitoring of performance of individual REDD+ activities and 2) monitoring of non-carbon benefits.

Abbreviations and Acronyms used

A/R	Aforestation / Reforestation
AFOLU	Agriculture, Forestry and Other Land Use
AGB	Above-ground biomass
ARP	Assembly of the Representatives of the People
BGB	Below-ground biomass
CC	Climate change
DOM	Dead organic matter (including deadwood and litter)
UNFCCC	United Nations Framework Convention on Climate Change
CDM	Clean Development Mechanism
CRDA	Commissariats Régionaux de Développement Agricole
ERPD	Emission Reduction Program Document
ESMF	Environmental and Social Management Framework (CGES)
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Programme
FPIC	Free, Prior and Informed Consent
GDA	*Groupement de Développement Agricole* (agricultural development groups)
GFOI	Global Forest Observations Initiative
GHG	Greenhouse gas
HWP	Harvested Wood Products pool
JORT	Official Journal of The Republic of Tunisia (J*ournal Officiel de la République Tunisienne*)
INDC	Intended Nationally Determined Contribution:
IPCC	Intergovernmental Panel on Climate Change
MARHP	Ministry of Agriculture, Waters and Fisheries (*Ministère de l'Agriculture, des Ressources Hydrauliques et de la Pêche)*
MEDD	Ministry of Environment and Sustainable Development
MRV	Measurement, Reporting and Verification System
ODESYPANO	Office de Développement Sylvo-Pastoral du Nord-ouest
PME	Program Monitoring and Evaluation
QA/QC	Quality Assurance and Quality Control
REDD	Reducing Emissions from Avoided Deforestation and Forest Degradation
RL/REL	Reference Level / Reference Emission Level
SESA	Strategic Environmental and Social Assessment

ToR	Terms of Reference
UN-REDD	UN-REDD Programme
PES	Payment for environmental services
REDD	Reduced Emissions from Deforestation and Degradation
REDD+	Reduced Emissions from Deforestation and Degradation, including biodiversy protection, sustainable forest management and increase in the forest carbon stocks
REL	Reference Emissions Level
RL/REL	Reference emission levels and forest reference levels
R-PP	REDD Readiness Preparation Proposal
SIS	Safeguard and Information System
SOC	Soil Organic Carbon
USD	United States Dollar
WG	Working Group

Introduction

Potential and significance of REDD+ for Tunisia

1. Tunisia presents a very different context compared to the countries who generally decide to enter into the REDD+process: its forest area is relatively small and based on currently available data, the net forest cover seems to be increasing. In addition, Mediterranean forests are relatively poor in biomass (compared to tropical rainforests, the ecosystem usually covered by REDD+). The emission and removal potential is therefore low and the costs of implementation of REDD+ would exceed the purely financial benefits.

2. From the data currently available (mainly the 2010 national GHG inventory), cumulative emissions due to deforestation and degradation are estimated at between 3.5 and 4.5 million tCO_2. There is however a large uncertainty related to this estimate. A significant emissions decrease by 25% with a carbon price of $ 5 / tCO_2, would generate revenue of about 5 million $. Furthermore, Tunisia has already implemented a national program of afforestation / reforestation for about 20 years: it would therefore need to make additional efforts to benefit from emission reductions from the afforestation/ reforestation activities.

3. The economic viability issue was studied for most of the main REDD+ activities in Tunisia, in a recent study by Le Crom et al. (2014). This study shows that:

   - The cost of reducing forest fires would amount to $320 / tCO_2
   - The cost of the establishment of forest plantations (assuming revenues over the long term related to the sale of wood) would be between 4.5 and $22 / tCO_2.
   - The cost for a reduction in forest grazing would be between 19 and $52 / tCO_2

4. With a carbon price of $ 5 / tCO_2 - which is the price currently offered by the FCPF Carbon Fund in most of the pilot countries - none of the above activities would be economically viable. This means that if Tunisia wants to take economic advantage of REDD+ in the long term, the price of carbon should be higher or the co-benefits (non-carbon benefits) should be particularly important. It is this second point that Tunisia wishes to capitalize on.

5. A recent study conducted by the DGF, GIZ and FAO (2012) highlighted the total economic value of forests. It demonstrated that forests provide many goods and services to the Tunisian population, particularly to the poor rural populations living in or near forested areas. Goods and services that were identified are as follows:

   - Sawnwood and firewood;
   - Nontimber forest products;
   - Forage Production;
   - Hunting;
   - Recreation;
   - Contribution to the reduction of erosion;
   - Impact on water resources and their quality;
   - Carbon Sequestration;
   - Contribution to biodiversity.

6. According to this study, carbon-related revenues constitute only 5% of the total economic value of the goods and services of the forest. In April 2014, Tunisia made a submission to the UNFCCC on the importance of REDD+ benefits not associated with carbon (or co-benefits).

7. This submission is based on the ministerial declaration of Tlemcen[69], indicating the need to [...] adapt and strengthen existing funding mechanisms and create innovative funding mechanisms to support the implementation of policies and programmes [...] in order to ensure the proper management of forest ecosystems and other wooded Mediterranean areas.

8. Tunisia would thereby wish to stress the need to broaden REDD+ financing towards a better recognition - also in financial terms - of co-benefits, which fits into the strategic framework defined for REDD+ in 2013 at the Warsaw climate conference (paragraph 22 of decision 9 / COP 19).

9. To this end, Tunisia plans to complete, quantify and monitor the co-benefits resulting from the REDD+ activities through its MRV system, in the hope that these co-benefits will be officially recognized and financially valued once it enters the final stage of payments for results.

The RPP: a roadmap to the REDD+ implementation

10. Achieving REDD+ Readiness is the first step towards REDD+ implementation. REDD+ Readiness is achieved through a process during which the institutional, regulatory, technical and other arrangements for REDD+ are defined and put in place.

11. The process must be inclusive and transparent.This is achieved by providing stakeholders timely access to all necessary information and by broad consultations. Good communication and cooperation is key for an inclusive and transparent REDD+ process.

12. The R-PP is the first step on the FCPF-financed road to achieving REDD+ Readiness. In order to design a good REDD+ Readiness process, one has to know what will ultimately be required to implement REDD+. There is no ultimate REDD+ to do list, but over the last 7-8 years, many countries have started the REDD+ Readiness process and a few are close to conclusion. Based on these countries experience, in particular countries that are now submitting Emission Reduction Program Documents to the FCPF Carbon Fund, a complete picture of what needs to be established to become "ready for REDD+" can be obtained.

13. In order to add further precision to the R-PP and thus the REDD+ Readiness process in Tunisia, the authors of this R-PP have looked at examples from countries that have progressed towards REDD+ Readiness. Table 14 below provides a summary of the key institutional, regulatory, technical and process-related arrangements for achieving REDD+ Readiness. Throughout the R-PP, we will refer to these items.

Table 14: Key REDD+ Readiness arrangements

[69] *http://www.fao.org/forestry/36633-07b6aae78da89e1cd5f29e5f327bb0af7.pdf*

KEY ASSESSMENTS	INSTITUTIONAL	REGULATORY	TECHNICAL	PROCESS
Assessment of drivers of Def./Deg	Management unit for REDD+ readiness process(Temporary)	REDD+ strategy	Reference emission level	Communication and information-sharing platform (website)
Forest governance assessment	Permanent REDD+ program management unit at national level	(Forest) carbon rights regulation	Forest carbon monitoring, reporting and verification system (MRV)	Inclusive consultation process
Capacity building needs assessment	National level technical unit to operate the MRV system, SIS and REDD+ registry	Benefit sharing plan and	Safeguard information system (SIS)	Capacity building
Strategic Environmental and Social assessment	National level financial unit to operate the financial system	Feedback and grievance redress mechanism	REDD+ registry and buffer	
Leakage assessment	Governorate level REDD+ program management units		Financial system (fund, accounts, operating procedures, etc.) to distribute REDD+ investments and performance-based payments	
Non-permanence risk assessment	Governorate technical level units to support implementation of REDD+ mitigation activities			

14. Taking into account on the one hand what is required for REDD+ (see Table 14) and on the other hand the limited benefits that Tunisia stands to gain from REDD+ (see section above) when payments would be based only on carbon emission reductions, Tunisia is proposing a more streamlined REDD+ process which is directly reflected in this R-PP.

15. Overall, it is suggested to as closely as possible align the REDD+ Readiness process with the planning and roll-out of the Forest Investment Programme. Usually, the FIP marks the second phase of the REDD+ process (investment into REDD+ activities) and thus comes after the Readiness phase (R-PP & R-Package) has been concluded. With the FIP starting at the same time as the Readiness process, the FIP is already setting the scene for implementing different REDD+ related activities, be it institutional reform, revision of or amendments to legislation, capacity building or concrete mitigation activities such as reforestation, forest protection, agroforestry or improved forest management.

16. A parallel start of the FIP and the R-PP may thus be regarded as counter-intuitive, as the FIP is starting to invest prior to the establishment of the required REDD+ framework (institutional readiness set-up, consultations, safeguards, REL, MRV system, etc.). However, the parallel start of the FIP also presents an opportunity for the design of the REDD+ framework, as the implementation of concrete REDD+ activities and consequently the geographic scope and the involved institutions are clearer.

17. Consequently, with the knowledge about "what" will be implemented, "where", by "whom", and also at "what scale", allows to better design and formulate:

- The REDD+ institutional set-up to steer the Readiness process;
- The process of consultations and information sharing;
- The necessary safeguards;
- The institutions and their responsibilities to carry out required recurrent activities, such as ensuring compliance of REDD+ activities with safeguards, monitoring and reporting of emissions, operation of the registry and the grievance-redress mechanism;
- Technical components such as the Reference Emission Level, the MRV system, the registry etc.;

18. Thus the R-PP is formulated in a way to realize real synergies with the FIP in terms of institutional design, management, implementation of REDD+ activities but also funding. Concretely, the interaction between the R-PP and the FIP is expressed as follows in the R-PP:

- A closely-related management unit to avoid duplication and ensure coordination between FIP implementation and the REDD+ Readiness process;
- The FIP/IP to a large extent finances activities that will also result in forest-related emission reductions. For this, the FIP/IP will establish an implementation structure at the level of MAHRP and at the level of the CRDA. With an envisaged investment volume of near USD 150 million, the FIP/IP will be the main REDD+ programme. Consequently, the implementation structure of the FIP/IP is adopted as the principal REDD+ implementation structure for the time being;
- The FIP allows to test the applicability of a number of REDD+ requirements, notably the application of safeguards, measuring and displaying performance at the activity level, channeling performance-based payments to individual actors and a grievance redress mechanism among other things;
- In particular, one of the envisaged projects (n°2) under the the FIP/IP will serve to pilot a finance mechanism related to REDD+ activities;
- The national MRV unit and the FIP projects will work closely together to ensure consistency of emission reductions measurements from project to country scale country. Where possible, the national MRV unit will measure emission reductions (and this performance) over larger areas;
- The FIP/IP contributes to the REDD+ Readiness process through the funding of REDD+ related capacity building.

19. Figure 8 below illustrates the interaction of the R-PP and FIP/IP during the REDD+ process.

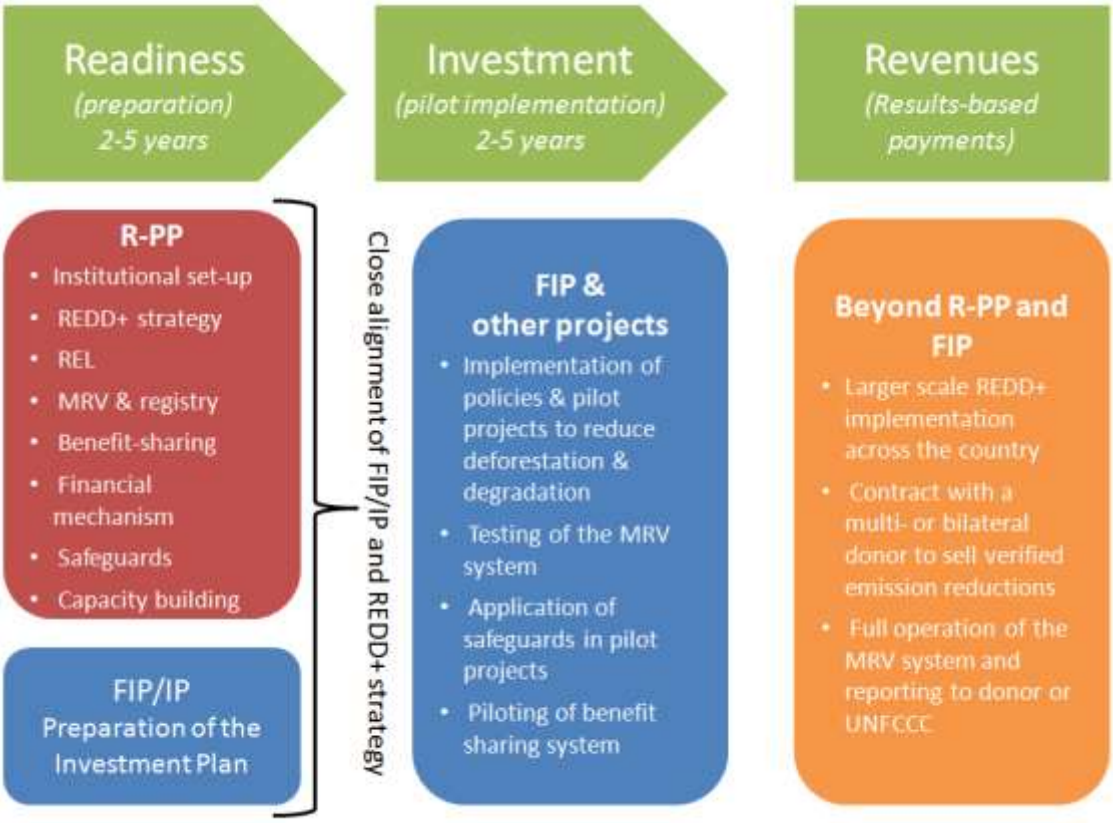


Figure 8: Interaction of R-PP and FIP/IP along the REDD+ process

Component 1. Organize and Consult

1.a. National Readiness Management Arrangements

1.a.1 Institutional set-up

20. The National Directorate of Forests (Direction National des Forêts; DGF), with support from the UN-REDD Programme, has commissioned several studies to advance the national REDD+ readiness process. One of them (Chtioui 2016) has proposed an institutional arrangement for managing the REDD+ process in Tunisia. A revised version of this proposal is presented in Figure 9. The revised institutional concept has been aligned to the extent possible with the institutional set-up of the Forest Investment Program.

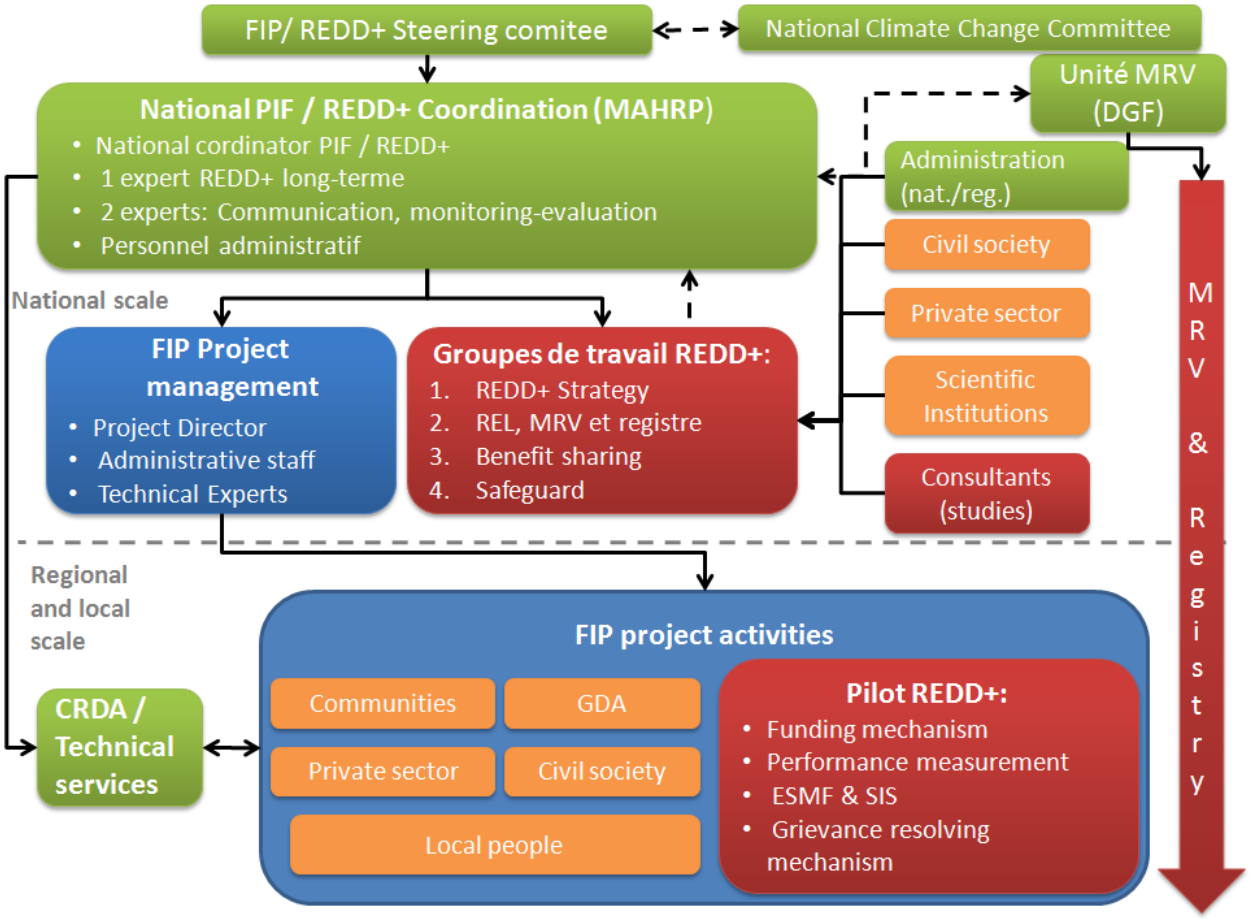


Figure 9: Revised institutional set-up for the Readiness process

National Climate Change Committee

21. The National Climate Change Committee, is placed within the MEDD, but plays the role of an interdepartmental coordinating Committee. Its current work objective must be extended to now include:

- Align the REDD+ process with the country's climate change (CC) agenda
- Align REDD+ with all other UNFCCC work that may be affected (such as national GHG inventory, national communications, NAMAs)
- Contribute to the REDD+ process with regard to high-level guidelines and policy decisions

- Manage intersectoral conflicts (if any)
- Represent the REDD+ legitimacy at the highest level

FIP / REDD+ steering comitee

22. Pursuant to the operational guidelines of the PIF, the implementation of the Tunisia PI/PIF will be coordinated by a multi-stakeholder and multi-sectoral Steering Committee. A proposal of ministerial decision for the set up of this Committee is currently underway at the MAHRP. The Committee shall consist of 20 members of the central and regional administration services, of civil society, the private sector and local populations (GDA). In addition to the monitoring of the development of FIP/IP, this Steering Committee will be responsible for monitoring the financing and the implementation of the FIP/IP investment projects, as well as their evaluation. The IP/FIP steering comity will work closely with the National Climate Change Committee.

23. Given its multi-stakeholder character, the need for a close collaboration between the REDD+ process and the FIP/IP and to avoid duplication, the FIP/IP steering committee will at the same time act as a steering comittee for the national REDD+ process.

National FIP / REDD+ Coordination

24. The operational coordination of the FIP and the REDD+ process are organized side-by-side though a joint body, the National Coordination FIP / REDD+ (CN).

25. The CN consists of:

- One senior coordinator (rank of director general). For the implementation of the REDD+ process, the coordinator will be supported through a long-term senior consultant;
- Two technical experts for communication and program monitoring;
- Administrative staff to operate a secretariat.

26. The national REDD+ coordination shall be placed under the supervision of the MARHP. It will be the REDD+ management and coordination body and will be headed by a national coordinator appointed for that purpose. The National Coordinator will be supported by an international long-term senior REDD+ expert. Its structure will include a Technical Secretariat, which will be in charge of day-to-day management, coordination and the implementation management of the REDD+ process. In the following, only the role of the CN with regard to the REDD+ process is described. For a description of its role for the FIP/IP, please see the FIP/IP document.

27. The CN is responsible for organizing and managing the REDD+ process. Effectively this means that it will e.g.:

- Kick-off the constitution of the working groups, set their respective terms of reference and tasks for their work, oversee and facilitate their work, provide a budget for meetings and hiring of experts where needed, etc.;
- Coordinate with other government bodies to ensure that work undertaken for REDD+ implementation is aligned or supports the work of other relevant government bodies. One example is aligning the REDD+ MRV system, the national forest monitoring system and inventory and the national GHG inventory so they are consistent in terms of data and methods and support or build on each other;
- Coordinate with the FIP/IP to ensure that certain REDD+ components are piloted in the new FIP/IP projects, e.g. a "pay for performance" mechanism;
- Liaise with UN-REDD and/or the FCPF and the other donor countries to implement REDD+ in accordance with the respective guidelines.

- Act as a focal and contact point for questions, feedback and conflicts related to REDD+. At the same time, the CN will ensure that information about REDD+ and the REDD+ process is communicated broadly and regularly to all relevant parties. For this, the CN will employ a communications expert (jointly with the FIP/IP) who will maintain a website, frequently publish a newsletter, respond to questions and feedback and also act as an initial contact point for conflicts. The CN will establish a process for mediating and resolving conflicts internally before they may be taken to the legal system. The CN will also hold frequent meetings with all key stakeholders to inform about the progress of the REDD process.
- Ensure alignment of the REDD+ process and the FIP/IP.

28. The CN will have decision-making power with regard to the REDD+ process and its design in Tunisia. This means that it can e.g. take a decision on which REL will be chosen, how the MRV system should look like, etc. The scope of its decision making power will be defined with its establishment. Some decision as e.g. the REDD+ strategy will require higher authority and many decision will require formal consultation and approval by other departments within MAHRP.

29. Technical work on REDD+ will be advanced through four thematic and technical groups. They are in charge respectively (i) REDD+ strategy (ii) REL, MRV and registry, (iii) benefit sharing, (iv) safeguards.

30. The working groups will consist of representatives from the government (agencies related to the topic), civil society and NGO, the private sector and research & education. The working groups will work along the terms of reference set by the CN. They will elect a chairmen and vice-chairmen and will meet frequently to work on the tasks set by the CN. Protocols from each meeting will be made public on the CN website. Each working group will have an annual budet for meetings and consultation of experts. It is the overall objective of the working groups to advance on its assigned topic and bring it to successful conlusion. Effectively this means that e.g. the working group on the national REDD+ strategy organizes and manages together with CN-REDD the process of developing the national REDD+ strategy until it is validated and approved.

31. The workload of the different working groups differs with their respective topics. As such, the timeline and budget for each working group may also differ. Further, the working groups may be supported by consultants for specific tasks, e.g. for carrying out an analysis or study.

32. Finally, the CN will work and coordinate very closely with the forest inventory division at DGF, which will be responsible for operating the national MRV system for REDD+. This division has already received training and the necessary hardware and software infrastructure from a FAO-led project to operate the MRV system. This division will thus also play a key role in the working group on REL, MRV and registry.

Institutional set-up for REDD+ implementation at the regional and local level

33. Given the limited potential of REDD+ and the fact that Tunisia stands at the beginning of the REDD+ Readiness phase, the country's priority is to first initiate all required national-scale processes such as the development of a REDD+ strategy, a benefit-sharing plan, REL & MRV system and safeguards before moving to regional or local implementation.

34. Consequently, at this stage no specific additional institutional arrangements are planned at regional or local level. This is to underline that at the level of activity implementation Tunisia will rely on its existing regional and local administrative structures (CRDA, AF, GDA, CL) as well as private forest owners and companies as well as NGOs (see

35. However, these regional and local institutions will receive technical and financial support for the implementation of REDD+ activities as part of projects that will be implemented under the FIP/IP (see below). A budget for training and equipment (where needed) for regional and local administrations will be included in the project budgets under the FIP/IP.

36. In addition, the regional or local administrations may set-up or appoint task forces or coordinators according to necessity.

37. However, the implementation of new projects under the FIP provides the opportunity to pilot a number of REDD+ related activities such as a "pay for performance mechanism", a monitoring and compliance system to ensure that safeguards are respected during the implementation of REDD+ activities, etc).

38. As a result, the institutional arrangements of the forest investment programme and its new projects will equally serve to pilot selected REDD+ activities at the regional or local level.

39. Figure 10 below provides and example of how REDD+ activities would be implemented at the regional and local level on e.g. communcal land.

40. The project management unit together with the CRDA would initiate and steer a detailed project planning process at the regional/local level.

41. The process would seek to identify the specific REDD+ activities and areas hold consultations with the communities and local people owning the land or land use rights. This consultation process would be subject to the principles of free, prior and informed consent. This means that communities and local people are free to give or withdraw their consent to this project and prior to making a decision have access to all relevant information so they may judge the consequences of committing to this project.

42. Other relevant stakeholders are invited to join this planning process and may also be asked to facilitate it (e.g. NGO)

43. Provided that communities and local people consent to the project design, a detailed project plan and implementation arrangements would be developed by the project management team. This plan would again be subject to review by stakeholders and communities.

44. Finally, REDD+ activities such as reforestation of degraded lands or protection of forest succession from grazing would be implemented by communities / local people with the financial support from the project and technical support from e.g. the service technique, the GDA, NGOs or consultants.

45. Where needed, the project would also provide training and equipment to technical implementation partners such as the service rechnique, the GDA or NGOs.

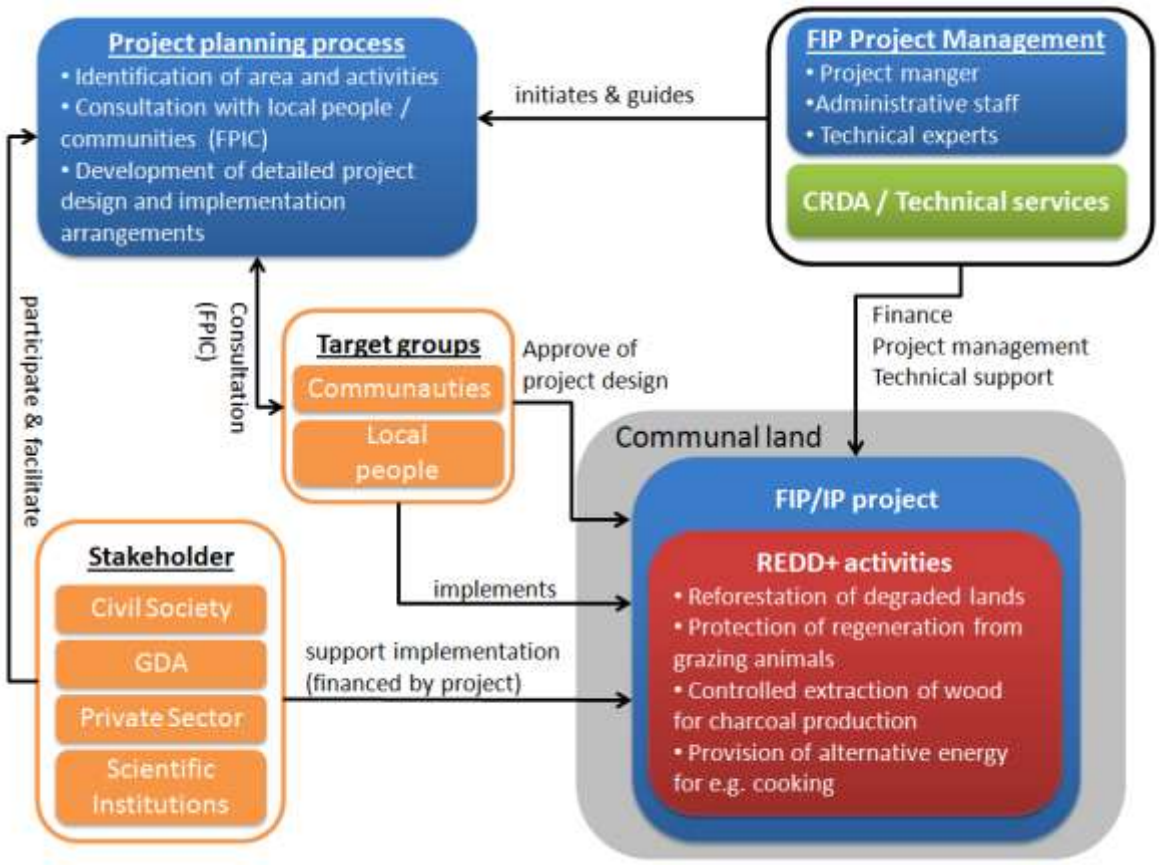


Figure 10: Planning & implementation of REDD+ activities at the regional / local level as a part of projects under the FIP/IP

46. Finally, refraining at this stage from creating additional institutional structures at regional and local level does not mean that participants from regional and local governments and administrations cannot participate in the national REDD+ process. On the contrary, it is encouraged that regional and local actors participate in the REDD+ process, first and foremost through the working groups.

1.a.2 Work process towards achieving REDD+ Readiness

47. The national coordination (CN) is the principal body for organizing the work to achieve REDD+ readiness. CN will have decision making power, the scope of which will need to be defined. CN will coordinate and oversee the REDD+ readiness activities carried out by government agencies and will also be responsible for contracting third parties to carry out additional work.

48. The different REDD+ topics will progress through four working groups (see § 29 à 31). These working groups are open to representatives of all stakeholder groups (government agencies, NGOs, private sector, science/education, regional representatives etc.) in order to ensure broad participation throughout the entire Readiness process. These working groups will constitute prior to R-PP implementation and will establish working procedures (chairing, voting, frequency of meetings etc.). In case of need, CN may also establish new or split existing working groups. The working groups do not have decision making power, but they provide recommendations (ideally based on consensus) to CN.

49. For example, the working group on REL and MRV would draft the TOR for developing a REL, irrespective of whether the work is to be done by government agencies or tendered. For this, the working groups can also invite further experts to contribute. During the development of the REL, the working group will be regularly consulted and informed and it will review the products or reports provided to CN. CN can also

ask qualified members of these working groups to directly accompany the work that is being carried out by a third party.

50. In other cases, working groups may be asked to directly produce a deliverable, as. a draft carbon rights regulation (if the working group features this expertise). As such, the working groups provide CN with expertise and advice, they prepare decisions, act as reviewers or quality managers and so actively contribute to developing REDD+. Through the active participation of all stakeholders in these working groups, it is ensured that overall REDD+ is designed in as much a societal consensus as possible.

51. On top of that, CN will adopt a very transparent communication and information sharing policy. For this purpose, CN will maintain a website to:

- announce (working group) meetings well in advance and share the protocols of these meetings
- post documents for stakeholder and public comment
- announce decisions and news
- make available REDD+ related resources

52. Further, a frequent newsletter will be established to which stakeholders can subscribe in order to receive frequent updates.

53. As stated above, all major design documents will be made publically available for comment prior to finalizing them. In addition, prior to making a major decision, CN will host validation meetings / workshops where representatives from all major stakeholder groups will be invited to discuss and validate the REDD+ element concerned (REL, MRV system, benefit-sharing plan, carbon rights regulation, registry, REDD+ fund etc.). CN-REDD will establish clear working procedures, with the aim of reaching an agreement through consensus. However, if consensus cannot be achieved, then a majority or 2/3 vote will be used.

54. In order to be able to settle serious disputes and conflicts, CN-REDD will establish a feedback and grievance redress mechanism. This mechanism will allow stakeholder groups to voice feedback and report a conflict related to a process or result of the REDD+ readiness phase. Its function is to provide an organized and fair process for settling disputes internally, before such disputes are taken to court.The detailed design of this feedback and grievance redress mechanism needs to be defined early on in the R-PP implementation phase. At this stage, it is envisaged to rely on mediation through a neutral third party to settle disputes.

Table 15: Summary of National Readiness Management Arrangements Activities and Budget (Component 1a)

Main Activity	Sub-Activity	Estimated Cost (in thousands US$)				
		2017	2018	2019	2020	Total
Operation of CN	Chief technical advisor (international consultant)	120	120	120	120	**480**
	Monitoring evaluation Expert	Financed by the FIP				**0**
	Communication Expert	Financed by the FIP				**0**
	IT Specialist	Financed by the FIP				**0**
	Secretary / accountant	Financed by the FIP				
	Operational budget (office, travel, small studies, etc.)	Financed by the FIP				**0**
Working groups	Travel, meetings	100	100	100	100	**400**

Total	**220**	**220**	**220**	**220**	**880**
Domestic Government	-	-	-	-	**-**
UN-REDD	**220**	**220**	**220**	**220**	**880**

1.b. Information Sharing and Early Dialogue with Stakeholder

1.b.1 Identification of REDD+ actors & stakeholders

55. An analysis by Chtioui (2016) has provided the following actor and stakeholder overview map Table 16 below provide a short summary of the REDD+ actor and stakeholder analysis comprises a description the interest and expectations of the actors; their perceived importance and influence on REDD+ success; capacities, resources and skills; and their stakes in the REDD+ process.

Table 16: Preliminary mapping results of the REDD+ actors & stakeholders (from Chtioui, 2016)

PLAYER	OBJECTIVE	IMPORTANCE AND INFLUENCE TOWARDS REDD+	CAPACITIES AND MODE OF PARTICIPATION
Organisations des Nations Unies (FAO, PNUD)	Implementation of the the UN-REDD progamme	High (direct influence on political decisions)	Suivi et appui technique, financement
Ministère des Finances (MDF)	Development of the State budget	Average (influence on benefit sharing)	Gestion budgétaire et des fonds
Ministère du Développement, de l'Investissement et de la Coopération Internationale (MDICI)	Regional development and coordination with funding orgnisations	Average (influence on development policies)	Coordination avec les bailleurs de fond
Ministère de l'Environnement et du Développement Durable (MEDD)	Cross-cutting coordination on climate change (biodiversity, desertification adaptation), effective implementation of the UNFCCC	High (influence on the policies and strategiese linked to climate change)	Expertise, negociation and communication
Ministère de l'Agriculture, des Ressources Hydrauliques et de la Pêche (MARHP)	Protection of natural resources	Very high (political support, high legitimacy)	Consultation, coordination, monitoring, fundraising, negociations, institutional communication
Task Force Changement Climatique (TF-CC)	Consultation on issues related to climate change, strengthening of the contribution of the MARHP in climate negotiations	High (political support)	Coordination, institutional communication, lobbying, information sharing, negociation, fundraising
Direction Générale des Forêts (DGF)	Protection and sustainable management of forests, fight against desertification	Very high (strategic support and overall leadership)	In charge of implementation, presence of the UN REDD focal point
Office de l'élevage et de pâturage (OEP)	Development of courses, demarcation of pastoral lands	High (influence on pasture course management)	Management of rangelands, reservation
Office de Développement Sylvo-Pastoral du Nord-ouest (ODESYPANO)	Integrated approach in forest and pastoral development	Average (sylvo-pastoral management in the framework of pilot projects)	Field experience
Direction Générale de l'Aménagement et de la Conservation des Terres Agricoles (DGACTA), Direction Générale des Etudes et du Développement Agricole (DGEDA), Direction Générale de la Production Agricole (DGPA)	Protection and promotion of the responsible exploitation of natural resources in the field of agriculture, soil protection	Average (influence on strategic development decisions)	Consultation on natural resources protection in the framework of policies and strategies
Commissariats Régionaux de Développement Agricole (CRDA)	Decentralization (representation of the MARHP at the regional level), local development	Average (influence on the structures and process organisation)	Administrative management, intersectoral coordination at regional scale
Arrondissements Forêts (AF)	Implementation of reforestation and desertification combating programs and projects; development of the sylvo-pastoral resources	High (implementation in the field)	In charge of implementation
Collectivités locales (CL)	Territorial governance	Average (influence on local politics and the territorial dynamics)	Orientation, monitoring of resources
Conseil de gestion (CG)	Settlement of disputes on collective land	Average (in connection with conflicts for rangeland management)	Relation with owners
Conseil rural (CR)	Decentralization and local governance	Average	Consultation

Player	Objective	Importance and influence towards REDD+	Capacities and Mode of Participation
Groupements de Développement Agricole (GDA)	Natural forest resource management	High (participation à la mise en œuvre)	Implementation, awarenessraising and information
Société civile (ONG)	General interest and common good	High (guarantee of the fairness of the process and the involvement of people in governance)	Implementation, support, coordination, awarenessraising
Populations forestières (PF)	Improvement of the socio-economic situation of forest peoples	High (direct beneficiaries, involvement essential to the success of the process)	Connaissance du territoire, mise en œuvre, participation aux prises de décisions
Propriétaires des forêts privées (PFP)	Ownership of the land	Élevée (land tenure issues)	Negociation and compromise, possible implementation
Secteur privé (SP)	Investments, harvesting of natural resources	Élevée (participation to policies and strategies)	Involvement and partnership, possible implementation
Agence Nationale pour la Maîtrise de l'Energie (ANME)	Mastery of Energy	Average (strategic challenge in the mitigation and adaptation to climate change)	Experience, expertise for REL, MRV and the GHG inventory
Agence de protection et d'aménagement du littoral (APAL)	Protection of the shore and soils	Quite high	Consultation and technical capacities
Conservation de la Propriété Foncière (CPF)	Registered land conservation	Average (creation of land titles and registration of land operations on the land title)	Information on the state of the deeds
Domaines de l'Etat et des affaires foncières (DEAF)	Clearance of land titles	Quite high (clarification of land tenure)	Legislation
Direction générale de l'immobilier agricole (DGIA)	Land clearance of collective lands and public lands	Average (follow-up of the registration work)	Clarification of the land tenure situation
Office de la topographie et du cadastre (OTC)	Registration of landed property and cadastre	Average (restoration of the limits of the DFE, recovery of unduly occupied areas)	Digitization of existing plans, registration of forest areas
Tribunal Immobilier (TI)	Protection of the State land area	Average (application for the review and rectification of the deeds)	Land management
Direction générale du recensement des biens publics (DGRBP)	Statistical data, decentralization of information	Average (State of the land tenure situation)	Existence of an annual inventory of land
Office de développement du sud (ODS)	Socio-economic development	Average	Communication
Observatoire tunisien de l'environnement et du développement durable (OTEDD)	Promotion of sustainable developmen	Average (informations and know how for the MRV)	Information, inventory and observation, drafting of sustainable development indicators
Institut national de la recherche en génie rural, des eaux et des forêts (INRGREF)	Promotion and development of natural resources	Quite high	Data and technical knowledgeon the state of soils, water and forests
Institut des régions arides (IRA)	Research and development on dryland	Average (participation in decisions to combat silting)	Research and development inthe framework of pilot projects
Institut de recherches et de l'enseignement supérieur agricole (IRESA)	Contribution to the development of the research on climate chang	Average	Research and development on pilot areas for REDD+ projects

56. Players such as: OI, DGF, MEDD, MDICI, MDF, DEEAF, OTC, ANME, APAL, AF, INRGREEF, TI and TF are key stakeholders throughout the REDD+ process. Players as AF, PFP, SP, PF, ONG, OEP and GDA have clearly an average influence in the current context (which can be explained by the lack of capacity) but a high potential for REDD+,. Therefore, it can be concluded that the AF is a key player but just needs to be strengthened in its capacity and be provided with technical means. Players such as ODS and ODYSEPANO are potential players and they must be involved and given more responsabilities. For GDAs, the FP and the

OEP are key players but they do not have the capacity and authority, and they therefore need to receive support for an effective involvement. With regard to the Union, PFP and PS, their interests may conflict with the REDD+ objectives so this impact must be mitigated and they must be involved in the REDD+ process. The CRDA is a vital implementation player. . IRA, INRGREEF and IRESA are cautious, they need to be informed and involved to share knowledge, although in the obligations of REDD+, these institutions will play an important role in supplying the future REDD+ Committee on research on ecosystems.

Table 17: Summary categorization of REDD+ players

ACTORS	ENVISAGED INVOLVMENT
MARHP, DGF, MEDD, DGACTA, MDICI, MDF, DEAF, TF-CC,	Key governmental national institutions for the REDD+ process progress
NGO (WWF, ATLAS, APEL, etc.), Private Sector	Other key national players (contribution and observations of the national REDD+ process)
CRDA, DS, CL, AF, PFP, Private Sector, GDA, NGO, ODESYPANO	Regional / Local players for the REDD+ projets implementation +
OTEDD, ANME, APAL, CPF, OTC, IRA, INRGREF, IRESA, DGEDA,	Actors who can play a role in the REDD+ process (knowledge, resources, information sharing)

1.b.2 Description of the pre-consultation process

57. The pre-consultation process can be dividied into 2 phases.

- Phase 1: Consultation process carried out during the REDD+ preparation process prior to R-PP development
- Phase 2: Consultation process carried out during the R-PP development

Phase 1 pre-consultation process before the R-PP writing

58. The DGF, with support from the UN-REDD Programme, has commissioned 3 studies to advance the REDD+ Readiness process in Tunisia. The studies comprise the following topics:

- Forest and pastoral land tenure rights and the implications for REDD+
- Institutional arrangements for REDD+
- MRV system for REDD+

59. During the execution of these studies, many institutions and individuals were consulted (see Annex 1). The findings of these studies were validated in a national level workshop in March 2016. See Annex 2 for a list of participants of this workshop.

Phase 2 pre-consultation process during the R-PP drafting

60. FRMi has supported the national REDD+ focal point and its team in the preparation of the R-PP. During the preparation of the R-PP, the following organizations and individuals consulted are presented in Annex 3.

61. In a later stage of R-PP development, FRMi supported the national REDD+ focal point in carrying out a national level multi-stakeholder workshop to present and discuss the R-PP and receive feedback from stakeholders.

62. The process and results of this workshop, as well as how results were integrated into the R-PP, are described in the following subsection.

63. Further, during a joint mission of the World Bank, the African Development Bank, the European Bank for Reconstruction and Development and the Consortium FRMi - AED Consult - Apex Consult in June 2016, a previous version of the R-PP was presented to the technical and financial partners. Feedback from these stakeholders was used to improve a previous version of the R-PP.

National multi-stakeholder consultation workshop

64. The government of Tunisia, represented through the Direction General de Foret (focal point for REDD+), and supported by the WB and FRMi, organized a national consultation workshop from September 6.8 in Tunis for both the R-PP and the FIP. A joint consultation workshop was carried out to underline the close interaction of the R-PP/ REDD+ process and the FIP.

65. Consultations on the R-PP were carried out on September 6. The agenda of the workshop as well as the list of participants can be found in Annex 4.

66. In preparation for the workshop, all participants received the draft versions of the R-PP and FIP.

67. A key finding from the previous consultations was that the concept and process of REDD+ was not well known. As such, the presentation of the R-PP was preceded by a presentation on climate change and REDD+ in general, held by FRMi. The presentation lasted approx. 60 minutes and was followed by approx. 60 min. of comments and questions. The presentation triggered a number of comments and questions, including:

- The on-average low above-ground biomass in Tunisian forests and thus the importance of including soil carbon,
- The importance of including co-benefits in the design of the the national REDD+ process (repeatedly mentioned),
- A critical elaboration on REDD+ offsetting,
- How REL work in detail
- The need for capacity building

68. In response to these comments and questions it was clarified that:

- Soil carbon is included as a carbon pool
- the R-PP is making clear that Tunisia may only profit significantly from REDD+ through a valuation of co-benefits.
- Emission reductions achieved under REDD+ do not need to be sold but can also be used to meet national emission reduction targets as e.g. stated in Tunisia's INDC
- The concept of a REL and how performance is measured and financially rewarded was elaborated in more detail
- Capacity building for REDD+ is included in the budget of the FIP

69. The REDD+ presentation was followed by the R-PP presentation of approx. 60 min. which again was followed by a session for questions and comments. As many general REDD+ related questions had already been clarified, there were fewer comments and questions on the R-PP. These were:

- Why elaborate a R-PP and not directly a REDD+ strategy?
- Implementation of the R-PP / REDD+ involves a lot of forest related data that is currently not available. As a result, national research institutions can and should play a major role during REDD+ implementation.
- ODESYPANO should be included in the actor map
- What is the degree of population/stakeholders involvement within the REDD+ process
- How the REDD+ will deal with the land tenure issues;

70. In response to these comments and questions it was clarified that:

- The R-PP is a roadmap for achieving REDD+ readiness which encompasses a national REDD+ strategy. R-PP implementation and thus REDD+ Readiness involves more than the development of a REDD+ strategy.
- It was confirmed that for REDD+ implementation new data (e.g. activitiy data, emission factors, co-benefits) has to be generated and that national research institutions are explicity invited to participate in the relevant working groups under CN and that they are important resource institutions. Further, research institutions may participate in the development of specific REDD+ components (e.g. REL, EFs).
- This was a mistake in the presentation and that ODESYPANO had been included as an actor in the report.
- It was reiterated that the local population and stakeholders would participate in the REDD+ process as outlined in the R-PP, namely through the working groups, by giving feedback on important documents, by participating in validation workshops and last but not least by being involved in the project planning process (REDD+ activities) at regional and local level according to the principles of free, prior and informed consent.
- Clear land tenure facilitates implementation of REDD+ activities as the land owner or holder of use rights would usually be entitled to payments for emission reductions occuring on his/her land. Clear land tenure - though preferable - is not a necessity for REDD+ as benefits can also be allocated based upon seperate agreements. This needs a regulatory framework which needs to be established as an outcome of the benefit-sharing component as described in the R-PP.

1.c. Consultation and Participation Process

1.c.1 Consultation held during R-PP development

See section 1.b.

1.c.2 Consultation and participation plan

71. As indicated in section 1.a.2, broad and meaningful participation will be achieved through the following five procedural elements:

- Awareness raising & access to information;
- Working goups;
- Public / stakeholder commenting period on key documents;
- National and regional validation workshops;
- Feedback and grievance redress mechanism.

Awareness raising

72. In order to meaningfull participate in the REDD+ process, all relevant stakeholders need to be made aware of what REDD+ is and how the REDD+ process will be organized in Tunisia. Consultations during the R-PP development phase have shown that REDD+ is not yet a familiar concept for most players. Hence, the first national workshop organized with the stakeholders will be used to raise awareness and understanding of REDD+ processes and mechanisms. Once established, CN will initiate an awareness and information campaign that will comprise:

- Press releases and newspaper articles;
- Information events;
- Establishment of a national REDD+ process website and newsletter;
- Development of information materials (brochures, etc.).

73. Once a certain degree of awareness has been achieved, the website and newsletter will be CN's principal tools for communication. The website will contain key resource documents, serve to announce meetings, publish protocols and decision documents, provide background information on REDD+, etc.

74. Once the REDD+ intervention areas are geographically clear (See FIP/IP), awareness raising and information sharing will also occur at the regional and local level during project planning. Tunisia is committed to adhering to the principle of free, prior and informed consent.

75. FPIC implies informed, non-coercive negotiations between investors, companies or governments and local people or communities prior to the planning and implementation of REDD+ activities on lands to which they hold legal or customary titles or use rights. This principle means that those who wish to use these lands for REDD+ activities must enter into negotiations with the land owners or users. It is the local people or communities who have the right to decide whether they will agree to the project or not once they have a full and accurate understanding of the implications of the project on them and their land.

Working groups

76. For the implementation of the R-PP workplan, CN-REDD will establish four thematic working groups.These working groups cover the core design elements of REDD+ and – at this stage - are:

- REDD+ strategy
- REL & MRV and registry
- benefit sharing
- social and environmental safeguards

77. It is through these working groups – and their cooperation with the relevant government departments - that REDD+ will progress in Tunisia. Even though these working groups have no decision making power, they provide information and advice to CN that is in charge of shaping the design of REDD+. These working groups are open to representatives of all stakeholders who are provided with an opportunitiy to actively engage in designing the REDD+ process and mechanism in Tunisia. It is envisaged that these working groups will to the extent possible work through consensus and as such it is ensure that the REDD+ design will largely reflect a societal consensus.

Public commenting period

78. Key design documents for the national REDD+ process will be subject to a so-called commenting period to ensure public participation beyond the working groups. The public commenting period will be announced the documents will be made available through the CN website and newsletter. Depending on the document, a commenting period of 2-4 weeks will be envisaged to allow stakeholders to respond. Comments received during the public commenting period will be compiled by CN and passed to the respective working groups, who have to address them and provide a short report on how the comments were taken into account. These reports will also be published.

National and regional validation workshops

79. Prior to taking major decision related to the design of REDD+, CN will organize national and/or regional level validation workshops. These workshops are organized towards the end of a specific REDD+ process, e.g. the benefit sharing plan. During these workshops, all relevant information on the specific topic will be summarized and all stakeholders are provided with the opportunity to voice their final opinions, concerns, etc. At the end of the workshop, it is envisaged if possible that all participants jointly approve a particular decision text, plan, design etc. The validation workshops thus provide legitimacy to decisions taken by CN.

Feedback and grievance redress mechanism

80. The CN will establish a specific procedure for the resolution of conflicts related to the planning and the implementation of REDD+. The complaints procedure will be defined by a regulation. The feedback mechanism is already part of the process of consultation and participation described above.

81. The purpose of the grievance procedure is to resolve disputes internally through mediation, when possible. As such, this procedure is considered to be a complementary legal instrument preceding a filing of complaint to justice. The complaint mechanism provides the opportunity to resolve internally any dispute and to avoid an unnecessary conflict escalation.

82. The grievance mechanism is relevant for any problem related to the planning and implementation of REDD+. Claims may be submitted in writing to the CN at any time. However, in cases where a complaint is clearly a violation of national or international law, the CN will hand it directly to the responsible court or

will ask those who filed the complaint to enter into legal action. This will apply for example to a case of (forced) land grabbing or restriction of access to forest resources despite valid use rights.

83. We are listing here certain grievances that may potentially arise during the planning and the implementation of REDD+:

- Lack of consultation / dialogue in REDD+ (not invited to participate, or not informed of the REDD+ process in general, exclusion of a working group, etc.);
- Lack of specific information feedback about decisions made;
- Contradiction between specific REDD+ legislation and existing laws or institutional responsibilities;
- Illegal restriction to forest resources access

Procedure and support for filing a complaint

84. Any individual or legal entity may file a complaint with the NC. The NC will issue a document-type of "complaint form" downloadable on its internet site, in order to ensure that the complainant is able to provide all the necessary information. The complaint must be filed in writing.

85. The NC will confirm receipt of the document and will open a "grievance case". NC has a period of 14 days to provide an initial response to the entity or the individual who filed the complaint. The NC can then:

a. accept the grievance: in this case, the NC should set up a meeting with the parties for a first attempt at mediation. The NC may decide to involve a third party for purposes of moderation and mediation. In the case where the NC, as a legal entity, should be involved in a conflict, a third party mediation is mandatory.

b. deny the complaint providing a detailed justification: in this case, the entity or individual may still file a complaint with the court of justice.

c. transfer the case to a court or ask the entity or individual to file a complaint with the court of justice.

d. request more information about the conflict and then decide to accept, to refuse or to transfer the complaint to a court.

86. In case of a), the NC will listen to the views of each of the parties and propose then one or several options to resolve the conflict. It may also choose to reconvene the parties, request more information, invite additional (legal) experts or seek the advice of a third party.

87. The possible outcomes are:

- The mediation is successful, that is, the parties agree on one of the solutions proposed by the NC. The conflict resolution agreement will be recorded in writing, detailing the obligations of each party and the timeline to be complied with. The party that filed the complaint agrees to declare it null and void once the conditions laid down in the resolution agreement are met. If all obligations are not met as scheduled, the agreement becomes void and the complaint will be forwarded to a court.
- The conflict cannot be resolved through mediation, in this case the NC requests the the party who filed the complaint to take it to a court of justice.
- The NC realizes that the conflict goes beyond its mediation mandate and decides to pass on the case to the department of justice or a court.

88. All filed grievances, as well as all the results of mediations - except confidential information - will be published online on the NC website.

Table 18: Summary of Consultation and Participation Activities and Budget (Component 1c)

Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2017	2018	2019	2020	Total
Awareness raising	Information material	**15**	**15**	**15**	**15**	**60**
	Website	**5**	**5**	**5**	**5**	**20**
Working groups		Budget of the project included in the institutional device (1a)				**0**
Validation meetings & workshops	National level validation workshops	**0**	**60**	**60**	**30**	**150**
Total		**20**	**80**	**80**	**50**	**230**
Gouvernement						
UN-REDD		**20**	**80**	**80**	**50**	**230**

Component 2. Prepare the REDD-plus Strategy

2.a. Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance

2.a.1 Direct and indirect deforestation and forest and rangelands degradation drivers

Direct deforestation and forest and rangelands degradation drivers

89. In Tunisia, the direct deforestation and forest degradation factors are fires, clearings for agricultural or residential purposes, illicit wood gathering (including wood extraction for fuelwood and charcoal) and overgrazing.

90. Fires concern an average area of 3 000 ha since 2011 (Table 8). They can be accidental or voluntary. Mean annual values estimated for the 2000-2009 period vary from 270 to 400 ha/yr. It is however likely that the surface areas burned between 2001 and 2011 are underestimated: ongoing research work conducted by the DGF believe that the surface areas actually burned between 2001 and 2010 would rather be in the order of 13 000 ha, that is an annual surface area of 1 300 ha (DGF, 2016). The significant increase in the surface areas burned since 2011 can be explained by the outbreak of arson following the events of social protest in 2010-2011.

Table 19: Annual burned surface areas

Ground Use before Fire	Burned Surface Areas (ha) per annum[70]														
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forests	200	68	308	49	229	38	363	380	83	673	1 587	1 717	3 388	4 870	658
Maquis, garrigues	26	56	44	57	157	71	95	99	23	29	108	462	721	906	93
Herbaceous stratum	1	2	33	78	76	47	77	27	8	9	9	85	33	120	31
Residues	1	5	2	7	48	5	3	4	3	13	3	29	1	50	10
Total	**228**	**131**	**388**	**191**	**509**	**160**	**537**	**510**	**117**	**723**	**1 707**	**2 293**	**4 143**	**5 946**	**792**

Source : DGF, 2016

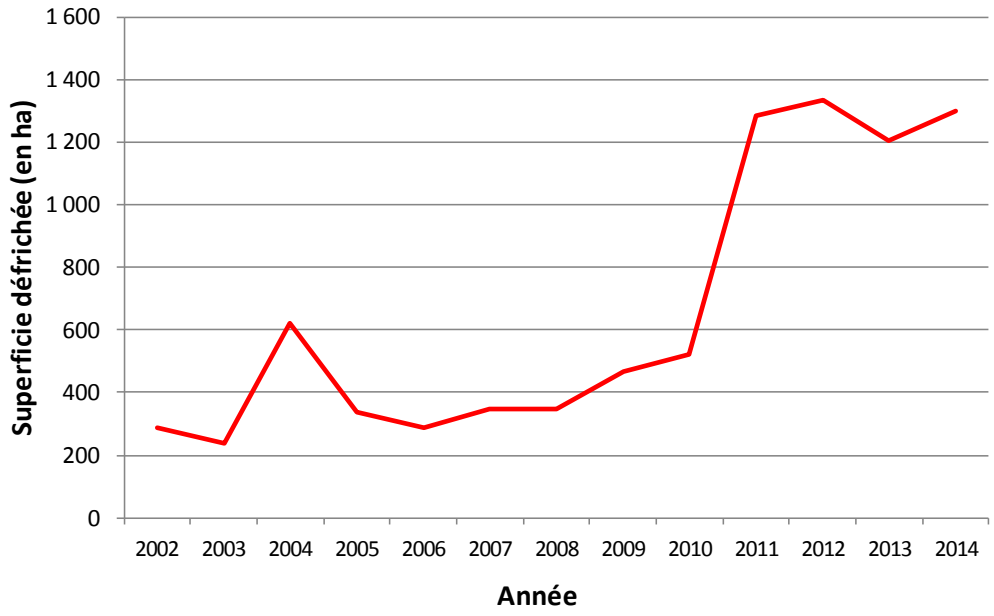
91. Depending on the nature of the burnt vegetation, fire can be considered as a factor of deforestation (in the case of total and long-term loss of forest cover) or of forest degradation. Indeed, burnt Aleppo Pine, cedar and cork oak stands will tend to regenerate naturally after two to three years (provided that they are old enough to be composed of mature trees). The forest land use is not modified and the fire will then have caused degradation only. However, species such as pine, Acacia or Eucalyptus stands do not regenerate in the absence of planting work. The fire results in this case in gross deforestation.

92. Clearings, undertaken to extend the area under cultivation (for agriculture or tree farming) or habitat, is a factor of gross deforestation, but relate only to limited areas (Figure 2), in the order of 1 000 to 1 400 ha since 2011 (from 200 to 600 ha between 2001 and 2010)[71]. As for the fires, this increase can be explained by the distrust towards the state authorities observed since the events of 2010-2011. Furthermore, clearings for residential purposes increased particularly in the coastal areas, where reforestation was

[70] *The data presented do not take into account the exceptional fires related to military manoeuvres in the governorates of El Kef and Kasserine, affecting an area of about 20,000 ha for the period 2013-2015 (DGF, 2016*

[71]. *It is to be noted that the surface areas actually cleared are probably slightly higher than the figures presented, taking into account the existence of infringements that are not recorded by the Forest Administration.*

conducted in the past by the services of the State to protect the sand dunes, due to the rise in financial value of these lands.



Source : DGF, 2016

Figure 11 : Evolution of cleared surface areas per annum since 2002

93. **Illicit wood removals** constitute a relatively important factor in the degradation of both public and private forests. They can be carried out by local peoples, for fuel wood or charcoal, or by people or companies from the private sector to produce and market sawnwood or roundwood (pallets, pulpwood). A study conducted in the governorate of Kef in 1990 showed already that the removal and consumption of firewood in rural areas exceeded the production capacity of the forests (DGACTA & FAO, 2006). Despite the importance of this phenomenon, there is to date no other data enabling to precisely quantify it.

94. **Overgrazing**, resulting in the consumption by herds of young plants, acorns and shoots of the year, is also an important factor of forest degradation. In addition to the weakening of the most sensitive individuals, this phenomenon is particularly problematic in the Tunisian Northwest cork oak forests (*suberaies*), as it causes a slowdown, and possibly a complete stop of the natural regeneration process. An important part of these stands is senescent, causing a decrease in density and productivity of stands and representing a threat to the maintenance of forest cover in the medium term. In 2007, nearly 30 000 ha of cork oak forest had a less than 50% canopy and required silvicultural regeneration operations (DGF, 2007)[72]. The rate of overgrazing of the various forest formations (including garrigue and maquis) was assessed at values between 50 and 70% (OTEDD, 2009)[73].

95. Despite the uncertainty attached to the available data, gross deforestation concerns limited areas in Tunisia. On the other hand, the forest degradation phenomenon, although reversible, seems to affect large areas. In 2000, degraded forests (scrub, scrubland and forests with very low vegetation cover) covered more than 380 000 ha, or 40% of the total Tunisian forest area (DGF & World Bank) 2015. In mountainous forest ecosystems of Northern Tunisia, the forest populations collect forage and wood in quantities above the resources regeneration capacity (DGACTA & FAO, 2006).

[72] *DGF, 2007. Étude stratégique pour le développement durable de la suberaie tunisienne (UTF/TUN/032/TUN). Analyse et synthèse des résultats des diagnostics de la suberaie (problématiques, enjeux et défis). Document de synthèse. Ministère de l'Agriculture et des Ressources Hydrauliques. FAO. Juin 2007. 19 p.*

[73] *Observatoire Tunisien de l'Environnement et du Développement Durable, 2009. Indicateurs des forêts durables. Ministère de l'Environnement et du Développement Durable - Agence Nationale de Protection de l'Environnement. 35 p.*

96. The main **direct factor of clearing and degradation of rangelands** is linked to **land use conversion,** particularly for crop and tree farming. Although these helped improve the self-sufficiency of the country for certain products (vegetables, fruits and grains, barley in particular) and farm developed on rangelands indirectly participates to livestock rearing through the provision of agricultural byproducts for cattle feeding, this situation has strongly weakened the farming systems of small ruminants (sheep and goats). This clearing phenomenon began in the 1960s in collective land status steppes with a relatively favourable climate (Central Tunisia), spread then to the arid regions such as the governorate of Médenine and Tataouine. The conversion of rangelands to olive groves and grain farming on these territories is explained by the planting of olive trees being considered as a productive use of land, allowing a private appropriation of land, which was often originally collective. According to Guillaume (2009), olive tree farmin is indeed due to peasant logic having as objectives to assert ownership, to take into account weather conditions and the long term in the constitution of the tree capital (in contrast to criteria of productivity and profitability in the short term) and the sociocultural dimension of the olive tree, which constitutes an asset and a real intergenerational link. Alfa grass where the cover is low to medium are the most threatened by land clearing.

97. The cleared grazing surface areas in 2012 were estimated to 8 600 ha (DGF & World Bank, 2015). Given the variability of the results and methodologies used in the various studies available addressing this theme, there currently is no accurate data on rangeland areas cleared annually, and the figures given must be taken with caution.

98. **Overgrazing and the over-exploitation of rangelands** are significant factors of their degradation. They affect about 2 million hectares (DGF & World Bank, 2015). Overgrazing is explained by the increase in (or stabilization) of the herd, despite the decrease in rangeland areas. For example, in southeastern Tunisia where the bulk of the rangeland is to be found, the pressure by sheep varies from 0.25 to 0.7 UO/ha/yr, while the actual capacity of the rangelands varies from 0.15 to 0.2 UO/ha/yr (Santacruz & Ouled Belgacem, 2011). The coefficient of overgrazing is particularly high: 80-91% in 2012 for the whole of the country, while it was estimated at 40 per cent in 1990 (DGF & World Bank, 2015). Rangeland forage production covered 10 to 20% of the needs in 2012-2013, while in 1990 it was 60%. The degradation through overgrazing translates into (DGACTA et al. 2011) a decrease in the rate of vegetation cover by 30-50%, a reduction of perennial species in favour of annuals and a soil degradation, resulting from the reduction of vegetation cover which increases their sensitivity to erosion (some measures consider the loss of soil in the Southern steppes at between 3.4 and 10 t/ha/yr). **Over-exploitation of rangelands** consists in the illicit removal of multi-annual wood species, still widely practised, in particular by the poorest fringes of the agropastoral populations. This phenomenon cannot be quantified exactly for lack of available data, but all specialists agree that it is important and causes more impacts that overgrazing.

99. In most cases, the degradation of rangelands is reversible, grazing courses can be restored through a temporary grazing bans, seeding operations and/or the implementation of grazing plantations to revitalise the vegetation growth.

Indirect factors of deforestation and degradation of forest and rangelands

100. Many indirect factors have a negative impact on superficies and/or quality of forest and pastoral environment (cf. detailed presentation in Annex 5). These indirect factors are mainly interdependent and interconnected. However, they have been grouped in three categories according to their level of importance (assessed after the analysis of the results of the conducted interviews and the consulted bibliography) in Table 20. This ranking allows prioritize the activities planned by this FIP/IP according to the importance of indirect drivers of deforestation and forest and rangelands degradation they try to reduce.

Table 20: Importance of indirect deforestation and forest and rangelands degradation drivers

CATEGORY	INDIRECT FACTORS	IMPORTANCE
Institutions, regulations and national policies	Low efficiency of the Administration[74]	High
	Low adjustment to legal dispositions	High
	Agricultural and pastoral policies non- or little adapted	Medium
	Inadequate application of the law	Medium
Social or environmental context	Lack of confidence by the population and private sector towards the Administration	High
	Poverty of rural and forest populations	High
	Complexity of the land tenure situation	High
	Low level of information of the population about the benefits provided by forests	High
	Destructuring of traditional societal systems	Medium
	Climate change	Low
Shortcomings in the management or knowledge of forests and rangelands	Lack of knowledge on forest and pastoral resources	High
	Forests and rangelands management mode little adapted to the socio-economic context	High
	Lack of a system for monitoring forest and pastoral environments and the related activities	High
	No forest or rangeland management plans	Medium
	Low valorisation of the existing of carbon sequestration potential	Medium

Preliminary assessement of emissions due to deforestation, forest degradation and forest carbon stock increase

101. A reliable assessment of current and historical emissions due to deforestation, forest degradation and forest carbon stock increase to get an idea of potential REDD+ reduction in emissions is not easy to achieve. Available activity data for deforestation and reforestation come from different sources and are contradictory to some extent; estimates of forest degradation of rely on a calculation based on indirect data. In addition, there are no emission factors defined at the national level, which explains why different studies used different emission factors to estimate emissions and removals.

102. A concise summary of the available results to estimate emission and sequestration potential from different sources is however provided below.

Déforestation

103. The 2010 national GHG inventory does not include deforestation (conversion of forest land to non-forest land) or assumes that there is no deforestation. However the data by Hansen et al. (2012) - where the forest is defined as having a minimum 10% cover rate – give a rough estimate of deforestation to approximately 14 000 ha in 14 years, that is 1,000 ha per year (see Table 21). The second forest inventory gives an average estimate of aboveground biomass at 62 tms/ha (LEONG et al. 2014) or about 107 tCO_2/ha. Combining these data with those of the activities, the gross annual emissions from deforestation would be about 106 000 tCO_2/year.

[74] *Ce constat est principalement lié au manque de moyens humains, techniques et financiers de l'Administration, à des problèmes organisationnels internes à l'Administration et à un manque de coordination entre les différentes structures institutionnelles.*

Table 21: Gross deforestation in Tunisia between 2001 and 2014[75]

Year	Gross Déforestation [ha] (>10% of Forest Cover)
2001	238
2002	255
2003	1 596
2004	333
2005	656
2006	371
2007	899
2008	757
2009	1 021
2010	422
2011	2 273
2012	1 490
2013	1 455
2014	2 113
Total 2001-2014	13 879
Annual Rate	991

Forest degradation

104. As regards forest degradation, there is no other estimate than that of the 2010 national GHG inventory. Emissions are estimated at approximately 3.35 million tCO_2 per year. 90% of these emissions are attributed to the harvest of fuelwood. This figure is however subject to a very high uncertainty, as the calculation method used proxy data such as population density and per-household consumption of firewood to estimate e.g. emissions from fuelwood collection.

Increase of forest carbon stocks

105. As for deforestation, there are various sets of activity data for gross afforestation/reforestation (conversion of non-forest land to forest land) which are not consistent (see Table 22).

106. If using the annual growth of 0.66 tms/ha/yr (Le Crom & al., 2014), annual removals from reforestation vary between 4,697 to 19,314 tCO_2/year. On the other hand, the 2010 national GHG inventory estimates

[75] *Source : Hansen, M. C., P. V. Potapov, R. Moore, M. Hancher, S. A. Turubanova, A. Tyukavina, D. Thau, S. V. Stehman, S. J. Goetz, T. R. Loveland, A. Kommareddy, A. Egorov, L. Chini, C. O. Justice, et J. R. G. Townshend. 2013. "Hansen/UMD/Google/USGS/NASA Tree Cover and Tree cover Loss and Gain, Country Profiles." Université de Maryland, Google, USGS, et NASA. Accessible sur Global Forest Watch le 06.06.2016. www.globalforestwatch.org*

annual reforestation removals (conversion of non-forest land to forest land) at 3.85 million tCO_2, which highlights the observed inconsistencies and the need to consolidate activity data

107. Removals from forest land remaining forest are estimated at 2.27 million tCO_2/year according to the 2010 national GHG inventory data. However, based on the second national forest inventory data provided in LE CROM et al. (2014), annual removals of forest remaining forests are estimated at approximately 760,000 tCO_2.

Table 22: Estimation of reforestation, over various time spans and according to different sources

INCREASE IN FOREST SURFACE AREA [HA/YEAR]	PERIOD	SOURCE
4 130	1993-2003	Le Crom et al. 2014 (basé sur les Inventaires Forestiers Nationaux 1995 et 2010)
16 981	2000-2010	FRA 2010, tel que citée dans Le Crom et al. 2014
16 499	1993-2009	Calculé selon les données de la DGF fournies dans Le Crom et al. 2014
11 495	2001-2014	Hansen and al., 2013[76],
6 823[77] or 12 998[78]	2001-2015	DGF, 2015 (from the annual report of the national day of the tree)

108. This synthesis on forest sector emissions data shows first and foremost that there is a need for reliable data on forests, whether data on the extent of the forest, reforestation zone, biomass stocks or the increase in biomass. Without these data, no reliable estimate on emissions and removals and the potential emission reductions can be produced.

2.a.2 A short description of the socio-ecomomic context of deforestation and forest degradation

109. Forests and rangelands provide an effective resource base for the alleviation of poverty in Tunisia. At the same time though, the constant overuse of these natural resources by the resident and largely poor population threaten to degrade and destroy this resource base and thus its potential to support lasting and stable local livelihoods. 37 percent of the country's forest and rangeland area is degraded; while 20 percent of rangelands have been cleared during the past 35 years.

110. About 7% of Tunisia's total population (760.000 inhabitants) live within or in the vicinity of forest areas . They are characterized by high rates of unemployment (30%) and poverty (46% - almost twice the average for the country) and remain strongly dependent on forest resources. Grazing is the major economic

[76] *M. C., P. V. Potapov, R. Moore, M. Hancher, S. A. Turubanova, A. Tyukavina, D. Thau, S. V. Stehman, S. J. Goetz, T. R. Loveland, A. Kommareddy, A. Egorov, L. Chini, C. O. Justice, et J. R. G. Townshend. 2013. "Hansen/UMD/Google/USGS/NASA Tree Cover and Tree cover Loss and Gain, Country Profiles." Université de Maryland, Google, USGS, et NASA. Accessible sur le site Global Forest Watch du 06.06.2016. www.globalforestwatch.org.*

[77] *Forest reforestation exclusively*

[78] *Counting also grazing plantations and windshields in farming areas*

activity in most forest areas (FAO/DGF 2012)79. According to Daly-Hassen (2013)80, the local populations are the main forest beneficiaries, capturing 61% of total benefits, mainly through opportunities for livestock grazing (approx. 5.8 million forage units). Grazing is quickly followed by harvesting of fuelwood to satisfy local people's demand for energy (Daly-Hassen and Ben Mansoura 2005)81. The annual volume of fuelwood collected by local forest users is estimated at approx. 600,000 m³, likely making it one of the most significant driver of forest degradation in Tunisia.

111. Moreover, forests offer a variety of non-timber forest products such as cork, pine kernels, fruit, honey and medicinal and aromatic plants which are harvested by local people. For local forest users the average benefit obtained per household was USD560/year in 2010 (FAO/DGF 2012), though there are regional variations which can be up to 3 times this value. On average, use of these forest resources constitute one third of their total income and is essential for their subsistence.

112. Overuse of forest resources is exacerbated by population growth and a higher than average population density which stands at 87/km² compared to the average 33/km² for the country.

113. On public forest lands, which constitute the majority of forest lands in Tunisia, local communities retain some legal forest use rights. These include the collection of dead wood and brushwood, livestock grazing, non-commercial use of NTFP and cropping in devegetated areas. Though by law access to forest resources is restricted (e.g. in newly established plantations as well as in area with regeneration), the socio-demographic pressure and limited forest law enforcement has resulted in a de facto open access status of forest resources (Daly and Ben Mansoura 2005). As a result, communities have few incentives to sustainably manage forest resources but rather tend to exploit them for immediate benefits. The increase in pressure on forest resources can to some extent also be indicated by the number of infringements which has quadrupled between 1992 and 2014.

114. Classical law enforcement activities such as the imposing of fines or initiation of lawsuits are however unlikely to yield lasting results where these infringements are committed by poor people, which may have little economic alternative but to exploit the surrounding forest resources. On the other hand, continuous violations of the law and a de facto open access regime to forest resources cannot be tolerated by the state.

115. The challenge thus remains to align sustainable management of forest ecosystems and their products and services with the socio-economic needs of particularly the resident poor rural population. Here, REDD+ payments (for carbon and other ecosystem services) could play a role in providing finance for a transition period, during which "tomorrow's forests" are planted, alternative forage crops and energy sources are established, value chains are improved to create more income and forest use is organized both more participatory and more sustainably.

2.a.3 Summary of key laws policies and strategies relevant for REDD+

116. Table 23 below summarizes the main REDD+ relevant laws, policies, strategies and programmes and assesses their impacts (positive or negative) on the REDD+.

[79] FAO (Food and Agriculture Organization). / DGF (Direction Générale des Forêts). 2012. Etude sur la caractérisation de la population forestière, elaboré par K. Tounsi et A. Ben Mimoun, Tunis

[80] Hamed Daly-Hassen (2013) Economic valuation of forest goods and services, Tunisia. available at: TEEBweb.org

[81] *Daly-Hassen H. and Ben Mansoura A. 2005. Chapter 7 - Tunisia, pp. 105-122. In: M. Merlo and L. Croitoru (Eds), Valuing Mediterranean Forests: Towards Total Economic Value. CABI Publication, Cambridge, Mass, USA, 406 p. ISBN: 0-85199-997*

Table 23: Main REDD+ relevant laws, policies, strategies and programmes

Name of law, policy, strategy or programme	Responsible Institution	Relevance for REDD+ / emissions in the forest sector	Impact for REDD+	Remarks
LAWS AND OTHER LEGAL RULES				
Loi 63/17 du 27 mai 1963	MARHP	Incentive schemes for the development of farming activities including tree crops, afforestation and sylvo-pastoral development	Rather negative (investments oriented towards agricultural production). No achievements as far as afforestation and sylvo-pactoral development are concerned.	Clearing rangelands and private forests for agricultural production
Décret-Loi 64 /03 du 20 février 1964	Ministry of state domain and tenure affairs	Compulsory registration (free) of all rural estate/properties including forests	No impact or rather negative	Many litigation and quarrels when it comes to forests.
Loi 76 /85 du 11 aout 1976, modifié et complété par loi n:2003/26 du 14 avril 2003	MARHP/DGF	Expropriation of private land in sensitive areas for reforestation/ afforestation for public/national interest	Positive by 2011. Negative since 2011 (Revolution) because of the local population damages on reforested areas	Mainly sand dunes an poor soils on the sea shore
Loi 83/87 du 11 novembre 1987: Protection of agricultural land	MARHP	Agricultural Land use change control, including forestry.	None or rather negative in particular rangelands.	Weakness or lack of law enforcement
Loi 88-20 du 13 avril 1988: Forestry Code	MARHP/DGF	Forest (public and private) and community rangeland resources management and access to forest resources, Forest conservation	Negative because of its repressive/restrictive character and its incompatibility with sustainable local development demands	Weakness or lack of law enforcement due to the inefficiency or the absence of implementation procedures;
Loi 93-120 du 27 décembre 1993: Investment code	MARHP and APIA	Incentive schemes for the development of farming activities including tree crops, afforestation and sylvo-pastoral development	To date, no investments achieved by the private sector in afforestation and sylvo-pastoral development.	Code is under revision for better governance, simplification and harmonization of fiscal measures among others
Décret n 95 /793 du 02 mai 1995: Granting credits to small farmers and fisherman	MARHP and APIA	Granting of credits to small farmers for productive forestation activities, pastoral plantations, rangeland enhancement, etc.	No impact	Lack of monitoring and follow up of credits.
Loi 95/70 du 17 juillet 1995: Loi sur la Conservation des Eaux et du Sol	MARHP/DGACTA	Land reclamation/restoration downstream forests	Positive (reducing anthropogenic pressure on forests)	Limited impact.

Name of law, policy, strategy or programme	Responsible Institution	Relevance for REDD+ / emissions in the forest sector	Impact for REDD+	Remarks
Loi 99/93 du 17 août 1999: Hydrocarbons code Loi 2003-30 du 28 avril 2003: The mining code	Ministry of industry and Energy	Forest protection obligation	Positive (in principle)	Compulsory environmental assessment of projects impact; adoption of safeguard clauses.
Loi n° 2005-13 du 26 janvier 2005: Forestry concessions to private sector investors.	MARHP, Ministry of state domain and tenure affairs and The Prime Ministry	Involvement of the private sector into forest sector development	No impact (yet)	Process is blocked due to the inadaptability of the legal texts.
POLICIES/STRATEGIES and PROGRAMMES				
Stratégie Nationale de développement et gestion durable des forêts et parcours 2015-2024	MARHP/DGF	The strategy aims, among others to (i) Enhancing forest resources management an governance; (ii) Improving and increasing forest cover	Positive impact	Implementation is started with the support of the WB through a consultant who is working on the institutional framework of the forest sector.
Projet de financement cadre de gestion des bassins versants (10 Governorates): Project is going to end shortly	MARHP/DGACTA	The project is implemented through an integrated approach at watershed scale including forests when any in coordination with DGF	Positive impact limited (lack of cooperation or coordination among the institutional partners)	Malfunctioning of the institutional framework and inadequacy of the institutional arrangements
Programme de gestion des ressources naturelles dans les territoires ruraux vulnérables dans 5 gouvernorats (Pilot base): 2017-2021 (probably)	MARHP/DGACTA	Implementation using a landscape approach including forests in coordination with DGF	Potential positive impact through participatory forest management a hypothetical subsequent decrease of pressure on forest resources due to improvement of household income	AFD funding: (€ 53,3 M). To be started; Funding request to GCF has been or is to be done in view to extend the intervention area to 3 more governorates
Integrated Agro-sylvo-pastoral landscapes management project	MARHP/DGF – Ministry of Environment and sustainable development??	Improvement of forest governance and strenghthening of forest administration, development of value chains, implementation of a co-management system Fight agains poverty	Positive impact	Project included in IP/FIP

Name of law, policy, strategy or programme	Responsible Institution	Relevance for REDD+ / emissions in the forest sector	Impact for REDD+	Remarks
PNO4: Ongoing until 2017	MARHP / ODESYPANO	The programme is under implementation: It aims and Poverty reduction in the mountainous and forestry areas (North West region): Integrated approach to rural development, including forests in coordination with DGF.	Limited impact (participatory forest management, potential decrease of pressure on forest resources due to improvement of household income	Strategy for the continuation of the programme is being prepared by ODESYPANO
PGIF 2 (2010-2015), extended to 2017-2018	MARHP/ DGF	Integrated forest management in 4 governorates	Very limited impact	Project financed by the Japanese cooperation (JICA)
Other ongoing projects: PDAIs, PGRN 2	MARHP: DGFIOP and CRDAs	Integrated Agricultural Development projects, including forests when any in coordination/cooperation with DGF	Limited positive impact (lack of cooperation or coordination among the institutional partners)	

117. The national strategy for development and sustainable management of forests and rangelands will directly support the objectives of the REDD+. Other programs identified in Table 23 may also impact positively REDD+: indeed, the proposed integrated approach – involving local populations in a co-management approach and seeking to improve the economic valuation of ecosystems - should encourage the preservation and management of these natural resources. REDD+ will be fundamental to implement these programs in a coordinated and harmonised manner, in particular at the level of monitoring and assessment.

Previous programmes and projects to reduce deforestation and forest degradation and increase the forest cover

118. Table 24 provides an overview of the major national programmes and projects to reduce deforestation and forest degradation and increase forest cover implemented in the past in the framework of the previous national forest strategies in Tunisia. Support from development and cooperation funding, which has contributed to these programmes, is included in these figures.

119. With the exception of establishing wind breaks on agricultural land with support provided by the DGF (provision of seedlings), the private sector does not play a large role with regard to afforestation / reforestation activities. While NGOs play a role in the below mentioned programmes, it is usually limited to activities such as public outreach, socio-economic aspects and capacity building.

120. Table 24 illustrates that forest related activities in the sense of REDD+ have so far consisted in afforestation / reforestation and rehabilitation activities. Larger scale programmes or projects to prevent and reduce deforestation and forest degradation do not exist.

121. The last column on the right hand side indicates the level of performance for each activity in percent of the original area to be planted or put under management.

Table 24: Overview of previous programmes to reduce deforestation and degradation and increase forest cover

NAME OF PROGRAMME / PROJECT	SECTOR (GOVERNMENT, DEVELOPMENT COOPERATION, PRIVATE SECTOR, NGO)	RESPONSIBLE INSTITUTION(S)	MAJOR ACTIVITIES	PERFORMANCE (SUCCESSFUL OR NOT)
Stratégie Nationale de Reboisement 1991-2000 Targets: ✓ 320.000 ha of Reforestation /forestation; ✓ 400.000 ha of and fodder and cactus plantations; ✓ 2.200.000 ha of Rangeland management.	National Forestry Programme (State budget)	DGF in cooperation with DGACTA, OEP and ODESYPANO	✓ Forestation/Reforestation Achievements: 186.000 ha of which 46.000 private; ✓ Fodder and cactus plantations: ✓ Rangeland management: 236.000 ha ✓	58% 46% 11%
	Forestry Development Project I:(1988-1994); co funding BIRD and NIB-NDF	DGF	✓ Forest Exploitation and Regeneration (16.287 ha); ✓ Forest Plantations (7.488 ha) ✓ Sylviculture works (thinning) ✓ Intensified Forest Management; ✓ Forest Pasture and Range Improvement:	76 -91% 70% 91%
	Second Forestry Development Project (1996-2001); co funding BIRD and AfDB	DGF	✓ Forest Plantations; ✓ Fodder Plantations: ✓ Forest Pasture and Range Improvement; ✓ Forest management: Studies and Sylviculture works	89% 60% 117% 80-129%
Stratégie Nationale de Développement du Secteur Forestier et pastoral 2002-2011: Targets: ✓ Forestation/reforestation: 140.000 ha ✓ Forage plantations: 210.000 ha ✓ Cactus plantations: 165.000 ✓ Rangeland Management/Development: 275.000	National Forestry Programme (state budget)	DGF in cooperation with DGACTA, OEP and ODESYPANO	✓ Forestation/reforestation: 57.890 ha ✓ Forage plantations: 23.101 ha ✓ Cactus plantations ✓ Rangeland Management/Development::	41% 11% 7% 21%
	PGIF I: Integrated Forest Management project, phase 1: 2002-2007	DGFin cooperation with DGACTA and INRGREF (Forestry research institute)	✓ Forest management and sylviculture: ✓ Forest ecosystems rehabilitation: ✓ Soil and water conservation: ✓ Socio-economic development:	132% >100% 105% Partially successful
	PGIF II: Integrated Forest Management project, phase 2: 2008-2015	DGF	✓ Management of Aleppo Pine forests ✓ Management of pine forests ✓ Rejuvenation of cork oak forests	In progress

2.a.4 Forest and pastoral governance mechanisms

2.a.4.1 Administration of the forest and pastoral sector

122. The forest and pastoral sector is administered by the Ministry of Agriculture, Water Resources and Fisheries (MARHP), which governs the five sectors of activity that are (i) agriculture, (ii) fisheries and aquaculture, (iii) livestock, (iv) hydraulic resources and (iv) natural resources (including forests, rangelands and soils). The Directorate General of Forests (DGF) is one of the 10 technical branches of the MARHP. The DGF mission is 'the implementation of the provisions of the forest Code and its implementing rules' (article 7 of the Forestry Code) which groups three major roles: the implementation of the forestry regime, the management of hunting and game conservation and the protection of nature and wildlife. It relies for this on:

- 4 technical directorates, located at central level. They conduct studies, take part in the development of the sector strategy, in activity planning, the management of forestry projects and supervision and follow-up activities;
- 26 forest districts (ArF) 82, located at the governorate level and hierarchically regional stations in agricultural development (CRDA). They conduct management and control activities in the field ;
- Direction of forest exploitation (REF), responsible for the logging and sale of forest products;
- Common services of the MARHP (see Annex 6).

123. Apart from the DGF, the Forestry and Pastoral Administration is reinforced by stakeholder support structures in the areas of research and training, such as the Institut silvo-Pastoral of Tabarka (ISP), the National Institute for Research in Rural Engineering, Water and forEsts (INRGREF) and the Centre de Formation Professionnelle agricultural (CFPA). In addition, many other structures and institutions are, directly or indirectly, affected by the forest and pastoral sectors. Their roles and responsibilities are presented in more detail in Annex 6. Figure 4 shows a mapping of the institutions concerned with forestry and pastoral.

124. The cohabitation of the various Directorates responsible for the management of natural resources (water, soil, forests, rangelands) within the Ministry of Agriculture is a definite asset for the management of Tunisian forests and the rangelands. This illustrates that the interdependence of the various sectors concerned and the necessary complementarity of policies and strategies for natural resources management are taken into account. The magnitude of the MARHP prerogatives also demonstrates that the importance of these sectors is recognized by the Tunisian Government

[82]. With 2 forest districts each for the Jendouba and Kasserine CRDA, there are in total 26 districts for 24 CRDA. The second Kasserine forest district is vested to the management of alfa covers.

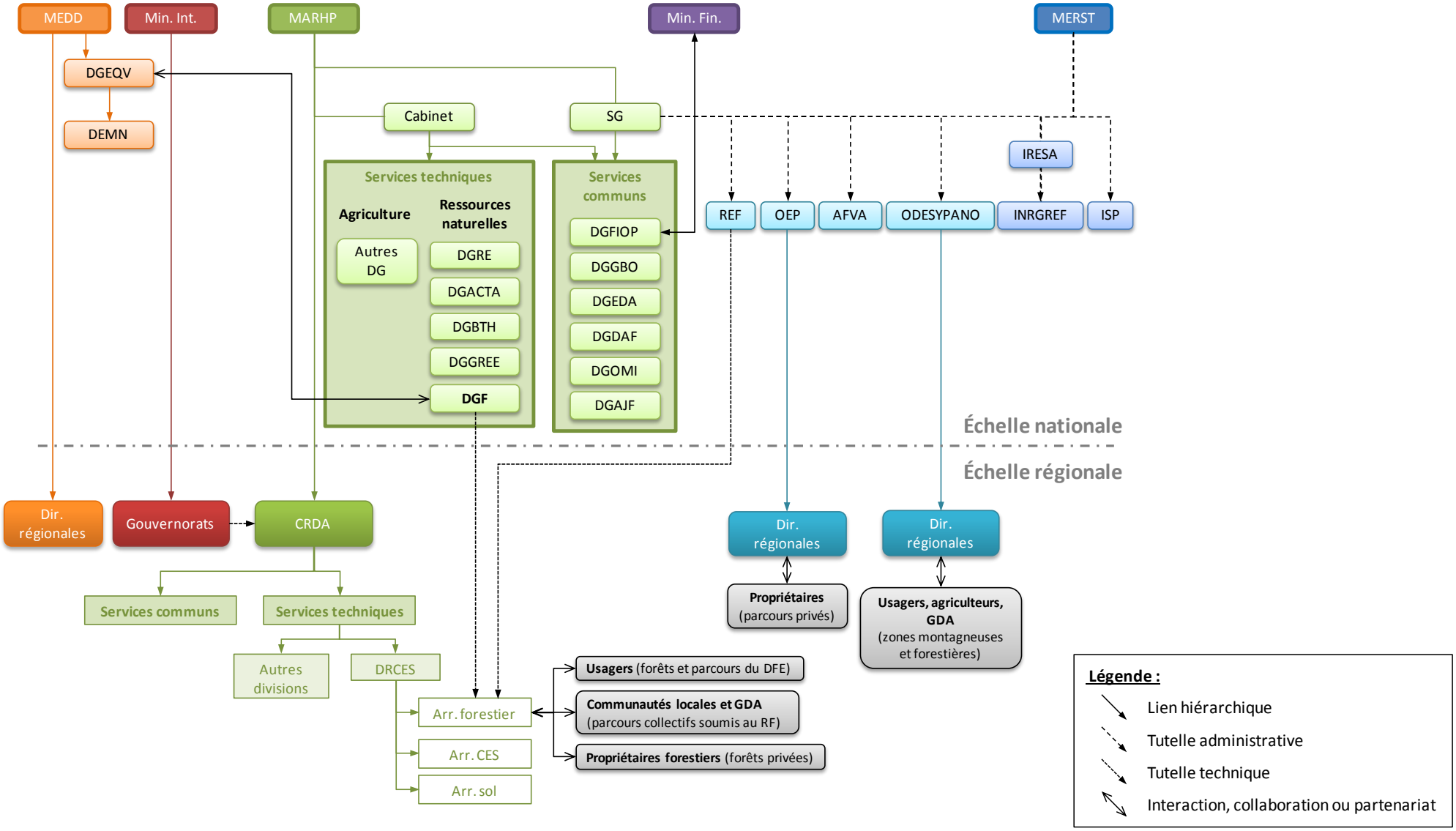

MEDD
Min. Int.
MARHP
Min. Fin.
MERST
DGEQV
DEMN
Cabinet
SG
IRESA
Services techniques
Agriculture
Ressources naturelles
Autres DG
DGRE
DGACTA
DGBTH
DGGREE
DGF
Services communs
DGFIOP
DGGBO
DGEDA
DGDAF
DGOMI
DGAJF
REF
OEP
AFVA
ODESYPANO
INRGREF
ISP
Échelle nationale
Échelle régionale
Dir. régionales
Gouvernorats
CRDA
Dir. régionales
Dir. régionales
Propriétaires (parcours privés)
Usagers, agriculteurs, GDA (zones montagneuses et forestières)
Services communs
Services techniques
Autres divisions
DRCES
Arr. forestier
Arr. CES
Arr. sol
Usagers (forêts et parcours du DFE)
Communautés locales et GDA (parcours collectifs soumis au RF)
Propriétaires forestiers (forêts privées)
Légende :
Lien hiérarchique
Tutelle administrative
Tutelle technique
Interaction, collaboration ou partenariat

Figure 12 Institutional mapping of the forest and pastoral sectors

125. The analysis of the administrative organization of the institutions involved in the management of natural resources, including forests and rangelands, shows however the complexity of the current institutional framework. The actors external to the MARHP involved in the management of resources are particularly numerous, and there is no functional relationship defined between them, nor any coordination instance or operational structure. There is no technical structure either dedicated to the coordination between the various MARHP entities concerned with natural resources beside the Minister's Office, whose organization does not respond to these needs in an optimal way. This causes a certain compartmentalisation between the various General Directorates and structures under the MARHP. In the absence of significant changes and the lack of flexibility in the organization of the MARHP, this complexity intensified during the past 15 years and prevented the Administration to adjust its organization according to developments in the political, socio-economic and sectoral issues.

126. A comprehensive analysis of the institutional and legal context of the forest and pastoral sectors was conducted in a study[83] within the framework of the preparation of the integrated landscape management project in the least developed regions (Projet de gestion intégrée des paysages dans les regions les moins développées PGIP) in Tunisia. The main results of this analysis are presented in Table 12.

Table 25: Analysis of the institutional context of the forest and pastoral sectors

STRUCTURE	RESULTS OF THE ANALYSIS
MARHP	❒ Structure based on a fragmented organization into various technical departments both at central and regional level ❒ Lack of a structure in charge of developing the agricultural development policy and sectoral strategies which would take into account the spatial and technical complementarity of the different structures ❒ Weakness of cross cutting governance and monitoring and evaluation tools of the activities of the various departments (absence of effective project assessment mechanisms, weakness of the resources allocated to the DGOMI and of the budgeting process) ❒ Weakness of the MARHP common services, which do not allow to perform their function at the scale of such an important Ministry, with such wide and varied attributions ❒ Lack of ownership of the process of budget management by objective, explained by weak capacity and organizational problems ❒ Lack of human resources management policy ❒ inefficient use of the management tools such as regional management plans for the conservation of water and soil (mainly due to the weakness of the central structures in operational monitoring) and the integrated and participatory forest planning PV (lack of financial and human resources)
DGF	❒ Actions based primarily on short-term programming and on the monitoring of annual achievements (despite the existence of a 10 year strategy); almost non-existent long-term programming (apart from cooperation projects) ❒ Lack of ongoing evaluation mechanisms ❒ Current organization significantly different from the official chart (defined by Decree No. 2001-420 of 13 February 2001), explained by the creation of reduced support structures, put in place in order to compensate for the weakness of the main support structures of the Department (common services)

[83] *DGF & Banque Mondiale, 2016. Diagnostic institutionnel et juridique de l'administration des forêts. Réformes institutionnelles et juridiques du secteur forestier. Mars 2016. 69 p.*

STRUCTURE	RESULTS OF THE ANALYSIS
	❒ Insufficient operational development of the Directorate of Social And Economic Development (established in 2001 in order to strengthen actions in connection with forest populations), due to the lack of means and regulatory barriers. ❒ Duties and tasks of the Delimitation Service different from those defined by the Decree of 2001 ❒ Compartmentalisation and imbalance in terms of workload and human and financial resources between the different structures explained by the organization chart and the lack of mechanisms for an effective collaboration ❒ Rangeland management occupying a restricted place within the Forest Administration.
REF	❒ Missions relatively limited insofar as it focuses on the harvest and the sale of mobilizable resources without intervention for the enhancement or promotion of products ❒ Logging operations management not optimal due to the lack of functional and administrative links to the ArF, despite their close cooperation ❒ Inefficient workers recruitment policy, that does not allow to achieve the objectives defined in the annual operating plans ❒ Monitoring of logging operations difficult and incomplete, due to the lack of capacity at the level of the ArF, particularly in terms of human resources and information systems ❒ Lack of evolution of forest products sale and adjudication procedures, leading to the price-cuttings and/or the undervaluing of certain forest products (related to the existence of a limited number of successful tenderers and the large size of the lots offered for sale which does not favour small purchasers)
CRDA et ArF	❒ Potential conflicts for the implementation of forestry activities on the ground related to the separation of the administrative and functional aspects and the absence of appropriate mechanisms for the coordination and planning (the ArF depends on the CRDA for administrative and financial questions and on the DGF on the functional and technical levels. The potential divergence between political priorities and technical priorities can be problematic (links between the CRDA and governorates) ❒ Weakness of the CRDA divisions affecting the planning process and the consistency between the actions of various departments ❒ Weakness of the human resources of the ArF resulting in a low efficiency of the hierarchical organisation (the workload of the Chief of District does not allow him, for example, to play its role as supervisor) ❒ Lack of functional organization at yard level, the yard heads being responsible for the supervision and control of all of the activities on their perimeter ❒ Fairly flat organisation of districts, in order to compensate for the lack of staff and logistical means ❒ Lack of skills for the management of collective rangelands, especially in the Centre and South of the country

127. The different elements presented in Table 12 considerably limit the functioning and performance of the natural resources sector administration and, in particular those of the Forest Administration. They cause a lack of optimization of the interventions of the different structures, which translates into a multiplication of projects, the implementation of duplicated or inconsistent actions, a lack of experience and knowledge sharing, etc. The specific characteristics of the forest and pastoral sector require on the part of the Administration varied roles and responsibilities that combine control functions, technical functions, and socio-economic development functions. The structure and the current organization of the DGF do not enable to take into account the whole of these specificities.

128. The multitude of actors intervening on rangelands is revealing of the complexity and of the lack of coordination caracterizing the Administration. Indeed, the DGF intervene on State Forest Domain rangelands (through a branch of the Silvo-Pastoral Development Directorate), while the OEP works on the private rangelands. The ODESYPANO also works on the montainous areas of rangelands in the North East, while the DGACTA implements actions on rangelands to protect tunisian water and

soils watersheds, without any coordination or consistency of the various interventions. This lack of a unique rangeland management structure, or of a steering structure between the various entities, coupled with the lack of expertise in the pastoral sector within the DGF (particularly for steppe rangelands of South and Central Tunisia), represents a significant barrier to the preservation and the sustainable management of Tunisian rangelands.

129. However, the recent adoption of the Budgetary Management By Objective (BMO), which aims to optimize the management of the State's finances and to improve the efficiency of public action, is a positive sign underlining the desire to encourage a better functioning of the Administration. The definition within the MARHP of 6 programs (of which one consolidates the components 'Forests' and 'Conservation of waters and soils') is an asset for the management of natural resources. The lack of consideration of the capacity of the public structures in terms of planning and the allocation of each subprogramme of the BMO to a Directorate cause however organizational problems which affect an effective BMO implementation and the adaptation of the budget establishment methods that it is supposed to produce.

130. These institutional difficulties cause indirect impacts, but not less important, on the sustainable management and protection of forests and rangelands. The lack of efficiency of the Administration resulted in effect a lack of confidence on the part of forest peoples and the private sector, which is detrimental to the protection of ecosystems and their economic recovery, thereby promoting their degradation. This inadequate management of forest and pastoral resources and their degradation cause negative consequences in economic terms (low valuation of forest and pastoral products), environmental (weakening of ecosystemic services) and climate (GHG emissions and low carbon sequestration).

2.a.4.2 Analyse des modes de gouvernance

Deconcentration and decentralisation process

131. Decentralization in Tunisia translates today into the existence of Regional Councils, having the same boundaries as Governorates, and communes, which are discontinuous territorial entities that do not cover the whole of the territory. The Constitution of the Republic of Tunisia of 27 January 2014 advocates a principle of territorial decentralization (articles 14 and 131). A draft law under preparation should soon achieve the decentralization process by the creation of local communities including districts, divided into regions, themselves divided into municipalities, which will enjoy a legal, financial and administrative autonomy. This upcoming decentralization should foster regional economic development and reduce the disparities between the urban or coastal and rural territories (including forest and pastoral).

132. The management of natural resources involves a deconcentration of State services. The Forestry Administration is one of the most deconcentrated administrative services of Tunisia, thanks to the existence of the CRDA and the forest districts (cf. Annex 6). However, as mentioned inTable 12, the separation between the administrative and technical aspects at the level of the CRDA and the ArF produces a certain dysfunction that affects efficiency and performance of the sector. Forestry and pastoral activities programming is carried out and coordinated by different technical directions of the DGF, while taking into account the proposals of the ArF. These proposals, developed on the basis of the financial resources allocated to the ArF by DREA in the national forest programme and existing capacities, are therefore not necessarily in line with the objectives of the DGF programme.

This often explains discrepancies between forecasts and actual figures relating to the logging activities, forestry operations and the management of forests.

133. The institutional set up of the IP/FIP will take into account the current organization of the Central and deconcentrated State services, as well as the ongoing decentralization process, so that all stakeholders (including representatives of the future territorial communities) are integrated in the consultation and decision mechanisms established in the context of the IP/PIF. In this context, it should be sufficiently flexible in order to adapt to changes in the institutional and administrative context.

Decision making mechanisms

134. The decision-making mechanisms reflect the organization of the Administration of the sector and are largely diluted between the main institutions concernedthe Minister's Office, which has a technical dimension coupled with a political role, the DGF, the CRDAs and the Ministry of Finance, for budgetary issues. The fragmented organization of the MARHP and the DGF (cf. § 103), coupled with the absence of a management structure for the natural resources management activities (including forest and pastoral), promotes the lack of consistency in decision-making and the definition of guidelines by different structures.

135. Decision-making mechanisms in Tunisia respond almost exclusively to a "vertical" logic Most of the decisions are taken at the central level, and are applied according to the hierarchical levels of the Administration. Forest and rangeland management prescriptions are dictated by the Administration and are not the subject of an inclusive consultation and consultation process. This unilateral top-down approach, dictated by legislation, imposes a certain vision of natural resources management, focusing particularly on the repressive component. It does not enable the local populations, the professional associations/groupings, civil society or the private sector to participate in the decision-making process, thereby promoting the lack of involvement of these stakeholders in the management of natural resources and a climate of distrust toward the Administrative services. Despite an increase of the forest cover, the state of forest and rangeland degradation and the poverty of rural populations today show the limits of this approach. The protection and preservation of the forest and pastoral resources can only be guaranteed with the participation of local populations, and in particular with an economic valorization allowing an improvement of their livelihood.

Participatory consultation mechanisms with in the forest and pastoral sectors stakeholders

136. The compartmentalisation within the DGF and the MARHP is linked to the absence of any formal or structured mechanism of coordination and/or consultation **within the Administration** or with the **technical and administrative partners** of the sector. Consultations are often informal and conducted on an occasional basis, when they are made necessary by the preparation of the National Development Plan, intradepartmental program reviews at the MARHP or their assessment programs. These consultations produce a data and information sharing exercice on the progress of the activities of the different structures. This low degree of coordination is translated, as mentioned above (cf. § 103 et 110) by a low level of coordination between the different administrative

structures involved, who work nonetheless on similar or complementary themes (forest, route, agriculture, soils, water).

137. Similarly, no structured specific device is dedicated to the **dialogue with the private sector, local communities and civil society.** Their participation is sometimes requested, such as for regional and national workshops and consultations organized for the preparation of the National Forest Programme, the development of the National Strategy Of Sustainable Management Of Forests And Rangelands (2015-2024), studies in preparation for the REDD+ (with the support of the UN-REDD Programme and FAO) and preparation of this PI. PIF and the R - PP. The participation of local partners and actors (and particularly within the forest peoples) is also sought quasi-systematically during the development of the integrated and participatory forestry planning PV. These consultations, imposed by the terms of reference of the studies consist in (i) information, awareness raising and animation of the forest users within the framework of a socio-economic diagnosis, (ii) the development of participatory resource inventories, and (iii) the organization of workshops on the orientations and the contents of proposed management PV. However, the preparation of the management PV being entrusted to service providers (consulting bureaux) without all the skills required, and due to the lack of supervision and control by the Forest Administration, the quality of the consultations carried out is often insufficient, especially in the participatory aspect. The management PVs only initiate a superficial and ephemeral consultation process. Indeed, to date, none of the management PVs developed was implemented in reality, for lack of means. Such a situation reinforced the confidence gap of the populations towards the Forest Administration and the low degree of ownership of forest management by the people, indirectly harming recovery and the protection of forest and pastoral ecosystems.

BOX 1: INVOLVEMENT OF CIVIL SOCIETY IN THE MANAGEMENT OF NATURAL RESOURCES

Over the past two decades, Tunisia has known many experiences and initiatives aiming at involving civil society organizations, such as environmental NGOs and peasant and socio-professional groups, in the management of natural resources.

Implications of forest peoples in the management of forests:

The revision of the Forest Code, in 1988, introduced the possibility of organization of Common Interest Forest Associations (Associations Forestières d'Intérêt Collectif AFIC). The 1990-2000 national reforestation and soil protection strategy and the Forest Development Programmes (PDF), and based on the experience of the ODESYPANO in terms of participatory approach, ten integrated development pilot operations (Opérations pilotes de développement integré OPDI) based on the set up of AFIC were launched in 1994 in the different forest regions, in order to implement an integrated forest planning and cooperative forest management focused on the development priorities of forest populations. The OPDI were prepared and implemented with the support of specialized NGOs.

The results of these OPDI were limited and did not last because in particular of the provisions of the Forest Code on access to resources, and of the limited capacities of the Forest Administration and the CRDA. The repeal of the provisions relating to the AFIC and their replacement by the GDA notably introduced restrictions on revenue generation and harmed the success and sustainability of these operations. Subsequently and on the basis of this experience, several similar actions were conducted in the context of the implementation of the 2002-2011 forest strategy, including by the PGIF. However, most of these operations failed to produce conclusive and sustainable results for the same reasons, except in the case where they were used or continued in other projects.

GEF Micro funding program (1993-2015):

In the context of of the environmental conventions implementation, particularly those arising from the Earth Summit, many small projects relating to the management of natural resources were being implemented by civil society organizations (rural or socio-professional organisations or environmental NGOs). These projects were funded by the Small Grants Programme of the Global Environment Facility (GEF) Fund, of other national and bilateral partners and international NGOs. More than 85% of these projects are involved on biodiversity (46%), degradation of the land (25%) or mitigation of climate change (14%), through actions of information, awareness-raising, capacity strengthening, community management, conservation or valorisation.

Since 1993, 169 small projects have been initiated and implemented, for a total amount of US $ 15.8 million (of which about athird comes from grants to the Program).

This Program had positive impacts related especially to the date palm sector, to oasian ecosystems, to the preservation of the rangelands and the fight against desertification. However, the limited size of the projects and their dissemination in space and in time limit the extent and durability of these impacts.

Information, communication and transparency

138. Information, communication and transparency within the MARHP suffer from some weaknesses. Indeed, although much data exist on the forestry and pastoral sectors, these are not valued and are not the subject of relevant communication actions. For example, the lack of communication towards some key departments such as the Ministry of Finance translates into a low consideration for the forests and rangelands economic value and issues, which leads to penalizing budgetary reductions for the development of the sector.

139. This situation led the DGF to set up its in own support structures, such as communication unit created in 2013, with the role of promoting external communication on the activities of the sector (to institutional and non-institutional partners, development and cooperation partners and the general public) and developing the internal communication within the Forest Administration through information exchange and sharing mechanisms. This initiative seems to have had positive effects, since many actors from the public and private sectors have approached the Forest Administration to identify investment opportunities in the forest sector or to solicit forestry concessions, as it is the case for the Caisse des Dépôts et Consignations (CDC), the 'Jeff Medjerda' company and the «El Karthikeyan» NGO. Consultations with the latter led to the signing in 2014 of a partnership agreement for the implementation of a reforestation programme ("Green Tunisia»), aiming at planting one million trees. However, despite the creation of this communication unit, the lack of information available at the local level remains patent, with the exception of occasional communication efforts by the civil society (NGOs).

140. On the whole, the budget control procedures in force in the Tunisian Administration promote transparency, although their heaviness affect the performance of the activities and their budgetary efficiency (increase of the costs). However, the current procedure for the development of the National Forest Programme, which represents an average of 87% of the budget of the sector, does not promote a systematic transparency, as more than 70% of the total budget is dedicated paying the casual workforce used for forestry work. This makes monitoring the use of the corresponding budget line for the various scheduled activities and operations particularly complicated. The audit report of the 2002-2011 National Strategy on the Development of the Forest and and Pastoral Sector, established by the Court of Auditors in December 2012, also noted many deficiencies and anomalies. The recent adoption by the MARHP of the Budgetary Management by Objective (BMO), in the context of the ENPARD[84] initiative with the EU support, should however improve transparency. The budgeting by objective procedures require that each target be supported by measurable results, which allows an adequate monitoring of the achievements and an audit of their costs.

141. The management of the projects co-financed by the development partners is however completely transparent insofar as the technical and financial monitoring and reporting procedures are aligned with those of the financial partner (conditionality, procedures manual, procurement plans, format and periodicity, independent annual audit, etc.).

[84] *European Neighbourhood Programme for Agriculture and Rural Development (Programme européen de voisinage pour l'agriculture et le développement rural)*

142. At the technical level, data and information produced in different types of technical reports (annual reports, evaluation reports, etc.) suffer from the absence of verification and/or quality control mechanisms. This often causes discrepancies and more or less important inconsistencies in quantitative data, which makes them particularly difficult to interpret.

2.a.4.3 Compatibility of the institutional, political and legal framework with REDD+ mechanism objectives

143. The global objective of the REDD+ is to fight against climate change due to GHG emissions stemming from deforestation and forest degradation, which can be developed in 5 specific objectives:

- Reducing GHG emissions due to deforestation;
- Reducing GHG emissions due to forest degradation;
- Storing forest carbon stocks;
- Sustainably managing forests;
- Reinforcing forest carbon stocks.

144. As presented above, the Tunisian institutional, political and legal framework has some constraints and gaps in order to reach REDD+ objectives. Indeed, the inadequacy of the current legislation with the socio-economic context, the forestry and pastoral sectors specificities, and the institutional dysfunctions described above, all constitute major obstacles to the preservation and sustainable management of the forest ecosystems. However, the existence of numerous national strategies in the climate change field and the legal notice in the Tunisian Constitution about the necessity to contribute to the preservation of the climate and the environment shows that the Governement has a real awareness of the phenomena and has taken it into consideration.

145. Besides, the National Strategy for the Development and Sustainable Management of Forests and Rangelands (NSDSMFR) 2015-2024 clearly mentions the mitigation of the climate change effects among its objectives (element 5 of objective 3). Climate change thus comes as one of the forestry sector's priorities in the three large regions (North, Center and South) in the Regional Action Plan 2015-2024 of the NSDSMFR. Besides, the other national strategic orientations should greatly contribute to reaching REDD+ objectives. Nevertheless, the implementation of the NSDSMFR may meet some constraints particularly related to the lack of measures to carry out changes for the implementation of the strategy, the lack of action plan and detailed planning of each stakeholder's role and to the necessity to integrate that strategy in a policy of global reform. The implementation of solutions that allow to solve or to circumvent these constraints will definitely be a factor of success or not of the NSDSMFR. In this respect, the Tunisian Investment Plan of the Forest Investment Programme could constitute an important support and facilition tool for its implementation.

2.b. REDD-plus Strategy Options

2.b.1 Preliminary REDD+ strategy options

146. Based on the consultations to date and an analysis of the drivers of deforestation and forest degradation, the following preliminary conclusions can be drawn:

- The principal drivers (direct factors) of deforestation and forest degradation are clearing and burning for agricultural or settlement areas, illegal wood extraction (including for firewood and charcoal production) and grazing (preventing forest regeneration).
- The weakness of forest and pastoral governance and management and its ignorance of the the socio-economic realities highlight the need for real reform of the regulatory and institutional framework.
- Forests and rangeland management requires a real change of approach promoting the involvement of local populations and the private sector and allow for a better economic use and valorization of forest and pastoral resources.
- The balance of forest ecosystems in terms of emission and sequestration of GHG is overall positive (based on the current available data), but remains well below its potential, in particular because of the low productivity of the existing stands and the many degraded areas, where regeneration does not occur or is prevented e.g. by grazing or fuelwood collection.
- Data and knowledge about forests and rangelands are plenty, but associated uncertainties are high and their use and usability is restricted.

147. The following preliminary REDD+ strategy options have been identified:

1. Improvements in forest governance, both in regulatory as well as institutional terms
2. A stronger involvement of local people (co-management) and the private sector to improve the sustainable management of forests and their protection to improve in general the legal and sustainable use of forests in particular through the local population.
3. A better valorisation of forest ecosystems including in particular the valorisation of ecosystem services (protection through use) to create alternative income in particular for local forest users and thus reduce the dependence on extractive and unsustainable forest use.
4. Reducing pressure on forests by developing and providing alternative income and energy sources (to reduce illegal wood extraction in particular for fuelwood and charcoal production).
5. Improve the sequestration potential of plantations and degraded forests through enrichment plantings, use of well-adapted tree species and high quality seedlings.

148. Intentional and significant overlap will be found between the REDD+ strategy and the FIP, which underlines the FIP's role in financing activities that do result in reduced emissions from deforestation and forest degradation and the enhancement of forest carbon stocks.

2.b.2 Outline of the workflow to develop the national REDD+ strategy

149. The development of a national REDD+ strategy is a priority for the Government of Tunisia (GoT). The national REDD+ strategy will be developed through a comprehensive, transparent and inclusive multi-stakeholder consultation process. The REDD+ strategy is envisaged to align with the UNFCCC REDD+ requirements as well as with the broader development objectives of Tunisa. The REDD+ strategy will complement other existing strategies, here first and foremost the national forest and rangeland strategy and also the climate change strategy.

150. Since the drivers and underlying causes of deforestation and forest degradation are mostly within the agricultural and forestry domain, the REDD+ strategy will be a strategy at the level of the MARHP to ensure ministerial level ownership and the necessary status to trigger sectoral change.

151. It is proposed to develop the REDD+ strategy in a series of workshops and consultation meetings, with the time in between used for consolidating the results and drafting the text.

152. An initial workshop will define the scope and overall goal of the strategy including the strategic intervention areas, while subsequent meetings willserve to clearly define what is to be achieved (and how) in each intervention area.

153. As the REDD+ strategy will be conceived as the princial REDD+ policy document of the country, it will also contain provisions on the following important REDD+ components:

- Social and environmental safeguards
- Expected environmental and social benefits and impacts
- General benefit sharing principles
- Cooperation with civil society and the private sector
- Participation and consultation policy
- Information and communication policy, including feedback and grievance redress mechanism

Table 26: Summary of REDD+ acivities and budget of the REDD+ strategy Récapitulatif des activités et du budget de la stratégie REDD+ (ou cadre des résultats) (Component 2b)

Result Main activity	Main activity or sub-activity	Estimated cost (in thousands) (coût estimé en milliers de dollars)				
		2017	2018	2019	2020	Total
REDD+ strategy development	Consultation meetings	20	30			**50**
Total		**20**	**30**	**0**	**0**	**50**
Governement		$	$	$	$	**$**
UN-REDD		20	20$	$	$	**50$**

2.c. REDD-plus Implementation Framework

2.c.1 REDD+ activity implementation structure

154. Given the fact the emission reduction potential from REDD+ is comparatively low and consequently payments for emission reductions would be limited too, Tunisia pursues a pragmatic approach with regard to the implementation of REDD+ mitigation activities.

155. The principal activities to reduce emissions from deforestation and forest degradation and enhance forest carbon stocks at this stage will be through new projects and activities financed by the Forest Investment Programme (FIP/IP).

156. At present, the FIP/IP envisages to implement three projects, of which two would result in emission reductions from avoided deforestation, degradation or the enhancement of forest carbon stocks. These would thus be within the scope of REDD+.

157. The project plans are based on the identification of the drivers and underlying causes of deforestation and forest degradation and also seek opportunities for the enhancement of forest carbon stocks. An overview of the project components and activities is provided below. For more information, please see the FIP document.

158. In the following, two projects that are being developed under the IP/PIF are described to show in detail which specific REDD+ interventions are foreseen to address the drivers and indirect causes of deforestation and forest degradation.

Project 1: Integrated Landscape management in the least developed regions of Tunisia

RATIONALE, OBJECTIVES AND CHALLENGES OF THE PROJECT

The proposed Project 1 is a large-scale project aiming at meeting numerous constraints of the silvo-pastoral and forest sector, and especially those related to inefficient forest resource inefficient management and degradation, obstacles inherent to the institutional and regulatory framework, weak governance, poverty of the local population and the lack of sector knowledge and monitoring. It is intended to improve the management of agro-silvo-pastoral landscapes and the development of associated value chains, through (i) the implementation of a participatory process of territorial planning at the landscape level, (ii) support to the development of consistent and competitive value chains, (iii) support to the conduct of institutional change and legal reforms related to the management of natural resources , and (iv) improving knowledge and the pastoral and forest ecosystem monitoring.

PROJECT INTERVENTION AREAS

Project 1 will be carried out in the governorates of the Tunisian Northwest (Jendouba, Beja, Le Kef, Siliana, Bizerte) and Midwest (Kasserine, Kairouan and Sidi Bouzid) (cf. Appendix 18). Implementing integrated landscape management pilot practices and techniques (cf. component 1.2) will happen initially on 10 landscape units over a total surface area of around 100 000 ha, selected on the basis of criteria such as:

- Forest and pastoral ecosystems representativeness (according to the national scale),
- Socio-economic development potentiality related to the forests and rangelands,
- Level of exposure of the forests and rangelands users,
- Development priorities defined at the national level,
- Situation urgency as for the protection of the water resources, and
- Synergy and collaboration with the other projects and programmes.

COMPONENT 1: STRENGTHENING RESTORATION AND THE INTEGRATED MANAGEMENT OF AGRO-SILVO-PASTORAL LANDSCAPES

With an approach at the agro-silvo-pastoral landscape scale, that component will aim at improving the management of the ecosystems in order to strengthen their promotion, protection, restoration and resilience faced withto climate change. The activities will come in two subcomponents, corresponding to the planning and to the implementation of the territorial development actions.

COMPONENT 2: DEVELOPMENT OF AGRO-SILVO-PASTORAL VALUE CHAINS

This component will support the development of the the agro-silvo-pastoral value chains, such as those of specific or local agricultural products, sheep/goat meat, NWFP (honey, pinion and Aleppo pine seeds, mushrooms, herbs, and etc.) and wood energy. To this end, the project will provide support through the provision of services to micro-, small and medium enterprises (MSMES) for the development of the value chains. These activities, divided into two sub-components, will be implemented by appropriate public institutions with the support of private consulting firms.

COMPONENT 3: STRENGTHENING OF THE INSTITUTIONAL AND LEGAL FRAMEWORK

This activity will aim at improving the legal and regulatory framework of the natural resource management. It will translate into conducting in-depth analyses of the current legislation, the identification of complementarities and inconsistencies between the various texts and technical support to the Administration for the revision of the Forestry Code and the production of their implementing texts. Proposals will be also made to modify or adapt from cross-cutting regulatory texts provisions affecting closely or from afar the management of forest and pastoral resources.

In view of the findings developed in section 1.6 in accordance with axis 1 of the 2015-2024 SNDGDFP, this activity will support the restructuring of the MARHP and the CRDA, in order to optimize adaptation of their organization to the socio-economic context and the specific characteristics of the forest and pastoral sector, and to ensure the consistency and the quality of their interventions.

EXPECTED GHG EMISSION REDUCTION

The vast majority of the activities planned by Project 1 will generate emission reductions or indirectly strengthen the carbon sequestration. The development of value chains and improving the use and value of forest products will contribute to reduce pressure on the ecosystems, and thereby improve their protection. Components 3 and 4 relating to the institutional and legal framework and the improvement of the knowledge and monitoring will advance the enabling environment of the forest and pastoral sector, to improve the management, enhancement and protection of forests and rangelands. The indirect nature of their impact in terms of reduction of carbon emissions or sequestration prevents their assessment at this stage.

However, during the implementation of the upcoming project, estimates may be made based on sub-component 1.2 activities that will directly result in emission reductions or enhancement of sequestration. For example, the implementation of thinning in stands will result in a productivity gain that can be estimated. Similarly, enhancements, plantations and regeneration of the stands will enable to increase carbon sequestration in forest environments, whose gain can be calculated. The results of these measures cannot however be quantified at this stage, because these activities are to be defined in a concerted manner during the development of the coordinated the preparation of the Integrated Landscape Development Plans.

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Box 2: Integration of the tree in degraded private farmland

RATIONALE, OBJECTIVES AND CHALLENGES OF THE PROJECT

The Tunisian rural and agricultural landscapes are strongly affected by erosion , leading to land degradation and impoverishment, siltation of dams and a reduction in water resources (CNEA, 2008)[85]. This degradation is mainly due to agricultural policies focused on intensive annual crop cultivation and the lack of a rural land use planning strategy taking into account all the social and environmental factors (in particular the vulnerability of soils to erosion). In addition to the clearing of woodlands, this policy, combined with the lack of technical knowledge of the land owners, has led to unsustainable agricultural practices, especially on cropland, leading to a decrease in the amount of organic matter and the fertility of the cultivated soils, and causing or accentuating their degradation.

Mechanisms implemented by Tunisia to encourage landowners to invest in plantations and in marginal lands cultivated in order to reduce soil degradation have so far been ineffective, due to inappropriate incentives, restrictive provisions of the forest regulation and the resulting lack of confidence in the Administration.

The uninterrupted extensive cultivation on these degraded lands or their use as rangeland, beyond negative impacts on soil fertility, water resources and biodiversity, provide limited income to their owner. The importance of the areas in question represents a considerable potential of land whose use and value could be improved, especially in terms of carbon sequestration, climate change resilience and water resources protection.

To meet the issues of protection of land against degradation, a program of Adaptation To Climate Change Of The Territories is being prepared by the DGACTA, with the technical and financial support of AFD. This program will revolve around the participatory planning of natural resource management activities at the level of the territory, resources preservation actions (esp. waters and soils) and the strengthening of the agricultural value chains.

Faced with these same findings, the IP/FIP Project 2 aims, as a complement to PACTE, to promote the integration of plantation forestry, agroforestry or arboriculture in degraded private farming land. It will be based on the design and implementation of an incentivizing innovative financing mechanism supporting investments in tree-, forest- and agroforestry plantations on private degraded land. The objectives are to (i) improve carbon sequestration, (ii) strengthen the protection of soil and water resources, (iii) restore the confidence of private owners toward the administration and the forestry sector, and (iv) increase the income of the owners and local economic development.

PROJECT INTERVENTION AREAS

The project will take place on private properties, damaged or threatened by degradation, whose owners have expressed their interest to take advantage of the incentive mechanisms for the proposed investment. In order to maximize the chances of success of the project activities and to facilitate its replication on a large scale, the intervention area of the project covers the Northern and West-Central territories presenting favorable bioclimatic conditions (especially in terms of precipitation). To maximize the possibilities of identification of owners willing to join the project, the project intervention area has voluntarily been set as wide as possible, so as to integrate the whole surface area of the governorates concerned.

Project 2 will at first seek to finance investments for the realization of tree, forestry or agroforestry plantations on a total area of around 25,000 ha. Any type of property may be affected by investments, regardless of their size. To maximize the areas benefiting from these investments and the positive impacts of the project on the environment, the Project will however be deployed primarily on the large farmlands threatened by degradation. Furthermore, in order to develop the showcase value of the Project initiatives and enhance its replication potential, the diversification of experiences in terms of type and location of target properties and

financed investment category will be sought. Project 2 aims at enabling ultimately the generalisation of the approach developed at the national level, so that the considerable potential of the large tracts of degraded land in the identified governorates can be better used and valued.

COMPONENT 1: ESTABLISHMENT OF AN SUSTAINABLE FINANCING MECHANISM

Prior to the definition of the financing mechanism, studies will be carried out in order to establish a comprehensive review of the regulatory, policy and institutional context in which will operate the funding mechanism and to make use of existing experiences, in Tunisia and other countries of the Mediterranean basin, in terms of financing mechanisms and incentives for the sustainable management of natural resources. On the basis of preliminary studies results, the task will be to define the structure and modalities of implementation (access, organisation, supply, etc.) of the innovative financing mechanism that will help to promote investment on degraded private land.

The mechanism will incorporate, in addition to other potential sources of funding (State, FIP, GCF, donors), a PSE method of remuneration, a priori necessary to make the project attractive to private owners. This PSE system will allow to economically improve the use and value of the two main environmental services of the investments made: soil and water protection and carbon sequestration. The funding mechanism will consist of two separate schemes depending on the type of proposed investment (cf. Sub-components 3.1 and 3.2). Its management structure will involve one (or several) actor (s) as an intermediary between the Forest Administration and private owners, so as to reduce the risk associated with the distrust towards the state services.

The financing mechanism should be designed so as to be able to play the role of a pilot REDD + funding system. Project 2 would thus allow to experiment this mechanism before expanding it nationally and entrusting it the management of funding related to the implementation of the REDD + in Tunisia. Technical and institutional support will be provided in order to formalize institutional anchoring and the functioning of the financing structure, and to make it operational. Intervention and operating procedures will be produced and validated. Capacity building actions will also be implemented to train staff of the funding structure for the application of the different procedures to ensure proper functioning.

COMPONENT 2: SUPPORT TO PRIVATE OWNERS FOR FUNDING APPLICATIONS ON TECHNICAL AND FINANCIAL ASPECTS

On the basis of the results of the feasibility study and the specific studies, and including the identification of the potential and priority intervention areas, the task will be to implement communication and awareness raising actions with private owners of land degraded or threatened by degradation, in order to show the economic valorization potential of these lands and benefits enhancement that could generate a change of practice.

Support to the beneficiaries for putting together the funding applications. The task will be here to provide technical and administrative support to owners interested in the mechanism in access to funding procedures. According to the potentialities identified in sub-component 2.2 and the owner's choices, he will be supported to develop a business plan compatible with the procedure prescribed by the financial mechanism (and to put together the funding application dossier.

COMPONENT 3: INVESTMENTS FOR THE INTEGRATION OF THE TREE IN DEGRADED PRIVATE LAND

[85] *Centre National d'Études Agricoles, 2008. Étude sur l'état de la désertification pour une gestion durable des ressources naturelles en Tunisie/Rapport de la troisième phase/Février 2008*

This component will result in the implementation of the investments planned under the Component 2.3. Depending on the type of proposed investment, owners will contact one desk or the other. The first desk will enable to fund investments for the development of arboriculture (olive, almond trees, fruit trees, etc.) or of agroforestry systems (involving the tree in farming practices). The second desk will finance forestry investments (plantations for timber production or NTFPs) and domestication operations on medicinal and aromatic plants (Rosemary, Myrtle, Buckthorn, etc.) on the rural or pastoral plots threatened by erosion.

In order to ensure the sustainability of the Project and of the investments made in degraded private land, this component will seek to train owners to methods and techniques for the sustainable management of their lands having been the subject of investments under the Project.

EXPECTED GHG EMISSION REDUCTION

The project will allow the absorption of 0.255 Mt CO_2 over 10 years, and 1.7 million of tCO_2 over 30 years. The estimates are based on assumptions of growth in biomass and carbon content of soils, based on 2006 IPCC guidelines and the results of the 2010 Tunisia GHG inventory.

Table 2: CO_2 sequestration by the Project over a 30 years period

	Quantity of carbon by perio (in kTeCO_2)			
	1-10 years	**11-20 years**	**21-30 years**	**TOTAL**
Biomass Carbon	155	563	665	**1 383**
Soil Carbon	103	125	125	**353**
Total sequestered carbon	**258**	**688**	**790**	**1 736**

The estimates of amount of carbon sequestered by the Project are based on the following assumptions:

- 25 000 hectares of degraded private land will be concerned by investments, distributed into 10 000 ha of forest plantation and 15 000 ha of fruit tree plantations (half olive groves and half other fruitree and agroforestry plantations).
- The estimate of annual increases in forest plantations is based on the example of Aleppo Pine plantation[86]s and in applying the IPCC methodology.
- Estimation of the annual increments of arboreal plantation is based on the figures used by the year 2010 GHG inventory, and also applying the IPCC methodology.
- For the storage of carbon from soils, the approach is also based on the results of the inventory of GHG by 2010, based on the IPCC methodology (and reducing the estimates so as to apply the precautionary principle).

160. The implementation of these projects will be managed through a national programme management unit under MAHRP (see Figure 9). At the regional and local level, the project activities will be supported by units under the CRDA (technical forestry services). For their implementation, the projects will cooperate with private landowners (in particular for project n° 2) and local people, companies and communities. Further, implementation will be supported by consulting companies (services to be tendered).

[86] *Sghaier T. & Ammari Y., 2012. Croissance et production du pin d'Alep en Tunisie, INRGR, in Ecologia mediterranea, vol. 38*

2.c.2 Preliminary analysis of carbon rights

161. With its REDD+ strategy, Tunisia intends to contribute to the efforts of the international community to reduce global GHG emissions. The implementation of the strategy must be supported by national and international funding, both public and private, with funding needs that will evolve over time. Tunisia wants to emphasize its desire to use these funds in a responsible, effective, transparent and fair manner. To do this, it is particularly necessary to clarify the legal status of carbon ownership and rights, in order to provide a general basis for benefit sharing design and thus facilitate the implementation of REDD+ activities

BOX 2C-2: CARBON OWNERSHIP

The definition of the carbon ownership should take account of the following facts:

- Payments of compensation (for environmental services) and the incentives are not necessarily directly related to the carbon ownership, especially if these payments will be determined by performance indicators other than CO_2 emissions. It is therefore necessary to distinguish the question of the legal and formal ownership of carbon from that of the legitimate rights, in a REDD+ revenues sharing and funding allocation system. Players incurring costs and contributing to the investment required to implement the REDD+ strategy shall be taken into account in a fair manner in the sharing of benefits.
- The question on carbon ownership may not depend solely on the land status, linked to the owner of the land, but must also take into account the ownership of the trees (aboveground biomass) on that land as well as use rights
- Currently, no legislation in Tunisia explicitly mentions carbon rights. The Tunisian REDD+ strategy must therefore provide also a legal basis, adapted to the national context and realities, and in line with existing international laws and conventions.
- Land tenure of forests and rangelands in Tunisia lacks clarity (vagueness of boundaries, outdated property titles, boundaries undone, ownership without title, administrative delimitation vague and challenged by communities, excessive number of users, etc.)

Forest land

162. The Tunisian public forest dwellers enjoy use rights that give them a priority to benefit from the forest and its products (managed gathering of firewood, right of use for grazing, collection of NTFPS for household use, etc.). On the other hand, the carbon right is not mentioned in the Forest Code. Tunisian forests are, in overwhelming majority, property of the State. As such, the State would a priori reap the benefits arising from the sale of carbon from the REDD+ mechanism. However, as stated above, forests are subject to rights of use for the benefit of their inhabitants. Consequently, forest carbon could also be classified as a forest product and carbon rights be linked also to the right of use.. However, with regard to use rights, it would be difficult to consider individual use rights, as they are not necessarily linked to specific quantifiable areas.. A solution here could be to

involve the forest-related agricultural development groups (GDA) so that they act a representative entities on behalf of the involved population.

Rangelands

163. Collective rangelands meant for common pastoral use are the main type of rangelands concerned by REDD+ activities. These rangelands belong to communities. Due to the imprecise limitations of these rangelands (for lack of final delineation since the abrogation of customary rules, but also because of the extensions of the Sahara at their expense and forest clearing for farming development), carbon rights will be difficult to clarify and require in priority an improvement of boundary delineation. The problem is similar to the alfatiers lands which, despite their importance for REDD+, are neither demarcated nor mapped. Furthermore, in order to allow a better recognition of non-derogable rights of the users of the rangelands as recipients of possible revenues from the carbon market, it will be necessary to clearly identify the stakeholders whose rights, territories and livelihoods will be affected by REDD+ activities.

2.c.3 Investment and Benefit Sharing Plan

164. The benefit sharing plan is a vital component for REDD+implementation: it must be worked out in a transparent manner and with the full participation of all stakeholders, in particular civil society and the private sector. An independent working group, under the auspices of the CN, will guide this important step.

165. The benefit sharing plan will be anchored in the national strategy REDD+ and will also take the form of a regulation. In this way, it will provide a high level of legal security, which is particularly important for the private sector (investment security).

166. The benefit sharing plan and the regulation should be supplemented by an "'investment plan and guidance", which details the investments available for a set of defined REDD+ activities. Again, Tunisia will make use of the FIP/IP to pilot an investment and benefit sharing scheme related to emission reductions in the forestry sector. This investment plan will encompass or be in line with the FIP/IP. See Figure 4 below (pilot REDD+ financing mechanism) on how investments would be made and benefits would be shared in case of the envisaged Project 2 under the FIP/IP.

167. Available funds being limited, the working group will also have to suggest priorities for investment (prioritizing for example certain areas or activities). The experience of other countries suggests that equity considerations play a very important role in the benefit-sharing discussions. Therefore, while REDD+ is first of all a mechanism based on performance, there are often complaints so that past performance can also be considered (including the protection and management of forests).

168. The following items, about the regulation on benefit sharing and investment plan, will need to be carefully defined. These elements will find a first application as part of the envisaged Project 2 of the FIP/IP;. Based on the feedback from the project, the working group will review and update these elements as applicable):

- List of REDD+ activities eligible for an investment: eligibility criteria for the investment, including the criteria on the recipients, the location, the type of land use, the social and environmental guarantees, etc.
- Type and quantity of investments (cash, in-kind, technical or other; amount of money per unit, for example USD/ha)

- Ownership of carbon rights related to the REDD+activities and investments
- Benefit sharing from the sale of emission reductions. If the Government implements financial incentives to trigger investments (as a payment for afforestation / reforestation based on surface area) or initial investment towards energy production infrastructure, one could contemplate that beneficiaries leave all their carbon rights to the Government. REDD+ benefits would be then delivered in the form of initial investments or conditional payments, and the Government would become the sole recipient of payments related to emission reductions. Carbon rights transfer to the State, in Exchange for payments that are not directly related to emission reductions (while being linked to them to some extent), is an approach that would enable to build a relatively simple benefit sharing system.

169. It could be envisaged that the beneficiaries of REDD+ investment enter into a contractual relationship with the State. The rules would be supplemented by a number of contracts for each of the main investment activities. These contracts would cover all of the details that are not covered by the regulation.

170. The benefit sharing working group will need to rely on a number of complementary studies and will work in close coordination with working groups on safeguards .

2.c.4 REDD+ financial system

171. Preparing for REDD+ implementation entails developing a financial system that with the following functions:

- Receiving and administering upfront investment funding for REDD+ from bilateral or multilateral development cooperation, UN climate funds, the private sector or others
- Channeling (transacting) this upfront-finance to REDD+ actors (government agencies, communal organizations, private sector, NGOs, etc.) that will be invested into activities to reduce deforestation or degradation or afforestation / reforestation activities
- Marketing and selling of emission reductions to bi- or multilateral funds, governments and the private sector on the voluntary carbon market or within national/subnational cap-and trade systems.
- Re-investing returns from emission reductions into REDD+ activities (see point 2 above).

172. Establishing and running a transparent and accountable REDD+ financial system is key for successful REDD+ implementation in many ways. It provides donors and buyers of emission reductions with the necessary confidence that their investments will be effectively used for the benefit of REDD+ and that the entities that have contributed to the country's REDD+ performance (i.e. emission reductions) are rewarded accordingly.

173. A transparent and accountable financial system provides REDD+ actors, in particular the private sector (including potential foreign investors) but also communal actors, with more investment security. As such, this may help to attract private sector investment into REDD+ activities.

174. Finally, it helps NGOs, civil society and the public in general to build trust in and ownership for a REDD+ program. This can lead to a higher acceptance of REDD+ programmes.

175. A REDD+ financial system can take the shape of a national fund or simply a budget line under the national treasury or any other form. However, as the expectation is that REDD+ revenus are re-invested into REDD+ activities and that investments as well as disbursement are linked to

performance and safeguard policies, countries are well-advised to establish a seperate REDD+ fund or use existing forest or environmental funds for REDD+.

176. However, in light of the currently estimated limited REDD+ potential, the establishment of a national REDD+ fund or similar structure would seem out of place and would require efforts and financial resources that may not be justified at present. Hence, Tunisia will pilot a financing mechanism under the envisaged l Project 2 of the FIP/IP. This project aims to provide incentives or rewards to private land owners for the rehabilitation of degraded lands e.g. through the establishment of forest plantations or arboriculture. For this, a financing mechanism is envisaged that is to be privately-managed e.g. by a public financial institution such as the *Caisse des Dépôt et Consignations* in Tunisia.

177.

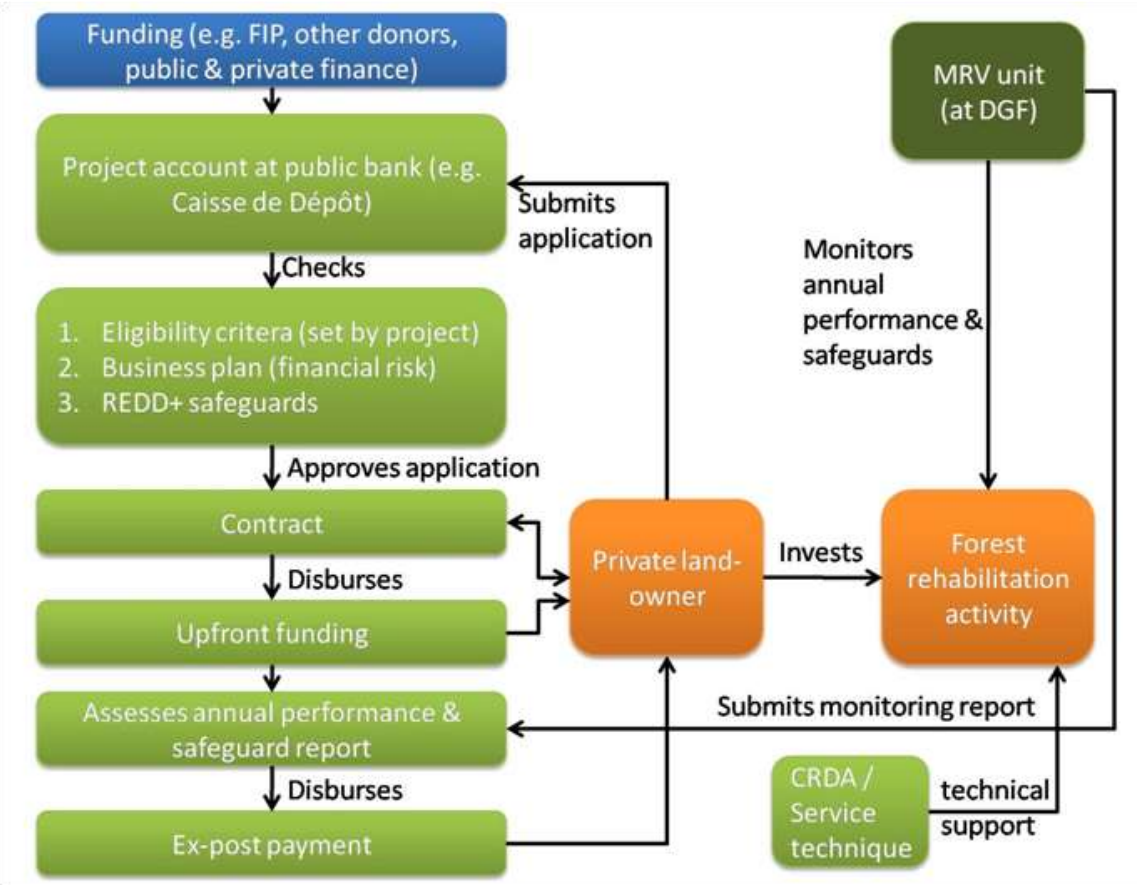

Figure 13: Pilot REDD+ financing mechanism implemented as part of FIP Project 2

178. An established institution such as la Caisse des Dépôts et Consignation has the advantage to be able to rely on operational and experienced banking structures for everyday management of funds and disbursements but also for risk management (financial). Beyond these traditional financial management structures, additional ones specific to REDD+ are necessary.

179. As shown in Figure 14, the public bank would open a particular project account which would be capitalized in this case from FIP/IP funding, though other donors or public and private finance may also contribute.

180. As part of the project implementation, private landowners would be made aware of the financing opportunity and would apply for funding related to a specific forest rehabilitation activity.

181. The project would also set up eligibility criteria for funding, such as the type of rehabilitation activities, cost norms, eligible areas and persons, etc. To some extent these criteria would come from the criteria established by the working group on benefit-sharing.

182. A team consisting of a financial manager and a forestry specialist who has received a training on REDD+ safeguards would review these applications and either approve or refuse them. Approval of the application would lead to a contract between the financing institution and the land owner. The contract would stipulate among other things the duration of the activity and financial support, type of payment (cash or in-kind, up-front or ex-post or both), performance conditionalities related to the payment (e.g. area annually reforested), exact area subject to this contract, monitoring interval, etc. In addition, through the contract, the landowner would cede the carbon rights to the government (in return for the investment declared in the contract).

183. Upon contract signature, the landowner may receive an upfront payment if this has been negotiated. The land owner would then proceed to invest the money into the rehabilitation of the land subject to the contract. Depending on the contract, he may also receive technical support from the CRDA.

184. The national MRV unit or a local sub-unit as applicable would monitor all areas subject to contracting. For each area under contract, a short monitoring report would be filed and send to the account management team. The team would review the report and based on the result issue a payment order related to the achieved performance (e.g. if only 70% of the trees were planted then only 70% of the agreed payment would be made). This monitoring and disbursement cycle would continue until the end of the contract duration.

185. After a pilot phase of 2-3 years of operation, the CN would evaluate the performance of the financing mechanism and its general suitability for REDD+. Based on the results of the CN may decide to initate the establishment of a larger REDD+ financing mechanism.

2.c.5 REDD+ Registry

186. A national REDD+ registry is another key component to assure donors, emission reduction buyers and the national and international climate change community in general of the credibility of achieved emission reductions. In addition, a REDD+ registry may be a valuable complement to the national GHG inventory, as forest related emissions and removals would be available "on request" for reporting to the UNFCCC.

187. Technically, a registry for REDD+ is a (geospatial) database where information about emissions, emission reductions, issuance of credits (conversion of emission reductions into tradable units), transactions of credits and retirement of credits may be recorded. This involves information about

- By whom (which entity), where (which area) and when emissions where caused;
- by whom, where and when have the emissions reductions been generated;
- who requested the issuance of credits and who has purchased or withdrawn those credits.

188. A principal aim of a registry is to prevent double counting of emission reductions. This is to ensure robust accounting and prevent fraud with the sales of emission reductions.

189. A registry that - based on the monitoring results - also records the location/area of emission reductions and the responsible entity is an ideal tool for allocating REDD+ revenues, as it tracks the performance of areas (e.g. concessions, administrative areas, etc.) and entities over time.

190. Providing public access to a registry (at least to non-confidential information) increases transparency and accountability. Registries should also record the number of emission reductions set-aside as a buffer for loss events (non-permanence of emission reductions). A suffciently filled buffer can increase donor's or buyer's confidence in the permanence of emission reductions and may be an important investment criterium.

191. Registries may be operated by the government or outsourced to a third party. Annex I parties to the Kyoto Protocol are operating their own registries to record and track the "whereabouts" and transactions or retirement of Kyoto (Protocol) units. On the other side, the Verified Carbon Standard relies on third parties to manage its registry (e.g. Markit). For example, the government of the Democratic Republic of Congo has - for its Emission Reduction Programme under the FCPF Carbon Fund - decided to develop its own Registry, but the operation of the physical infrastructure (server) is envisaged to be operated by a third party.

192. At present, Tunisia does not operate a registry that could be used for REDD+ and in consequence a REDD+ registry concept will be developed, discussed and a REDD+ registry be put in place. The following issues will be considered and taken into account when desiging the REDD+ registry:

- What are the different purposes of the REDD+ registry? What kind of functions does it need and what kind of information will be stored?
- Who should host and operate the registry (which government institution or a third party)?
- A major input to the registry is GHG emission related information coming from the country's monitoring system. As such, putting the registry with the entity responsible for monitoring may seem logical, in particular as it can also be used for generating GHG reports under the UNFCCC. However, since the registry would also be used for financial transactions, other set-ups are also possible. Ultimately, the registry could also consist of different linked databases hosted by different organizations or a central database with different access regimes for the different institutions involved. Trading registries also need strong security protocols and anti-fraud measures in place.

2.c.6 Capacity building

193. Capacity building for REDD+ is multifaceted and clearly depends on the level of capacity of the different REDD+ actors. In addition, in order to design and put into practice a good REDD+ capacity building concept, one has to have a good picture of how REDD+ will be specifically implemented in the country at question.

194. At this stage, neither is very clear in Tunisia and as such REDD+ capacity building has to be understood as an evolving process. As more information becomes available on how REDD+ is to be implemented and who will be responsible, action of additional capacity building needs have to be identified and training has to be provided accordingly.

195. It is common practice to carry out a capacity building needs assessment and this is what is suggested here as a first step. The capacity building needs assessment will focus on the REDD+ components where most clarity exists with regard to what has to be done and who will be doing it.

196. In addition, a capacity building fund is proposed to finance additional capacity building measures on the road to achieve REDD+ Readiness. In addition, the FIP/IP has allocated substantial funding for capacity building, which is also relevant to REDD+.

Table 27: Summary of REDD+ Implementation Framework Activities and Budget (component 2c)

Main Activity	Sub-activity	Estimated Cost (in thousands)				
		2017	2018	2019	2020	Total
Carbon rights	Legal analysis	25				**25**
	Draft regulation	Governmental process				**0**
Systems of benefit sharing	Development and adoption of a benefit-sharing concept		50			**50**
	Drafting of benefit sharing regulation	Within the scope of work of the working group on benefit sharing (1a)				**0**
	Development benefit-sharing contracts			25		**25**
REDD+ pilot Fund	Design study	Financed by the FIP				**0**
	Establishment and operation of the REDD+ Fund	Financed by the FIP				**0**
REDD+ Registry	Design study		50			**50**
Capacity building	Capacity needs assessments (recurrent)	Within the scope of work of CN-REDD (1a)				**0**
	Financing of a wide range of capacity building measures	150	150	150	150	**600**
Total		**175**	**250**	**175**	**150**	**750**
Government		-	-	-	-	**-**
UN-REDD		**175**	**250**	**175**	**150**	**750**

2.d. Social and Environmental Impacts during Readiness Preparation and REDD+ Implementation

197. REDD+ implementation in general (under the UNFCCC) has to consider the so-called Cancun Safeguards which stipulate a number of general principles or criteria that REDD+ implementation should comply with. In addition, The FCPF requires carrying out a Strategic Social and Environmental Assessmen (SESA)t and the establishment of an Environmental and Social Management Framework (ESMF) to ensure compliance with these safeguards and the applicable WB operational policies. The UN-REDD Programme has developed its own set of Social and Environmental Principles and Criteria. In addition, a cooperation of NGOs has released the Social and Environmental Standards, a generic set of principles, criteria and indicators that can be adapted to a country's circumstances.

198. Being a UN-REDD country for targeted support but also keeping open the possibility forapplying for Readiness funding from the FCPF, the GoT will carry out a SESA which will inform the development of the ESMF. The SESA and later the ESMF will integrate the UN-REDD Social and Environmental Principles and Criteria to ensure compliane under both the FCPF and the UN-REDD Programme.

199. The principal measures to be undertaken related to REDD+ safeguards are:

- Setting up a working group that will oversee and guide the national safeguard process (see section 1.a.1)
- Awareness raising and capacity building on REDD+ safeguards both within the government but also for civil society and the private sector, including local actors
- Concerted adoption of a set of social and environmental safeguards at the country level, ideally formulated as principles, criteria and indicators
- Consultative identification of social and environmental risks related to REDD+
- Development of mitigation actions to reduce social and environmental risks ;
- Development and operationalization of a system to ensure REDD+ activities comply with the adopted REDD+ safeguards (approval system), including a safeguards information system (see section 4.b.4).

200. A first assessment of the current status is provided here using the "The Country Approach to Safeguards Tool" (CAST) developed by the UN-REDD Programme. According to the UN-REDD Programme *[...] CAST provides countries with an Excel-based, interactive tool to plan and review the development of their approaches to REDD+ safeguards. It constitutes a tool to be voluntarily applied by REDD+ countries in order to support their planning efforts for activities related to safeguards and SIS, carried out in response to the relevant UNFCCC decisions. CAST includes a comprehensive library of tools and resources relevant to country approaches to safeguards, including both those of UN-REDD as well as those developed by other key programmes and initiatives [...]*

201. Functions of the CAST include [...]:

- Identify and prioritize activities (and/or review activities undertaken to date) to develop or further develop their approach to safeguards in the context of the national REDD+ strategy;
- Identify tools, guidelines and resources available to support each activity or area of work;
- Clarify how the processes and tools of various safeguards approaches, including those of the FCPF's Strategic Environmental and Social Assessment (SESA) and the CCBA-CARE

REDD+ Social and Environmental Standards (REDD+ SES), correspond to generic steps and activities to plan and implement a country approach to safeguards [...].

202. An overview of the preliminary results of the CAST are presented in Figure 14.Output from the cast was also used to further define and budget activities related to REDD+ safeguards. An excel file containing the results of the CAST is provided together with the R-PP.

UN-REDD

Country Approach to Safeguards Tool (CAST)

Part 4: Planning

Please choose the expected date for (continue) undertaking the activities: January 2017

		Recurring action *As needed*	Immediate action *Next 6 months*	Short-term activity *Next 12-18 months*	Mid-term activity *2-3 years*	Long-term activity *4-5 years*	No further action	
	Section A - Stakeholder analysis, awareness raising and capacity-building							
A.1	Conduct a stakeholder mapping exercise.		X					A.1
A.2	Develop a process to inform and engage REDD+ stakeholders.			X				A.2
A.3	Raise awareness of the concept of REDD+ safeguards.	X						A.3
A.4	Raise awareness of potential social and environmental risks and benefits related to REDD+ at the country level.	X						A.4
A.5	Develop the capacity of stakeholders to engage in the development of the country approach to safeguards.			X				A.5
A.6	Establish a multi-stakeholder safeguards working group, committee or task force.			X				A.6
	country approach to safeguards, including development of a national set of safeguards when appropriate							
B.1	Define institutional and procedural arrangements for the country approach to safeguards.			X				B.1
B.2	Design a consultative & participatory process for the development of the country approach to safeguards.			X				B.2
B.3	Define objectives of the country approach to safeguards, identifying key social and environmental issues for the country.			X				B.3
B.4	Develop a national-level interpretation of REDD+ safeguards, in the form of standards or principles and criteria (if the country has elected to				X			B.4
	Section C - Defining or developing safeguard policies, laws and regulations							
C.1	Conduct a gap analysis of existing PLRs.			X				C.1
C.2	Develop new PLRs and/or amend existing PLRs (as necessary).				X			C.2
	Section D - Collecting information on safeguards							
D.1	Conduct a gap analysis of existing information systems.			X				D.1
D.2	Develop/adapt indicators related to REDD+ safeguards.				X			D.2
D.3	Apply methods and methodologies for the collection of information.	X						D.3
D.4	Validate the methodological approach for the collection of safeguard information.				X			D.4
	Section E - Validating and sharing information on							
E.1	Develop a framework for the provision of information.			X				E.1
E.2	Develop quality assurance procedures for the safeguard information.				X			E.2
E.3	Conduct a multi-stakeholder analysis and assessment of safeguard information.			X				E.3
E.4	Develop an approach to store and manage safeguard-related information over time.				X			E.4
E.5	Share publically information on how safeguards are being addressed and respected.	X						E.5

Figure 14: Results from the CAST

203. The output from the CAST shows that a substantial amount of work will need to be undertaken in order to adequately address the issue of safeguards (see activity and budget table). This work will be guided by the working group on safeguards established under CN. One of the first steps of the Safeguards Working Group will be to commission the Strategic Environmental and Social Assessment, which is the basis for much of the following work. With regard to the Environmental and Social Management Framework (ESMF), it is envisaged to set-up the ESMF as a unit within the

funding mechanism (seeFigure 13). This will ensure that compliance with safeguards is integrated into the evaluation of REDD+ activities prior to their financing. More details on the safeguard system are presented below.

204. **Implementation of a working group that will supervise and guide the national safeguards process.** As a first step, CN will organize a meeting of various actors at the national level in order to formally establish a working group which will oversee the safeguard process. This working group will be composed of representatives of the Government, civil society, the private sector and research centres. This team will be the pillar of the safeguard process, and will work closely with the CN, while regularly consulting a wider group of actors. In addition, technical evaluations will be carried out by third parties after calls for tenders.

205. Awareness raising and capacity-building on REDD+ safeguards, within the Government as well as for the civil society and the private sector, including local actors. As a first step, the above described working group will present a methodology and a roadmap for the development of the Tunisia safeguards. This roadmap must be validated by the wider group of actors.

206. The group will work in cooperation with the Working Group acting on the capacity strengthening required to identify the needs in relation with the safeguards.. He will then establish a training programme on the safeguards. This will ensure that all stakeholders will be able to participate significantly in the national safeguards process.

207. **Identification of social and environmental risks associated with REDD+**. The first technical evaluation commissioned by the Working Group will be an assessment of the social and environmental risks. This study will identify environmental and social risk potentials associated with the implementation of REDD +, but also the opportunities and social and environmental co-benefits (such as an increase of the rural populations income, or natural resources preservation, etc.). It will also incorporate an analysis of gaps in existing laws and policies, in order to know to what extent national policies and laws will be able to contribute to mitigate the identified risks. For this analysis, the working group will make use of the Benefits and Risks Tool (BeRT) developed by UN-REDD to support countries in addressing and respecting the Cancun safeguards. T**he results of this study will be communicated to a wide range of actors**, including actors at the local level.

208. **Consultation and adoption of a set of social and environmental safeguards at country level.** From the results of this study, the Working Group on the safeguards can begin to formulate the national REDD+ principles, criteria and indicators In this framework, many workshops will be organized, both at the national and at the local level (in pilot areas or REDD+ intervention areas). This step will be finalized during the validation of a set of principles, criteria and national indicators which will be part of the national REDD + strategy.

209. Development and implementation of a system to ensure that REDD + activities conform to the REDD + safeguards adopted, including a system of information on safeguards. From these operational safeguards, the Working Group will propose a system of monitoring and verification of the conformity of the safeguards during the implementation of REDD +. As mentioned above, the checking of safeguards compliance through the REDD + Fund or the funding mechanism is planned. If necessary, this proposal may be performed by another actor than the working group.

210. **Awareness raising to the free, prior and informed consent.** Finally, once the REDD + area of intervention (pilot area) is be clearly identified, the safeguards working group may initiate and supervise a local awareness raising campaign to inform all people - especially civil society - on

safeguards and rights in the REDD + process. This awareness raising campaign will consist of numerous meetings with local populations and the distributions of communication material. It will be conducted by a third party.

211. With a view towards the socio-economic factors related to deforestation and forest degradation as well as potential REDD+ activities, specifically the following issues will be further addressed elaborated by the working group on safeguards:

212. Based on the fact that the majority of forest users (and thus the target group of many REDD+ activities) is considered to be poor, REDD+ activities must not result in the further deteriation of people's socio-economic situation but rather seek to improve it. This means that access to forest resources should not be restricted, unless this is inevitable for the ecosystem to recover from its degraded status. In such cases, compensation payments or equivalent in-kind contributions would be needed to at least compensate for the temporary loss of access to certain forest resources.

213. Likewise, it will be very important to carry out a thorough information and sensibilization campaign in the REDD+ intervention areas to ensure that people understand what REDD+ activities are and what consequences these activities may have on their livelihoods, before they consent to participate. Given people's history with law enforcement, such information and sensibilization campaigns are best conducted by civil society organisation. It is imperative that the principle of free, prior and informed consent is not only formulated but also effectively put into practice.

214. Though unlikely to be the case, the involvement of the private sector in REDD+ activities must not lead to the (further) marginalization or the local forest-dependent population. As in a) above, the granting of e.g. concession areas must not result in access restrictions that would lead to a deterioation of the socio-economic situation. It must be ensured that people retain their legal use rights and that compensation is provided in case (temporary) access restrictions are put in place.

215. Tunisia has a successful history of reforestation and thus it is likely that reforestation and enrichtment planting activities will play a role in REDD+ implementation to rehabilitate degraded forest lands and increase forest (re)growth. Safeguards must be put in place to ensure that natural forests and other vegetation are not cleared to make place for e.g. faster growign monoculture plantations.

Table 28: Summary of Social and Environmental Impacts during Readiness Preparation and REDD-plus Implementation Activities and Budget (Component 2d)

Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2017	2018	2019	2020	Total
Awareness raising and capacity building	Raise awareness of the concept of REDD+ safeguards and to potential environmental riks and to joint-benefits linked with REDD+		30	30		**60**
	Develop the capacity of stakeholders to engage in the development of the country approach to safeguards.	Included in capacity building budget (2c)				**0**
	Define institutional and procedural arrangements for the country approach to safeguards.	Within the scope of work of the working group on safeguards (1a)				
Preparing the development of the country approach to safeguards, including development of a national set of safeguards	Design a consultative & participatory process for the development of the country approach to safeguards.		100	100		**200**
	Define objectives of the country approach to safeguards, identifying key social and environmental issues for the country.	Included above				**0**
	Develop a national-level interpretation of REDD+ safeguards, in the form of standards or principles and criteria	Included above				**0**
Defining or developing safeguard policies, laws and regulations (PLRs)	Conduct a gap analysis of existing PLRs.	Included in risk assessment				**0**
	Develop new PLRs and/or amend existing PLRs (as necessary).	Within the scope of work of the working group on safeguards (1a)				**0**
Risk analysis / ESMF	Comission SESA (one or several studies)		50			**50**
	Develop risk mitigation activities	Within the scope of work of the working group on safeguards (1a)				**0**
	Design study for ESMF			50		**50**
	Develop standard operating procedures for ESMF	Included in above				**0**
	Operation of the ESMF unit	Will be piloted as part of the pilot REDD+ finance mechanism under FIP Project 2				**0**
FPIC campaign	Desing and print of communication documents			50	50	**100**
Total		**0**	**180**	**230**	**50**	**460**
Government						
UN-REDD		**0**	**180**	**230**	**50**	**460**

Component 3. Develop a National Reference Forest Emission Level

216. This section describes the necessary steps and components needed for developing a reference emission level. It identifies available data and methods, as well as gaps. Where possible, options are selected on a preliminary basis. Where needed, additional activities are suggested to develop the REL.

217. A reference emission level sets the benchmark against which the future performance of a country or subnational jurisdiction in terms of forest-related GHG emissions is evaluated. For the development of the REL, a number of choices, including general carbon accounting choices, have to be made:

- Selection of the UNFCCC REDD+ activities to account for, i.e. selection of sources and sinks
- Selection of carbon pools and GHG to account for
- Forest definition for the purpose of REDD+ or the GHG inventory in general

218. The more REL specific choices are:

- Selection of a historical reference period to calculate the historical REL.
- A methodology for calculating historical (or in general) emissions.
- Depending on the selected sources and sinks, this may require different methodologies, i.e. effectively stratifying the REL or accounting area in general.

219. Different methodologies can be employed to calculate emissions and removals for the different sources and sinks. In general, the IPCC differentiates between different TIERs. Higher TIERs come with advances data demand and usually make use of stock-difference methods. Lower tiers usually use gain-loss methods. It may also be an option to mix methods and use different TIERs for different sources and sinks initially and gradually improve methods and data.

220. Consistency with the national GHG inventory should be a priority. Ideally, accounting for REDD+ will improve reporting of GHG in the AFOLU sector under the UNFCCC. As such, data and methods should be consistent to the extent possible.

221. If historical emissions are deemed to not be representative of future emissions, then a method for adjusting the historical REL (trend, regression analysis, development plans etc.)

222. Application of the methodologies will result only in activity data (e.g. areas deforested or volume extracted / year for example). In addition, emission factors have to be developed. If not available, development of country specific emission factors should be a priority. Component 3 of this R-PP details each of these aspects.

223. It is important to mention the considerable work carried out by the DGF, in cooperation with the GIZ, to develop appropriate mitigation measures at the national level (National Appropriate Mitigation Action: NAMA) in the forest sector. The proposals focused exclusively on afforestation / reforestation actions. Their reference scenario is therefore of limited use but the data collected and used in the NAMAs may be used for the development of the REL.

224. In addition, Tunisia has also published its planned Contribution determined at the national level (Intended Nationally Determined Contribution: INDC), which includes targets in the forestry sector. These objectives are based on the proposals of the aforementioned NAMAs. The development of the REL and the REDD+ strategy supersede these objectives and the Tunisian Government should update his INDC according to the REDD+ progress..

3.a. GHG Emission sources and sinks

225. Based on the preliminary analysis of drivers of deforestation and forest degradation, the following emission sources and sinks will be considered by a Tunisian REDD+ Programme (see Table 29).

Table 29: Sources and sinks included in REDD+ carbon accounting

SOURCES/SINKS	INCLUDED?	JUSTIFICATION / EXPLANATION
Emissions from deforestation (source)	Yes	Even though deforestation (forest land to non-forest land) is not a major historical emission source (approx. 5,000 ha / year) and will unlikely become one in the future, emissions from deforestation usually have to be accounted for.
Emissions from degradation (source)	Yes	Considering the data from the national GHG inventory, fuel wood use and charcoal production cause approx. 3.2 million tCO_2 / year, while other wood use results in another 400,000 tCO_2 / year. As a result, degradation is likely to be the principal source of forest-related emissions and thus emissions from degradation will be inlcuded.
Carbon stock enhancement: afforestation, reforestation or revegetation activities for transitions from non-forest land to forest land (sink)	Yes	Tunisia has and continues to implement an ambitious afforestation/reforestation and forest rehabilitation programme. From 2002-2011, approx. 50,000 ha of forest plantations were carried out (not considering rangeland and windbreaks). Consequently, carbon stock enhancements from afforestation/reforestation activities will be included.
Carbon stock enhhancement from natural forest regrowth for forest land remaining forest land (sink)	Yes	Considering the data from the national GHG inventory, forests in Tunisia and AFOLU sector are a net carbon sink with approx. 13.6 million tCO_2 sequestered every year (gross). Consequently, Tunisia will account for removals from forest regrowth on forest land remaining forest land.
Conservation of carbon stocks	Yes	Conservation of carbon stocks is considered as an activity during REDD+ implementation and emissions and removals from this activitiy will be captured by accounting for emissions and removals from deforestation and degradation.

Sustainable management of forest	Yes	Sustainable management of forests is considered as an activity during REDD+ implementation and emissions and removals from this activitiy will be captured by accounting for emissions and removals from degradation.

3.b. Stratification

226. Since Tunisa will take the different forest-related emissions sources and sinks into account, it may consider a stratification of its reference emission level and carbon accounting system in general.

227. Stratification in general serves the purpose of increasing the accuracy of results (while at the same time often reducing data collection costs).

228. Generally accepted conditions for REL stratification are:

    1. There is little to no overlap between strata.
    2. Strata can be clearly delineated.
    3. Amodelled / documented evidence-based approach to REL / baseline calculation is used rather than historic analysis, including e.g. the use of adjustment factors
    4. The underlying pattern of deforestation (reference scenario), agents / drivers and underlying causes of deforestation and degradation differ significantly between strata.
    5. Stratification significantly improves the accuracy of the REL estimate.

229. Further, emissions from anyone strata should be of a scale that justify a separate REL strata in terms of data collection costs.

Tunisia may consider anyone of the following strata:

- Emissions from unplanned deforestation (illegal clearing of forest land);
- Emissions from planned deforestation, e.g. from urban spread, road building etc.;
- Emissions from unplanned degradation (illegal logging and fuelwood extraction);
- Emissions from planned degradation (planned timber harvest);
- Removals from afforestation, reforestation and enrichtment planting activities;
- Removals from forest regrowth.

230. Whether or not stratification should be employed does also depend on the specific methodologies used to quantify emission and removals. If e.g. a stock-difference method based e.g. on a permanent sample plot system is used for estimating GHG emission and removals over the entire country, then no stratification is needed. If however gain-loss methods are to be used, then stratification does make sense to better estimate emissions and removals of particular activities. For example, emission from planned timber harvesting could be calculated based on harvesting statistics, while emissions from illegal logging and wood extraction would need to estimated using e.g. sample plots or transects, a model or other means (because no reliable statistics are available). Likewise, removals from (newly) established plantations will differ from removals from natural forest stands or old plantations.

231. As such, the option of stratification of the REL and carbon accounting must be investigated further during R-PP implementation.

3.c. Carbon pools & GHG

232. In its 2010 GHG inventory report, Tunisia has reported on all IPCC carbon pools. These include:

- Above-ground biomass (AGB)

- Below-ground biomass (BGB)
- Dead organic matter (DOM), including deadwood and litter
- Soil organic carbon (SOC)

233. Emissions from the Harvested Wood Products pool (HWP) were also reported. However, revision of the GHG inventory report by the UNFCCC lead to the conclusions that emissions from the HWP pool belong in another category. As such, it is considered that the HWP pool was not reported. Table 30 below provides a rationale for the in- or exclusion of carbon pools for the purpose of REDD+.

Table 30: Carbon Pools

Carbon Pools	Selected?	Justification / Explanation
Above Ground Biomass (ABG)	Yes	Emissions or removals from AGB usually constitute the majority of emissions/removals from deforestation, forest degradation and enhancement of forest carbon stocks, though in mediteranean forest ecosystems the ratios of AGB to BGB or AGB to SOC will be much lower than in tropical forest ecosystems. The 2010 GHG inventory shows that AGB constitutes approx. 30% of the total carbon stock.In addition. emissions reductions and removals during REDD+ implementation are expected to result in a major increase of the AGB carbon pool compared to the reference emission level. In consequence, this pool must be included.
Below Ground Biomass (BGB)	Yes	According to the national GHG inventory, BGB accounts for approx. 12% of the total forest carbon stock. BGB is usually estimated using root-shoot ratios, which at a minimum are 20%. The BGB pool is thus considered to be significant. Further, emissions reductions and removals during REDD+ implementation are expected to result in a major increase of the AGB carbon pool and hence also the BGB carbon pool compared to the reference emission level. In consequence, this pool must be included.
Dead Wood (DOM 1)	Yes	According to the national GHG inventory, deadwood and litter make up 29% of the DOM pool. Degradation likely leads to an increase in the DOM pool while deforestation can lead to both an increase in the DOM pool as well as emissions from the DOM (e.g. in case of burning). Since the national GHG inventory has quantified emissions from the DOM pool, it is recommended to also include them.
Soil Organic Carbon (SOC)	Yes	According to the national GHG inventory, SOC accunts for 30% of the total carbon stock in forests. As such this carbon pool is clearly significant. Deforestation that is followed by conversion to agriculture,

		involving soil disturbance, would result in emissions from the SOC. As such, it is recommend to include this carbon pool.
Harvested Wood Products (HWP)	No	Emissions from harvested wood products are seemingly reported in the 2010 national GHG inventory. However, the UNFCCC review of the GHG inventory comes to the conclusion that the emissions listed under harvested wood products are emissions from timber extraction on forest land remaining forest land. Official timber harvesting statistics (legal harvesting) show approx. 4,500 m³ of harvested timber per year and a fairly costant extraction rate over the years. Removals from HWP are negligible and unlikely to change much over the year. In consequence, it is recommended to exclude this HWP.

234. In its 2010 national GHG inventory, Tunisia accounts for CO_2, CH_4 and N_2O emissions from the AFOLU sector. As such, Tunisia will also account for these GHG under REDD+, where applicable.

Table 31: GHG selected for carbon accounting

GREENHOUSE GASES	SELECTED?	JUSTIFICATION / EXPLANATION
CO_2	Yes	Principal source of GHG emissions and CO_2 emissions and removals always have to be accounted for.
CH_4	Yes	Minor source of GHG emissions from burning of biomass, fuel wood and charcoal production according to the 2010 national GHG inventory. Will however be accounted for, also to achieve consistency with the national GHG inventory.
N_2O	Yes	Minor source of GHG emissions from burning of biomass, fuel wood and charcoal production according to the 2010 national GHG inventory. Will however be accounted for, also to achieve consistency with the national GHG inventory.

3.d. Forest definition

235. In order to calculate a REL for REDD+, and also for subsequent monitoring, it is indispensable to set a forest definition. Ultimately, the forest definition will help checking whether a particular sample (or pixel) is forest and remains a forest or changes of land use class. When setting the forest definition, the method to identify forest must be kept in mind.

236. There are different definitions of the Tunisian forest. According to the 1988Forest Code, forest is a plant stand of natural or artificial origin composed of one or more forest species of trees, shrubs, or brush in pure form or in blends.

237. For the purpose of the CDM under the UNFCCC, Tunisia has set the following forest definition:

- Minimum canopy density: 10%
- Minimum tree height: 4 m
- Smallest forest area: 0.5 Ha

238. This definition is different from the international definition of the FAO forest, which sets the minimum height of the forest trees to 5 m, in order to adapt to the specific context of Mediterranean forests.

239. Furthermore, according to the study by Rouchiche and Abid (2003) for FAO, the national definition of the forest is as follows:

- Minimum canopy density: 10 %;
- Minimum tree height: 4 m;
- Smallest forest area: 4 ha.

240. It therefore differs also from the definition above by the value of the minimum considered area. In the first national forest inventory, the second definition was considered (with the minimum area of 4 ha). In the second national inventory, the two contradictory definitions are presented in the lexicon (minimum area of 4 ha in the definition given at p. 174, and minimum area of 0.5 ha in the definition given p. 175). It is therefore impossible to know what definition was really considered in this second inventory.

241. During the development of the of baseline emissions level, Tunisia should re-examine these definitions and select the most appropriate (or create a new one) in order to make it consistent with the methodology of the reference emission level development and of the monitoring system.

3.e. Reference period, adjustment and historical data availability

242. A reference period should cover a period:

- of approx. 10 years to capture average annual emissions and a general trend (if applicable);
- that best reflects likely future emissions from deforestation and forest degradation;
- for which reliable and precise data is available.

243. Historical data on the characterization of forest and pastoral resources are available through the two national forest and pastoral inventories (IFPN) carried out by the DGF. The main characteristics and the results of these two IFPN are indicated in the table below.

Table 32: Main results and characteristics of two national forest inventories

	FIRST NATIONAL FOREST AND PASTORAL INVENTORY	SECOND NATIONAL FOREST AND PASTORAL INVENTORY
Bibliographic reference and date of publication	General Directorate of Forests, 1995. Results of the first national forest inventory in Tunisia. Ministry of Agriculture. 88 p.	General Directorate of Forests, 2010. Forest inventory by remote sensing - Result of the second national forest and pastoral inventory. National Defense Ministry, Ministry of Agriculture, Water Resources and Fisheries and Ministry of Higher Education and Scientific Research. 195 p.
Dates of used satellite images	1988 and 1989	2002 and 2003
Dates of used aerial photographs	1988 and 1989, at 1 / 20 000e	1998 to 2000, 1 / 20 000e
Field work dates	1992-1994	2000 to 2007
Resulting land use characterization scale	1 / 50 000e	1 / 25 000e
Scope of the study area	Integrity of Tunisian territory, except desert land, near-desert land and the large chotts.	Integrity of the Tunisian territory, including desert areas and large chotts of the Tunisian South.
Forest Definition	Minimum stand density: 10% Minimum top crown width: 15 m Minimum surface area: 4 ha Minimum tree height: 4 m	Two different definitions are proposed. The first definition (p. 174) is similar to that of the first NFPI. The second definition (p. 175) is as follows: Minimum stand density: 10% Minimum surface area: 0,5 ha Minimum tree height: 4 m
Results: assessment of the forest surface areas	Area of forest land (including stands, maquis and garrigue with trees and without): 830 737 ha, of which 500 826 ha of forests. In order to obtain relatively comparable data with NFPI 2, the area excluding maquis and garrigue without trees is then 635 888 ha.	Surface area of forest formations (including small forest clumps, maquis and garrigue with trees): 672 985 ha, of which 541 704 ha of forests

244. During the second forest inventory, permanent plots were set up to allow regular monitoring of Tunisia's forest and pastoral resources. Their location is specified on the map below (Figure 15). These plots have not however been revisited since their implementation: there is therefore no data post-Second IFPN inventory.

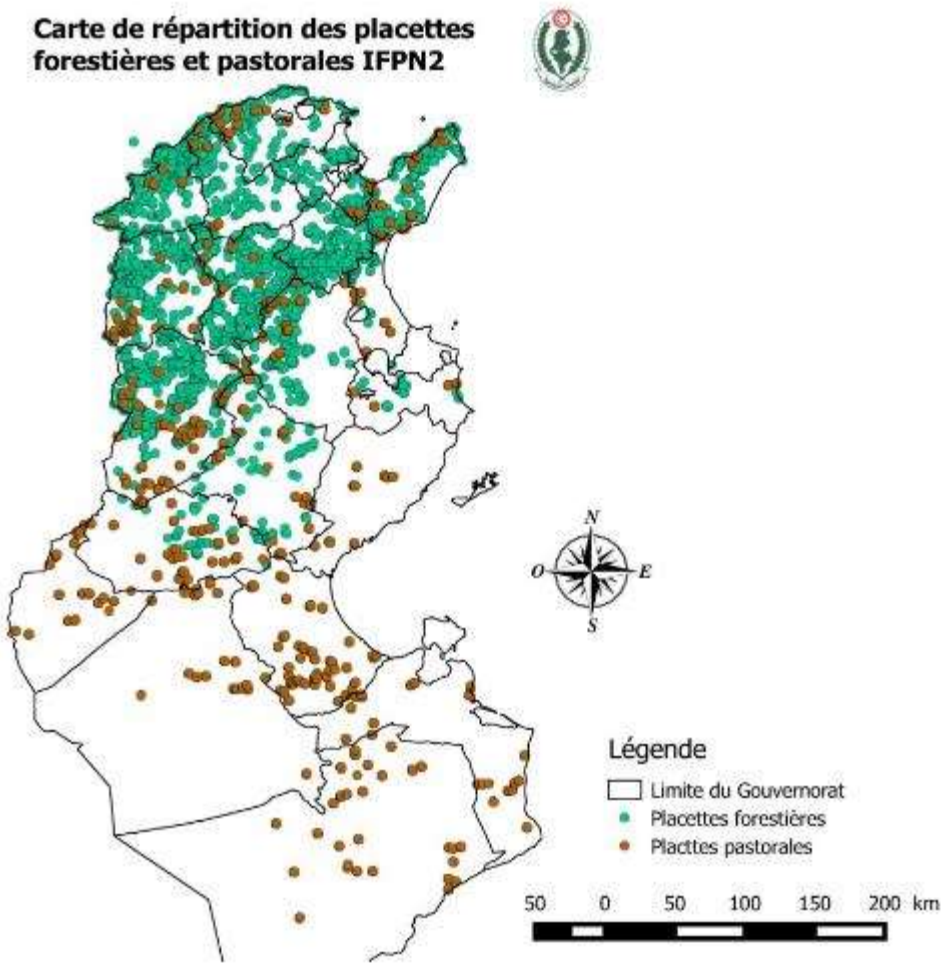

Figure 15: Location of permanent plots (IFPN2)

245. As there are no other official data on the evaluation of forest resources in Tunisia, the vast majority of studies rely on a comparison of these 2 IFPN. The World Bank & DGF study (2015)[87], the FAO study (2010)[88], as well as the OTEDD studies (2009[89] and 2014[90])) deduce from IFPN 2 that the forest area in Tunisia is increasing, especially thanks to the reforestation efforts undertaken by the Government.

246. It does not however seems prudent to compare directly the results of these two national inventories, due to differences in the methodologies used (differences in working scale, inventoried territory and definition of the land use classes - see Table 32- and the lack of information on the of calculation method for statistical accuracy).

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[87] *DGF & World Bank Group, 2015. Vers une gestion durable des écosystèmes forestiers et pastoraux en Tunisie - Analyse des bénéfices et des coûts de la dégradation des forêts et parcours. 86 pages.*

[88] *FAO, 2010. Évaluation des ressources forestières mondiales 2010 – Rapport national – Tunisie. 57 pages.*

[89] *Observatoire Tunisien de l'Environnement et du Développement Durable, 2009. Indicateurs des forêts durables. Ministère de l'Environnement et du Développement Durable - Agence Nationale de Protection de l'Environnement. 35 p.*

[90] *Observatoire tunisien de l'environnement et du développement durable, 2014. Les indicateurs de développement durable en Tunisie. 114 pages.*

247. Official figures relating to annually reforested areas by the Forest Administration are indicated in Table 33.

248.

Table 33: Areas planted annually between 2001 and 2015

YEAT	PLANTED SURFACE AREAS (HA) BY TYPE OF PLANTATION			
	FOREST PLANTATIONS	RANGELANDS PLANTATIONS	WIND SHIELDS IN FARMING AREAS	TOTAL
2001	5 800	7 525	2 000	15 325
2002	7 488	10 641	2 000	20 129
2003	7 295	5 963	2 000	15 258
2004	9 844	7 967	2 000	19 811
2005	13 093	5 949	2 000	21 042
2006	11 118	6 898	2 000	20 016
2007	7 472	6 038	2 000	15 510
2008	9 249	6 855	2 000	18 104
2009	10 246	7 014	2 000	19 260
2010	2 843	1 493	2 000	6 336
2011	4 982	2 181	0	7 163
2012	6 382	2 181	0	8 563
2013	4 105	2 566	0	6 671
2014	4 127	2 876	0	7 003
2015	5 138	2 636	0	7 774
TOTAL	**109 182**	**78 783**	**20 000**	**207 965**

Source: DGF, 2016 (rapport annuel de la fête nationale de l'arbre)

249. It is noted that significant differences may be noted between the figures presented here and those presented in other studies (SalvaTerra & GIZ, 2014; FAO, 2010; DGF & World Bank, 2015). There is therefore a relative uncertainty as to actually reforested areas. It is especially likely that the areas reforested between 2000 and 2010 have been overstated.

250. Finally, Tunisia benefits from an important network of protected areas, guaranteeing to a certain extent the preservation of natural resources within these limits. The total surface area of the protected areas (national parks and nature reserves) is approximately 585 724 ha (OTEDD, 2014), 3.6% of the total area of the Tunisia or 5.9% of the area of the Tunisia without the chotts and the Sahara. More than 50,000 ha of these protected areas are located in forest areas.

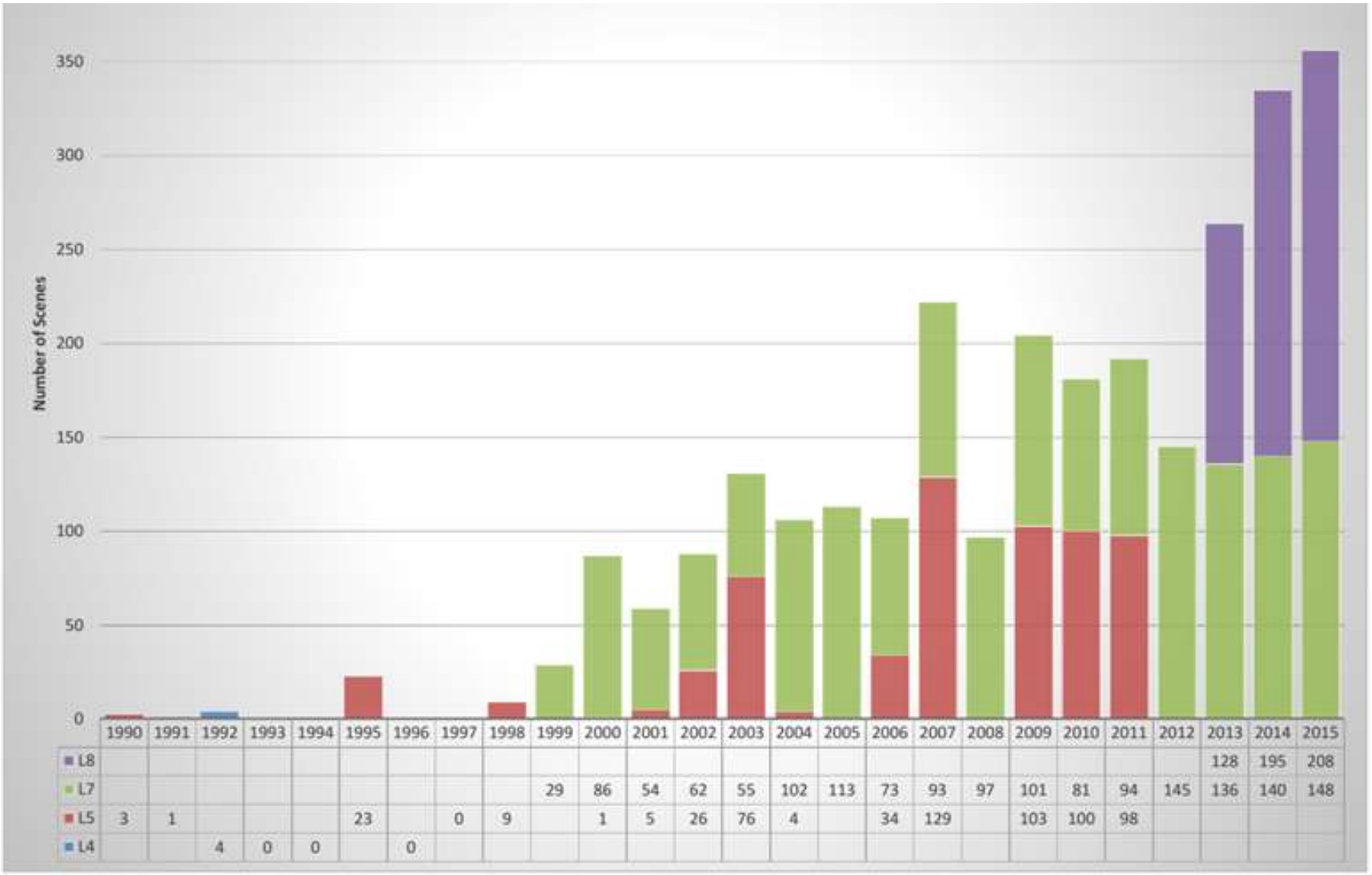
251. However, the data from the national forest inventory may not be suitable to produce activity data because different methods and plots have been used. As such, the extent to which the national forest inventory data can be used for activity data still needs to be determined (see Table 38).Different reference periods for different sources and sinks could be considered, if strong data limitations do exist.

252. In terms of choosing the most appropriate reference period, it is important to consider the recent political changes in Tunisia and the impacts this had and will have on deforestation, forest degradation and the enhancement of forest carbon stocks (as well as forest conservtion and sustainable management of forests). Reportedly, there was sudden raise in deforestation (clearing of land for agriculture) from the years 2011/2012 when state control and forest law enforcement

was weak. As such, it is important for Tunisia to choose a reference period including this peak and any new trends that may have arisen as a result of the revolution. As such, it may be fitting to extend the reference period to 2014, 2015 or even 2016.

253. For a remote-sensing based land use change analysis, inlcuding deforestation and afforestation / reforestation - the availability of (cloud-free) satellite imagery is a prerequisite. Figure 16 and Table 34 provide an overview of abailable Landsat scenes, in particular those with a cloud cover of less than 20% (though cloud cover is not such a big issue as in the tropics). Tunisia is covered by 22 Landsat tiles. Image availability is relatively good from 2000 onwards and very good from 2003 onwards, though it has to be considered that use of Landsat 7 imagery from 2003 onwards is restricted because of the SLC failure (as of May 31 2003). This limits the use of Landsat imagery for the years 2004, 2005, 2008 and 2012. For the other years, Landsat 5 and 8 imagery is likely able to compensate.

Figure 16: Landsat scenes <20% cloud cover available for Tunisia (Source: GFOI, 2016)



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
L8																								128	195	208
L7										29	86	54	62	55	102	113	73	93	97	101	81	94	145	136	140	148
L5	3	1				23		0	9		1	5	26	76	4		34	129		103	100	98				
L4			4	0	0		0																			

Table 34: All Landsat scenes and Landsat scenes <20% cloud cover available for Tunisia (Source: GFOI, 2016)

	All Scenes					Less Than 20% Cloud Cover				
Year	L4	L5	L7	L8	Total	L4	L5	L7	L8	Total
1990	0	7	0	0	**7**	0	3	0	0	**3**
1991	0	10	0	0	**10**	0	1	0	0	**1**
1992	8	0	0	0	**8**	4	0	0	0	**4**
1993	0	0	0	0	**0**	0	0	0	0	**0**
1994	0	0	0	0	**0**	0	0	0	0	**0**
1995	0	30	0	0	**30**	0	23	0	0	**23**
1996	0	0	0	0	**0**	0	0	0	0	**0**
1997	0	3	0	0	**3**	0	0	0	0	**0**
1998	0	10	0	0	**10**	0	9	0	0	**9**
1999	0	0	34	0	**34**	0	0	29	0	**29**
2000	0	4	124	0	**128**	0	1	86	0	**87**
2001	0	5	66	0	**71**	0	5	54	0	**59**
2002	0	29	71	0	**100**	0	26	62	0	**88**
2003	0	88	91	0	**179**	0	76	55	0	**131**
2004	0	4	137	0	**141**	0	4	102	0	**106**
2005	0	0	144	0	**144**	0	0	113	0	**113**
2006	0	46	99	0	**145**	0	34	73	0	**107**
2007	0	163	126	0	**289**	0	129	93	0	**222**
2008	0	0	131	0	**131**	0	0	97	0	**97**
2009	0	138	148	0	**286**	0	103	101	0	**204**
2010	0	159	120	0	**279**	0	100	81	0	**181**
2011	0	148	168	0	**316**	0	98	94	0	**192**
2012	0	0	201	0	**201**	0	0	145	0	**145**
2013	0	0	206	178	**384**	0	0	136	128	**264**
2014	0	0	243	257	**500**	0	0	140	195	**335**
2015	0	0	239	273	**512**	0	0	148	208	**356**
Total	**8**	**844**	**2348**	**708**	**3908**	**4**	**612**	**1609**	**531**	**2756**

254. Other satellite images available free of charge may be used to complete the Landsat data, in particular SPOT images more than 5 years old with a maximum resolution of 10 m, as the Sentinel pictures 1 and 2[91, 92]..

255. Considering that the DGF uses the Open Foris / Collect Earth package (which operates the Google Earth Engine platform and Bing Maps pictures), it is already required to use high resolution pictures (when available). In principle, with the current minimum mapping unit (which is 0.5 ha according to the definition of the forest established for the CDM), the use of Landsat imagery with a spatial resolution of 30 m x 30 m (0.09 ha) is sufficient and 5-6 Landsat tiles could constitute the minimum mapping unit. The main source of satellite imagery and their spatial resolution will therefore need to be taken in account at the time of the possible updating of the forest definition in the context of REDD + (that is, it is necessary to choose a minimum mapping unit which is equal to or a multiple of the spatial resolution).

256. Higher resolution images (such as Sentinel images) that will not be used directly for changes in land cover mapping may be used to clarify activity data assessment.

3.f. Methodological considerations

257. For the development of a REDD+ REL, so-called gain-loss methods are usually used, because few countries have forest inventories that would allow to estimate deforestation, degradation and enhancement of forest carbons stocks (both A/R and forest increment on existing forest land) for past periods based on a stock-difference method. Since Tunisia has implemented two forest inventories, it is worthwhile to investigate in depth the usability of these inventories to estimate at least degradation and enhancement of forest carbon stocks on forest land remaining forest land using a stock-difference method (see Table 23 below).

258. However, at present it is assumed that Tunisia will use different gain-loss methods. According to the IPCC 2006 guidelines for national GHG inventories, *[...] gain-loss methods can be applied to all carbon gains or losses. Gains can be attributed to growth (increase of biomass) and to transfer of carbon from another pool (e.g., transfer of carbon from the live biomass carbon pool to the dead organic matter pool due toharvest or natural disturbances). Losses can be attributed to transfers of carbon from one pool to another (e.g., the carbon in the slash during a harvesting operation is a loss from the above-ground biomass pool), or emissions due to decay, harvest, burning, etc [...].*

259. The following preliminary methodological suggestions are presented to quantify emissions and removals from the different sinks and sources using gain-loss methods:

[91] *http://spacenews.com/39234france-to-make-older-spot-images-available-to-researchers-for-free/*

[92] *http://www.esa.int/Our_Activities/_Observing_the_Earth/ Copernicus/Free_access_to_Copernicus_Sentinel_satellite_data*

Deforestation and A/R

260. Supported by FAO, the DGF has already put in place a component of the National Forest Monitoring System that allows to assess land use change according to the IPCC categories as well as more narrowly defined national land cover / land use categories. The system is based on several software and database solutions available under the umbrella of Open Foris. Open Foris *[...] is a set of free and open-source software tools that facilitates flexible and efficient data collection, analysis and reporting [...]* (openforis.org, 2016).

261. Technically, the system - in its current form - uses a stratified systematic sampling of approx. 8,000 samples over the entire to estimate land cover and land use change (the system is described in detail in section Component 4 (MRV system). In terms of data, it makes use of the Google Earth Engine, which allows to not only use Landsat but also other satellite imagery, including high resolution imagery.

262. Irrespective of the current results, the system and method itself is suitable to estimate historical activitiy data for deforestation and reforestation / afforestation or natural revegetation. The sampling scheme and classification system is currently undergoing a revision, which will also feature a more differentiated forest classification, including forest plantations. The benefit of using this newly established system to develop the REL for deforestation and A/R would be that it would be methodologically entirely consistent with with forest monitoring system.

263. An alternative to estimate activity data for aforestation / reforestation are the national statistics. Prior to using them, the accuracy of these statistics would need to be assessed though.

264. Based on the historical activity data for deforestation and afforestation / reforestation (or forest land to non-forest land and vice versa), there are several options to develop a REL. (See Table 35).

265. The current land cover and land use change assessment does only allow for option 1, with option 2 and 3 being available for a REL updating at a later stage. It may be worthwhile to complement the current assessment to include more data points (i.e. an additional 2-3 years in between 2001 and 2014). This would allow to see if there is a historical trend in deforestation.

266. If the historical trend is clear, Tunisia may choose to perform an extrapolation by a linear model, power, exponential, or any other mathematical function to estimate future deforestation in order to establish the REL. This possibility will be examined in detail during the development phase of the REL.

267. Given the relatively low level of deforestation, option 5 (modelling) is not considered as an option for developing the REL.

Table 35: Options for developing REL (Source: GFOI, 2015)

TYPE OF REFERENCE LEVEL	DESCRIPTION	NOTES
(1) Historical average	Average emissions or removals, generally over a defined period (10-15 years could be considered useful)	Simplest option; assesses achievement of REDD+ actions relative to a fixed historical period. The fixed period used could be updated periodically.
(2) Rolling average	As 1 but updated, probably every 5 years with the averaging period kept at the same duration but shifted accordingly	The historical period lags the period used for assessment by 10 years or so. Gives closer tracking between REDD+ activities and the FREL/FRL than (1).
(3) Cumulative average (also called dynamic average)	As (1) but newly available historical data extends the averaging period	Approaches the current value more slowly than (2). Re-calibration every 15 years or so could be useful, consistent with the range considered for simple historical averages.
(4) Trend extrapolation	Extrapolation of trend fitted to historical data	Needs good confidence that the past trend is likely to be representative of the future. Otherwise needs frequent updating. The trend fitted could be linear or some other function (e.g. logarithmic) if this gave better representation.
(5) Other projection	Projection based on model simulation	Needs good understandi ng of the effect of drivers (based on historical data) and policies, and solid basis and documentation of the assumptions made. For credibility, models used for the projection should be transparent and able to replicate past levels and trends, possibly including expectations underlying the forest transition curve.

Degradation and enhancement of forest carbon stocks on forest land remaining forest land

268. Developing a historical reference emission level for degradation is far more difficult, because degradation can usually not be captured with remote sensing imagery available for the past decades (at least not with a sufficient accuracy).

269. The most reliable approach is a system of permanent forest inventory plots. As indicated above, the data and methods from the two forest inventories will be assessed during R-PP implementation to determine whether the data can be used to determine gross or net degradation (see Table 23 below). Should the national forest inventory data and methods not be suitable to develop a REL for degradation, then Tunisia will consider using a model to estimate past and future degradation emissions based on the drivers of forest degradation (e.g. rural surveys on use of firewood coupled with populations statistics, charcoal production statistics etc.)

270. Finally, Tunisia will also assess the option of adjusting the historical REL. L'ajustement pourra s'avérer particulièrement utile si les données des IFPN ou les données proxy indiquent une tendance à la hausse des facteurs à l'origine de la dégradation des forêts (comme une augmentation

démographique des populations rurales dépendantes du bois de feu ou du charbon, ou une augmentation du pâturage, etc.). C'est pendant la phase de développement du REL que sera examinée la nécessité d'ajuster les émissions historiques à partir d'une extrapolation des tendances ou à partir de modélisations.

3.g. Development of emission factors

271. For its 2010 GHG inventory, Tunisia has largely relied on IPCC default values (TIER 1). TIER-1 emission factors are generally acceptable for reporting. However, given the high uncertainties related to TIER-1 emission factors, it is unlikely that performance-based payments can be based on emissions reductions which are calculated based on TIER-1 emission factors.

272. There is currently very little local data (data level 2 or 3) allowing a more detailed evaluation of the biomass. A single allometric equation seems to have been developed for the Tunisia (allometric equation enabling to assess the above ground and belowground biomass of a maritime pine stand[93]).

273. Biomass per type of vegetation data are indicated in the mitigation measures document adapted to the national context (NAMA)[94] (see Table 36). However, these data were calculated from growth factors, themselves calculated by comparison of the two IFPN inventory data. As indicated above, the methodological inconsistencies between these two inventories make any comparison hazardous. In the same way, it does not seem appropriate to calculate growth factors from areas which are not equivalent. Finally, the study did not account for the maturation of the ecosystems and the fact that some ecosystems, in adulthood, are considered to be in equilibrium and sequester much fewer GHG emissions annually as when they were growing. These data will need to be consolidated by further studies.

Table 36: Summary of the annual production of biomass in 2010 (from South Pole Carbon, 2014)

SINK	BIOMASS (TMS/YEAR)
Forest stands	622 000
Maquis and garrigue in forest	567 000
Maquis et garrigue outside forest	120 000
Olive trees	2 448 000
Other fruit trees	302 000
Wind shields	46 000
Road side plantations	14 000
Urban green spaces	500
Total	4 119 000

[93] *Shaiek O. et al., 2010 – « Estimation allométrique de la biomasse du Pin maritime en dune littorale : cas de la forêt de Rimel (Tunisie) » – Forêt méditerranéenne t. XXXI, n°3, septembre 2010 – pp. 231-242*

[94] *South Pole Carbon, 2014 – « Définition et développement de possibles NAMAs dans les secteurs de l'agriculture, forêts et changements d'affectation des sols en Tunisie » Phase 1. Analyse du secteur par rapport aux émissions des GES et construction du scénario de référence (BAU). Rapport final. – 100 p.*

274. Consequently, the developing of country-specific emission factors is a priority for Tunisia. This would entail at least:

- Determining the carbon stock in above ground biomass, deadwood, litter and soil in the different forest and other land cover and land use classes. For below-ground biomass, use of root-shoot ratios are deemed acceptable. If the land cover classification differentiates e.g. between young and mature forests, then an average carbon stock for these subclasses also needs to be calculated.This will allow to calculate emissions from land use change in general, including deforestation;
- Determining removal factors (mean annual increment) for all major forest types and strata. This will allow to calculate removals from forest land remaining forest land;
- Developping more specific removal factors for the major plantation types (by species) in view of the important role of afforestation / reforestation;
- In addition, data on supplementary factors such as e.g. wood density will be compiled.

275. To this end, the following efforts will be undertaken:

- In a first step, data from the national forest inventories will be analyzed in depth to determine wether they are suited or not for developing emission factors
- Scientific literature on similar forest types will be analyzed and the data compiled for eventual use (if only for comparison)
- Based on the results of the analysis (identification of gaps), a range of studies will be initiated to collect the data that is necessary to develop emission and removal factors. It is recommended to bundle these studies into a larger project with partners from the scientific community to ensure that these studies really contribute to developing emission factors and also to ensure methodological consistency.

Table 37: Summary of Reference Level Activities and Budget (Component 3)

Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2017	2018	2019	2020	Total
Analysis of the national forest inventory data and possibility for producing activitiy data and EF	Gap analysis of the NFI data	25				**25**
	Deriving activity data (if possible)		25			**25**
	Development of emission factors (if possible)		25			**25**
Development of the REL (methodologies & dat)	Deforestation assessment methodology & data (refinement of existing method, if needed)		200			**200**
	Degradation assessment methodology & data					
	Assessment methodology of reforestation & data					
Definition of emission & removal factor "project"	Studies to develop EF & removal factors		100	100		**200**
Total		**25**	**350**	**100**		**475**
Government		-	-	-	-	**-**
UN-REDD		**25**	**350**	**100**		**475**

Component 4. Design Systems for National Forest Monitoring and information on the guaranties

4.a. National Forest Monitoring System

4.a.1 Scope of the MRV system

276. The MRV system has to monitor and account for the same REDD+ activities (sources and sinks), carbon pools and GHG that are included in the REL. Where possible the same or demonstrably equivalent methods must be used for monitoring, in order for the monitoring results (activity data) to be comparable with the REL. Likewise, the same emission factors have to be used to calculate emissions and removals during subsequent monitoring periods.

277. In consequence, the development of the REL (methodologies and data) has profound implications for monitoring and thus the REL and the monitoring system must be developed in very close coodination. It may also be necessary to think the development of the REL from the "monitoring end". Development of the REL is a one-off endeavor, while monitoring is a recurrent activity. Complicated methods, i.e. time and cost intensive, may be used once for developing a REL, but they may be too costly or time intensive for monitoring.

278. In terms of carbon accounting, the MRV system has the same scope as defined in Component 3:

- All 5 REDD+ activities;
- All carbon pools except for HWP;
- All AFOLU-relevant GHG (CO_2, CH4 and N_20).

279. However, the scope of a REDD+ MRV system should go beyond mere GHG calculation. The following further components of a MRV system are:

- Measuring the performance of individial actors / activities in reducing emissions or increasing removals as well as quantifying the non-carbon benefits of REDD+ activities in order to appropriately assign payments
- Collection data on the drivers of deforestation and forest degradation
- Identifying leakage
- Monitoring compliance with the country's safeguard policy and collecting data on the social and environmental impacts of REDD+ activities
- Collection of other information to improve the management of forest resources

280. Where possible, one technical system should provide all necessary information on as many of these components as possible. The different envisaged monitoring options are described in more detail in the following sections.

4.a.2 Monitoring of deforestation and aforestation/reforestation

281. As described in section 3.f, FAO has already supported the establishment of a national forest monitoring system through the project "Système National de Surveillance des Forêts pour un processus REDD+ transparent et véridique". The monitoring system uses a systematic stratified sampling approach of 7,791 sample points of 100mx100m (being a 1 ha area) which cover the entire country. Stratification has been done to more accurately capture changes in forest cover (mostly situated in the north and central parts of Tunisia). The spacing of the sample points 3 km for the governorates of the north and central part of the country and 6 km for the governorates in the south (See Figure 8).

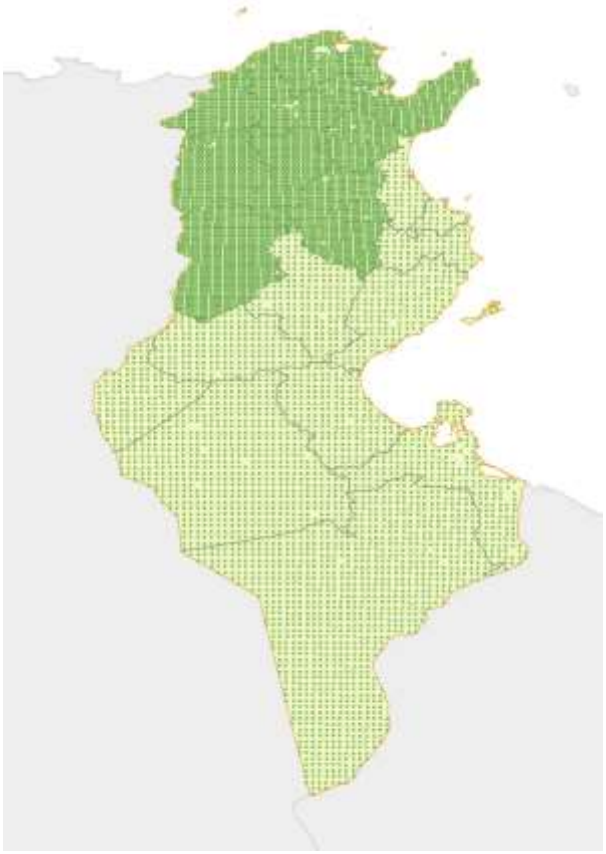


Figure 17: Sampling grid of the land use change system

282. In its present stage, the system allows to report TIER-3 activity data for land use land use change and forestry (LULUCF) in line with the IPCC 2006 guidelines for national GHG inventories and its land cover and land use classes. These classes have been further stratified (see Table 38) to gain additional information. The forest class is stratified broadly into forest type (deciduous, coniferous, mixed), structure (plantation or natural), canopy cover (4 classes) and age (young, mature).

283. This stratification would already allow assigning fairly differentiated emission factors. Including emission factors directly in the monitoring system will allow to directly calculate emission from deforestation and removals from changes of non-forest land to forest land.

Table 38: Classification system of the national forest monitoring system

CATEGORY	CRITERIA	SUB-DIVISIONS
1. Forest	Species	Hardwood; Softwood; Indeterminate
	Structure	Régular ; Irregular
	Cover	5-25 % ; 25-50 % ; 50-75 % ; >75 %
	Stage	Young; Adult/Senescent
2. Meadows (< 4 m)		Garrigue/Maquis; Clearing; Pastorale plantation; Alfa ; Cactus plantation ; Other rangeland
3. Build area		Construction; Infrastructure; Quarry; Artificial green space
4. Farm land	Treeculture	Oasis; Olive groves; Other fruittrees
	Cultivation	Field crops; Market gardening; Fallow
5. Wetlands	Natural	Sebkhas ; Garaets / lake ; Chotts ; Bog ; Oued
	Artificial	Dam; Hilly; Salines
6. Other land		Other land

284. Both the sampling grid and the classification is to be further refined, a process which has already started. In detail, is is planned to:

- approx. double the amount of samples (approx. 15,000);
- Further stratify the sampling grid to better capture changes related to forest land. For forest areas a sample spacing of 2 km, for grassland areas a spacing of 4 km and for areas dominated by desert 8 km;
- Further stratify the forest types into (coniferous forest, decidious forest, mixed forest, coniferous plantations, decidous plantations, mixed plantations, acacia, other).
- further stratify the other non-forest classes to better reflect land cover and land use in Tunisia

285. Once this revision has taken place, Tunisa will have a techncially operational monitoring system capable of detecting deforestation as well as changes from non-forest land to forest land. The system may also be suitable to dectect some forest degradation (e.g. a reduction in canopy cover in a sample), in particular through Google Earth Engine higher resolution imagery can be accessed. However, it will not be suitable to accurately quantify forest degradation.

286. The material logistics (server, computers, softwares, etc.) was supplied in the framework of the FAO project and capacity building was implemented (and is still in progress). Capacity building is still required to train analysts in the manual classification as well as to establish Quality Assurance and Quality Control (QA/QC) measures.

4.a.3 Monitoring of forest degradation and enhancement of forest carbon stocks on forest land remaining forest land

287. Monitoring of forest degradation is generally more complicated than monitoring of deforestation or land use changes from non-forest land to forest land, in particular when using remote sensing.

288. Designing a system for monitoring forest degradation requires to look at the principal drivers of forest degradation. These are:

- Commercial forest exploitation
- Fuelwood collection (including wood for charcoal production)
- Overgrazing (which impairs forest succession)

289. For commercial forest exploitation, national statistics are available. However, commercial forest exploitation is not considered significant in terms of emissions. Furthermore, no reliable and precise data exist on volume linked to illegal use of wood.

290. Fuelwood collection, charcoal production and grazing are the major drivers of forest degradation. While statistics and indirect modelling (e.g. based on population data) can be used to produce estimates, such estimates will feature high inaccuracies and are this unsuitable for monitoring. Since fuelwood collection and grazing do not result in impacts that could be accurately detected with medium-resolution imagery (e.g. new roads), a system of permanent sample plots seems the most plausible option. In Tunisia, in contrast to many tropical REDD+ countries where field transport is costly and accessibility is a problem, a ground-based permanent sample plot monitoring system is highly feasible.

291. Tunisia is currently preparing its 3rd national forest and pastoral inventory and thus it is suggested to design this new national forest inventory in a way that forest degradation and the enhancement of forest carbon stocks on forest land remaining forest land can be accurately monitored and evaluated. By IPCC definition, the approach to monitor and account for forest degradation is a "stock-difference" method.

292. In terms of design, the monitoring of degradation may comprise the entire forest inventory or only a subset. A subset may be the most feasible option in case REDD+ monitoring and reporting is to occur annually, since the frequency of the full national forest inventory will likely be 5-10 years. Further, it will be considered to align the sampling grid of the deforestation monitoring system with the sampling grid for monitoring forest degradation to produce synergies, (e.g. for quantifying biomass and hence defining emission factors for different forest types).

293. Still, even the establishment of a TIER-3 monitoring system to quantify emissions and removals on forest land remaining forest land cannot solve the problem that the method for monitoring deviates from the method for establishing the reference emission level. The principal problem will be that the monitoring method will use other sample plots and possibly other measurement methods than used for the REL. It will be analyed and considered in depth during the development of both the REL and the monitoring system.

294. The need for additional finance and capacity building is much larger for the degradation monitoring system compared to the deforestation monitoring system.

4.a.4 Interaction of the REDD+ monitoring system with the national GHG inventory

295. Both the REL and the forest monitoring system will be developed with a view towards compatability and making contributions to the national GHG inventory for the AFOLU sector, specifically for forestry and other land uses. The development of emission factors for REDD+ inlcudes measuring the carbon stock in a variety of non-forest land use systems in Tunisia, such as grasslands, olive cultures, orchards, croplands etc. (see Table 38) in order to quantify the changes in carbon stocks when a forest is converted to another land use or vice versa. In connection with the recently established forest monitoring system supported by FAO (see 4.a.2), this will allow to evaluate GHG emission and removals not only for REDD+ but also for land cover changes relative to other land use (e.g. grassland to cropland) carried out during the national GHG inventories in accordance with the IPCC 2006 guidelines.

296. Further, the establishment of a permanent sample plot system as part of the national forest inventory will allow to measure carbon stock changes on forest land remaining forest land, which will be another big contribution to the national GHG inventory.

297. In summary, the results produced by the REDD+ carbon monitoring system will fully compatible with the national GHG accounting under the UNFCCC and in fact enhance Tunisia capacity to accurately carry out its national GHG inventory.

4.a.5 Quantification of the multiple benefits generated by REDD+

298. As mentioned in the introduction, Tunisia also wishes to quantify the co-benefits resulting from REDD+ activities.

299. The frequent quantification of specifically the non-carbon benefits related to REDD+ activities are not regarded as an add-on but as a central element of Tunisia's REDD+ approach. Given the limited emission reduction potential, targeting and aquiring funding for ecosystem services other than carbon will be vital for the sustainability of Tunisia's REDD+ programme.

300. In order to quantify the non-carbon benefits resulting from REDD+ activities, Tunisia is considering to build on and expand the work carried out during a study on the "economic valuation of goods and services of Tunisian forests". The study focussed on two watersheds in the North and Centre of the country and used a variety of methods and data sources to estimate the total economic value of forests (see Figures 18 and 19 below).

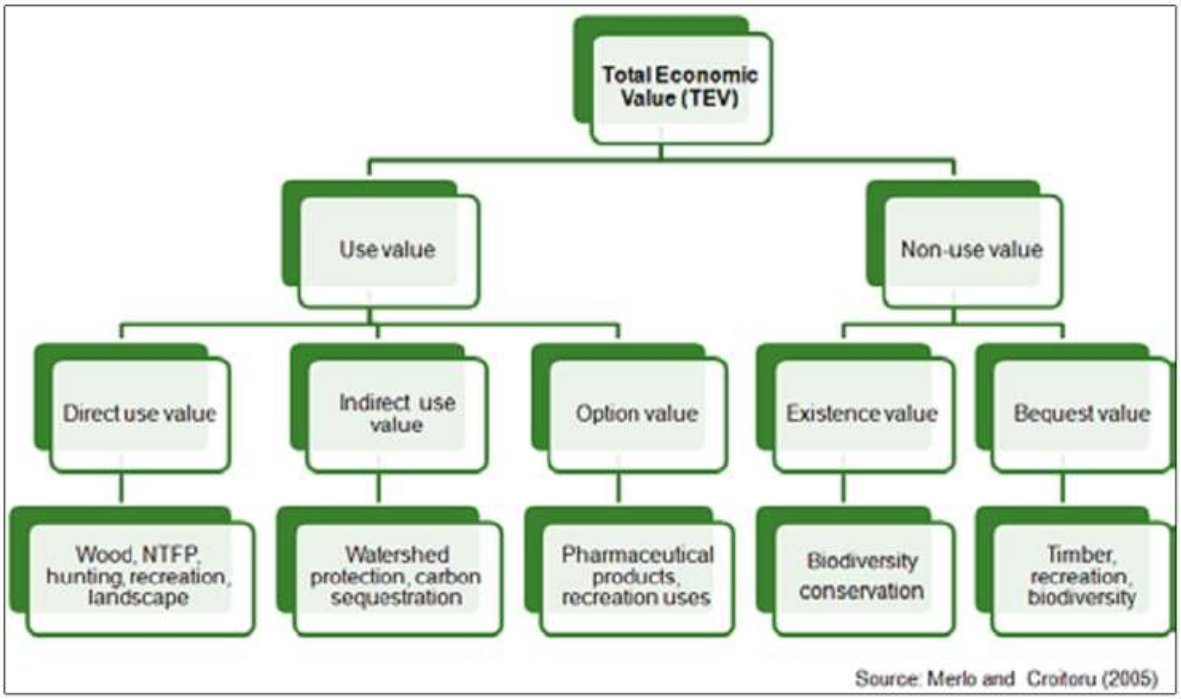


Figure 18: The study approach for quantifying the total economic value of forests (FAO 2012)

	Technical Evaluation	physical Indicators	Monetary Indicators
Direct Use Value			
Wood sold by the Administration	Market Price	Quantity (m^3)	Economic Value
Gathered wood	Market Price	Quantity (m^3)	Economic Value
	Market price of substitute goods		Price of Charcoal
NWFP	Market Price	Quantity (ton)	Economic Value
	Market price of substitute goods		Price of substitute goods
Grazing	Market Price	Quantity (UF)	Economic Value
	Market price of substitute goods		Price of substitute goods (hay, barley)
Hunting	Market Price	Number of killed animals	Economic Value of game
Leisure	Benefit transfer method	Nomber of visits	Consumer excess
Indirect Use Value			
Protection of catchment area	Production fonction method	Quantity of silting avoided in the dams	Opportunity cost of water
		Surface of protected rural land	Avoided losses of the rural production
Carbon sequestration	Market Price	Net change of carbon sequestration in the biomass and soil	Price of carbon on the international market
Option, existence, heritage value			
Biodiversity conservation	Cost based approach	Protected area (ha)	Annual expenses for biodiversity conservation
Negative values linked to use and forest management			
Degradation linked to fires and clearings	Cost of damages	Burnt surface (ha)	Current and future value of lost goods and services
		Cleared surface (ha)	
Rural damage linked to forest game	Replacement cost	Affected surface (ha)	Cost of fences

Figure 19: Valuation techniques and general data sources

301. While it can be difficult to attribute precise economic values in particular to non-marketable forest products and ecosystem services, the benefit of using total economic value is that the benefits of different forest products and services can be aggregated to a single figure (with monetary value being the unit).

302. However, other options such as quantifying the non-carbon benefits of REDD+ activities in different units such as e.g. X tonnes of topsoil, Y m³ of water or Z ha of a particular habitat conserved etc., will also be considered during operationalization. A hybrid approach may also be pursued, using total economic value for all forest products and services that can be quantified and an alternative approach for all other products and service (also qualitative if quantification is not possible).

303. To operationalize a non-carbon benfits mapping and monitoring system, it is envisaged to make a concept study that will build on the previous study mentioned above and also take into account the current forest monitoring system and its land cover and land use classification. Ideally, this classification can also be used to also stratify the assessment of the non-carbon benefits. This would greatly facilitate later monitoring and reporting, where each of the land cover and land use classes not only has a biomass/carbon stock value but also a non-carbon value attached to it. In case a more fine-tuned classification would be needed, this would be integrated into and made consistent with the national forest monitoring system to allow for easier monitoring and reporting.

304. During the concept phase, Tunisia will seek to exchange on the details of the non-carbon benefits monitoring and reporting system with potential donors for non-carbon related payments in order to develop a system that meets their expectations.

4.a.6 Institutional set-up, human resources, investment and capacity building

305. The REDD+ forest monitoring system, both for deforestation and degradation, will be anchored with the Service Inventaire Forestier et Pastoral at DGF. Through the project *"Système National de Surveillance des Forêts pour un processus REDD+ transparent et véridique",* the Service has already received the equipment and training to operate the system for monitoring deforestation and other land use changes and will also be responsible for the national forest inventory., It is therefore anticipated that the “Service Inventaire Forestier et Pastoral” will require additional staff, finance and capacity building to operation the monitoring system. Further, strong internal Quality Assurance and Quality Control (QA/QC) procedures will need to be established, as well as guidance manuals and standard operating procedures (SOPs) for data analysis and storage, reporting, supervision etc.).

306. A detailed assessment of resource and capacity needs at this stage is not feasible, as it depends very much on the final design of the monitoring system. An initial monitoring design study will be therefore carried out and accompanied by a detailed resources and capacity needs assessment.

307. To ensure consistency with the national GHG inventory, a close coordination with DGACTA, DGEDA and the AFOLU working group will be established.

Table 39: Preliminary assessment of equipment and capacities

No & qualification of permanent staff	The service «Inventaire Forestier et Pastoral» has more than a dozen graduated forest engineers at its disposal. These have been trained as part of the FAO project to operate the Collect Earth software package for the national forest monitoring system.

	The staff is however tasked with a multitude of things from other departments and thus the staff is not permanently available for carrying out forest monitoring work. Permanently assigning 3-4 people for this task as well as further training in remote sensing techniques will thus be considered for REDD+ implementation.
No & type of workstations	10 workstations with double screens to increase the speed of assessing sample points with Collect Earth. Each workstation is powered by an Intel i7 double core processor with 3.4 Ghz and 16GB RAM and uses Windows 7 (64bit) as an operating system. Amount and quality of the equipment is considered to be sufficient for operating the forest monitoring system using Collect Earth. In case of further investments, these should first go into improving the bandwidth and reliability of the internet connection (Collect Earth requires constant access to the internet to access Google Earth Enginge, Bing maps and for data storage).
Software	As described previously, the collect earth software package is freeware. For additional preparatory work (e.g. in GIS) QGIS - also a freeware application - is installed.
Other	While the equipment and capacity at the national level is deemed largely suffcient, there is a need to better equip and train inventory staff at the regional level (CRDAs) e.g. with laptops and GPS units for ground measurements.

4.b. Designing an Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards

308. This section shortly outlines preliminary approaches for monitoring and reporting the following non-GHG related data:

- Performance of individual actors / activities in reducing emissions or increasing removals in order to appropriately assign payments;
- Drivers of deforestation and forest degradation;
- Identifying leakage ;
- Compliance with the country's safeguard policy and social and environmental impacts of REDD+ activities.

4.b.1 Measuring of individual REDD+ performance as a basis for REDD+ payments

309. REDD+ in essence is a mechanism that is supposed to reward performance, with performance mainly defined as a reduction in emissions from deforestation or degradation or the increase in removals through afforestation, reforestation or other activities.

310. Measuring the performance of REDD+ actors (government bodies, private land owners, local communities, companies, NGOs etc) is a prerequisite to adequately reward good performance. If a country cannot measure and hence reward good performance, and in consequence payments do not reach those that successfully carrying out REDD+ activities, then it is very likely that these actors will end up ceasing implementing REDD+ activities and REDD+ will fail. As such, a system to measure the individual performance of REDD+ actors is vital for the overall success of REDD+.

311. Ideally, the performance of individual actors -which in most cases is expressed in emission reductions - can be quantified through the national forest carbon monitoring system. However, this requires spatially very explicit monitoring (wall-to-wall mapping), which is not envisaged by Tunisia. While the sampling approach and the national forest inventory may be able to adequately measure performance at the level of a governorate (wilayah) and district (mutamadiya), but it will be

questionable at the level of municipality (baladiya) and impossible at the level of a sector (imada) or for small individual activities.

312. As a result, a different system will be established that is able to track - more or less accurately - emission reductions (performance) from individual REDD+ activities. When designing the system, it must also be considered that performance is the result of comparing the emission from future activities to the emissions from the REL. Indeed a REL is developed at the country level, but the emissions that constitute the REL are not evenly distributed across the coutry. Consequently, performance may or may not be measured differently across the country. This is a highly political aspect.

313. The performance monitoring system is closely linked to the design of the benefit sharing system (See 2.c.3). Ultimately, the performance monitoring system's resolution, i.e. the spatial scale to which performance will be tracked (district, sector or even small individual activities), must match with the level at which benefits will be distributed based on performance. More concretely, if individual farmers are to be paid based on performance (e.g. for protection a reforestation site), then the performance monitoring system must be able to track the performance of an individual farmer (small reforestation site scale). All payments must not necessarily be linked to performance, indeed all farmers can get the same amount of money irrespective of their performance. Such an approach however does not provide any incentive to perform.

314. There are different ways to establish performance monitoring systems. A preliminary option using proxy indicators is presented below. However, this aspect of REDD+ implementation needs to be further analyzed, discussed and elaborated in close coordination with the development of the benefit sharing plan, the REL and the carbon monitoring system during R-PP implementation. Even though measurement of performance to a great level of detail is generally desirable to increase fairness and encourage performance, it may also come with too high transaction costs.

315. A preliminary option that is considered is to differentiate the REL into subnational RELs at the level of a governorate or district. Each of these administrative entities would have thus a specific REL for deforestation, forest degradation and carbon stock enhancement. Performance at this level would still be captured by the carbon monitoring system as described in section Component 4. In order to define and measure performance of specific REDD+ activities at a lower level (municipality, sector, a village, etc.), the emission reduction impact of these activities against the specific REL of the govenorate or district needs to be estimated. To give a hypothetic example: it could be estimated that emission reductions from protection of 10 ha of forest from unsustainable wood extraction and grazing results in 250 tCO_2 reduced per year. A relatively simple system of ground checks identifying annually or biannualy indications of grazing or cutting of wood could be established by local forest services to monitor this activity performance. A simple monitoring report would thus be compiled and if no infringements had been found, then the organization responsible for the protection of this particular forest (e.g. a farmer association) would receive a payment for a reduction of 250 tCO_2. The rights and obligations and the amount of the payment would be fixed in a contract between the (regional) government and the farmer association. Development of such performance-based contracts is part of the benefit sharing plan.

316. With such a system of proxy indicators (e.g. 1 ha of forest protected from degradation = 25 tCO_2 reduced), the (regional) government could establish comparatively simple performance monitoring systems and payment modalities. The fact that these very simplified performance monitoring methods will not be very accurate or may fail would not be problematic in terms of estimating

overall emissions, because this would still be accurately done at the level of the country, governorate and maybe even district. However, the (regional) government would still need to make sure that payments are really based on performance and that the proxy indicators used to measure performance and that are the basis for payments are conservative.

317. The potential Project 2 of the FIP will serve as a pilot to also monitor and report on the performance of individual land owners. The monitoring scheme will be developed as part of the project but in close collaboration with le Service "Inventaire Forestier et Pastoral" to ensure consistency with the national forest monitoring system.

4.b.2 Collection data on the drivers of deforestation and forest degradation

318. A system to frequently assess the status of drivers and underlying causes of deforestation and forest degradation is important in order to be able to adapt the REDD+ strategy and activities. Drivers and underlying causes of deforestation and forest degradation may change over time or new ones may emerge. So it is important to track these changes in order to adapt without delay. It is anticipated that the monitoring systems for deforestation and land use change and degradation monitoring system (part of the national forest inventory) will provide sufficient information on the drivers.

319. The remote sensing based monitoring system will allow to see which land-use in approx. which area is causing deforestation and how this is changing on an annual basis. In order for the degradation monitoring system to provide information on the drivers of forest degradation, additional indicators will be added to sampling protocols. This will include information on impacts by grazing (e.g. missing succession, browsing, animal tracks) or to logging or fuelwood collection (e.g. stumps or cut branches) on a plot.

4.b.3 Identification of leakage

320. Since Tunisia will monitor and report REDD+ at the country level, leakage or displacement of emissions is not an issue in terms of climate integrity (except for transboundary leakage). However, leakage may also occur in the sense that conversion to agriculture is displaced to grassland ecosystems and that protection of certain types of forests leads to forest degradation or wood removal in other forest or wooded ecosystems. These environmental impacts will be monitored by analyzing the spatial pattern of deforestation and forest degradation, to monitor in particular significant shifts to other areas.

321. This is also important for designing REDD+ activities, as a simple shift in deforestation or degradation will not result in any emissions reductions. Usually purely prohibitive measures, (barring access to forests through fencing or increasing control), often result in deforestation or degradation activities to shift to the next best area. It is thus important to prevent any purely prohibitive measures (from a social viewpoint anyway). Where prohibitive measures cannot be avoided (e.g. conservation forests), there is a need to provide compensation or access to other resources or technology.

4.b.4 Safeguard information system

322. The safeguard information system (SIS) allows Tunisia to report on compliance with UNFCCC Cancun safeguards as well as with the applicable WB operational policies and any other safeguards and

principles and criteria that may be adopted as a result of the Strategic Environmental and Social Assessment (SESA). The SIS is hence a component of the Environmental and Social Management Framework (ESMF), which will be developed based on the SESA during R-PP implementation. At this stage, the design of the SIS cannot be clearly formulated. In terms of institutional set-up, Tunisia will establish the ESMF and the SIS alongside the managing entity of REDD+ fund. This makes the most sense, as the application of safeguards is directly related to the implementation of REDD+ mitigation activities (on the ground). It is envisaged that REDD+ activities financed have to demonstrate compliance with these safeguards, both in planning and implementation. General information on all REDD+ activities as well as their compliance with safeguards will be made publically available through a website (webmapping service or database).

Table 40: Summary of Monitoring Activities and Budget (Component 4)

Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2017	2018	2019	2020	Total
Operation of the land cover change monitoring system	Development of guidance and QA/QC procedure manuals	25				25
	Hiring of additional permanent staff (4)	100	100	100	100	400
	Training of analysts	Included in overall capacity building budget (2c)				0
	Investments to complement or substitute hard & software	25	25	25	25	100
Development and operation of the forest degradation monitoring system	Design study		200			200
	Hiring of additional staff	Included in the above				0
	Establishment of a PSP system and initial measurement as part of the NFI	Part of the 3rd national forest inventory				0
	Training of field teams and data analysts	Included in overall capacity building budget (2c)				0
Performance monitoring system	Design study	Financed by the FIP				0
	Development & testing of monitoring protocols	Financed by the FIP				0
	Establishment of QA/QC procedures and training of local foresters	Financed by the FIP				0
Safeguard information system	Design study			50		50
	Establishment and operation of the SIS at the ESMF (database with web-interface) will be piloted as part of FIP Project 2	Financed by the FIP				0
	Training of staff	Included in overall capacity building budget (2c)				0
Non-carbon benefits monitoring system	Design study		50			50
	Establishment and operation of the monitoring system will	Financed by the FIP				0

	be piloted as part of FIP Project 2					
	Training of staff	Included in overall capacity building budget (2c)				0
	Total	150	375	175	125	825
Government						
UN-REDD		**150**	**375**	**175**	**125**	**825**

Component 5. Schedule and budget

Component	Main activity	Sub-Activity	Estimated Cost (in thousands US$)				
			2017	2018	2019	2020	Total
1a	Operations of CN	Chief technical advisor (international consultant)	120	120	120	120	**480**
		Monitoring evaluation Expert	Financed by the FIP				-
		Communication Expert	Financed by the FIP				-
		IT Specialist	Financed by the FIP				-
		Secretary / accountant	Financed by the FIP				-
		Operational budget (office, travel, small studies, etc.)	Financed by the FIP				-
	Working groups	Travel, meetings	100	100	100	100	**400**
	Sub-total		**220**	**220**	**220**	**220**	**880**
1c	Awareness raising	Information material	**15**	**15**	**15**	**15**	**60**
		Website	**5**	**5**	**5**	**5**	**20**
	Working groups		Budget du projet inclus dans le dispositif institutionnel (1a)				-
	Validation meetings & workshops	National level validation workshops	**0**	**60**	**60**	**30**	**150**
	Sub-total		**20**	**80**	**80**	**50**	**230**
2b	REDD+ strategy development	Consultation meetings	20	30			**50**
	Sub-total		**20**	**30**	**0**	**0**	**50**
2c	Carbon rights	Legal analysis	25				**25**
		Draft regulation	Governmental process				**0**
	Systems of benefit sharing	Development and adoption of a benefit-sharing concept		50			**50**
		Drafting of benefit sharing regulation	Within the scope of work of the working group on benefit sharing (1a)				-
		Development benefit-sharing contracts			25		**25**
	REDD+ pilot Fund	Design study	Financed by the FIP				-
		Establishment and operation of the REDD+ Fund	Financed by the FIP				-
	REDD+ Registry	Design study		50			**50**

Component	Main activity	Sub-Activity	Estimated Cost (in thousands US$)				
			2017	2018	2019	2020	Total
	Capacity building	Capacity needs assessments (recurrent)	Within the scope of work of CN-REDD (1a)				-
		Financing of a wide range of capacity building measures	150	150	150	150	**600**
	Sub-total		**175**	**250**	**175**	**150**	**750**
2d	Awareness raising and capacity building	Raise awareness of the concept of REDD+ safeguards and to potential environmental riks and to joint-benefits linked with REDD+		30	30		**60**
		Develop the capacity of stakeholders to engage in the development of the country approach to safeguards.	Included in capacity building budget (2c)				**0**
		Define institutional and procedural arrangements for the country approach to safeguards.	Within the scope of work of the working group on safeguards (1a)				
	Preparing the development of the country approach to safeguards, including development of a national set of safeguards	Design a consultative & participatory process for the development of the country approach to safeguards.		100	100		**200**
		Define objectives of the country approach to safeguards, identifying key social and environmental issues for the country.	Inclus au-dessus				**0**
		Develop a national-level interpretation of REDD+ safeguards, in the form of standards or principles and criteria	Inclus au-dessus				**0**
	Defining or developing safeguard policies, laws and regulations (PLRs)	Conduct a gap analysis of existing PLRs.	Included in risk assessment				**0**
		Develop new PLRs and/or amend existing PLRs (as necessary).	Within the scope of work of the working group on safeguards (1a)				**0**
	Risk analysis / ESMF	Comission SESA (one or several studies)		50			**50**
		Develop risk mitigation activities	Within the scope of work of the working group on safeguards (1a)				**0**
		Design study for ESMF			50		**50**
		Develop standard operating procedures for ESMF	Included in above				**0**
		Operation of the ESMF unit	Will be piloted as part of the pilot REDD+ finance mechanism under FIP Project 2				**0**
	FPIC Campaign	Desing and print of communication documents			50	50	**100**
	Sub-total		**0**	**180**	**230**	**50**	**460**
3	Analysis of the national forest inventory data and possibility for	Gap analysis of the NFI data	25				**25**
		Deriving activity data (if possible)		25			**25**
		Development of emission factors (if possible)		25			**25**

Component	Main activity	Sub-Activity	Estimated Cost (in thousands US$)				
			2017	2018	2019	2020	Total
	producing activitiy data and EF						
	Development of the REL (methodologies & dat)	Deforestation assessment methodology & data (refinement of existing method, if needed) Degradation assessment methodology & data Assessment methodology of reforestation & data		200			**200**
	Definition of emission & removal factor "project"	Studies to develop EF & removal factors		100	100		**200**
		Sub-total	**25**	**350**	**100**	**0**	**475**
4	Operation of the land cover change monitoring system	Development of guidance and QA/QC procedure manuals	25				**25**
		Hiring of additional permanent staff (4)	100	100	100	100	**400**
		Training of analysts	Included in overall capacity building budget (2c)				**0**
		Investments to complement or substitute hard & software	25	25	25	25	**100**
	Development and operation of the forest degradation monitoring system	Design study		200			**200**
		Hiring of additional staff	Included in the above				**0**
		Establishment of a PSP system and initial measurement as part of the NFI	Part of the 3rd national forest inventory				**0**
		Training of field teams and data analysts	Included in overall capacity building budget (2c)				**0**
	Performance monitoring system	Design study	Financed by the FIP				**0**
		Development & testing of monitoring protocols	Financed by the FIP				**0**
		Establishment of QA/QC procedures and training of local foresters	Financed by the FIP				**0**
	Non-carbon benefits monitoring system	Design study		50			**50**
		Establishment and operation of the monitoring system will be piloted as part of FIP Project 2	Financed by the FIP				**0**
		Training of staff	Included in overall capacity building budget (2c)				**0**
	Safeguard information system	Design study			50		**50**
		Establishment and operation of the SIS at the ESMF (database with web-interface) will be piloted as part of FIP Project 2	Financed by the FIP				**0**

Component	Main activity	Sub-Activity	Estimated Cost (in thousands US$)				
			2017	2018	2019	2020	Total
		Training of staff	Included in overall capacity building budget (2c)				0
	Sous-total		150	375	175	125	825
TOTAL R-PP			610	1 485	980	595	3 670

Component 6. Design a Program Monitoring and Evaluation Framework

323. As described in section **Error! Reference source not found.** and highlighted in **Error! Reference source not found.**, the national coordination (CN) for REDD+ and PI/PIF will employ a program monitoring and evaluation (PME) officer, who will continuously keep track of the progress of R-PP implemementation. He/she will work in close coordination with the the working groups and the MRV unit and report progress to the national coordinator.

324. The PME office will make monthly progress enquiries and compile quarterly progress reports, which will be published on the CN website. Further, he/she will be responsible for reporting progress to the UN-REDD Programme and any other donors, as applicable.

325. In operational terms, the PME office will be in constant dialogue with all bodies who bear a responsibility for REDD+ implementation and will remind everyone of the envisaged deliverables and timelines for delivery.

326. Programme Monitoring and Evaluation will be based on a logical framework. A draft logical framework based on the major components of the R-PP is presented below.

Section of R-PP	Outcomes	Outputs	Indicator (achieved by)	Means of Verification	Interval	Responsibilities	Risks
1a	The institutional arrangements for managing the REDD+ Readiness process are set-up and operational From country Results Framework or R-PP components	CN-REDD has been established	April 2017	Decree	Once	MAHRP	None
		Office space has been allocated and equiped	May 2017	Office space available	Once	MAHRP	Timely availability of funding
		National coordinator has been appointed	May 2017	Decree	Once	MAHRP	None
		International REDD+ consultant has been recruited	June 2017	Contract	Once	National REDD+ coordinator	Timely availability of funding
		Communication and PME officers have been recruited	June 2017	Contract	Once	National REDD+ coordinator	Timely availability of funding
		Administrative staff has been recruited	July 2017	Contracts	Once	National REDD+ coordinator	Timely availability of funding
		Focal point for the MRV unit at the forest inventory division has been appointed	July 2017	Contracts	Once	MAHRP	None
		Operational budget approved and available	September 2017	Access to funds	Once	MAHRP / MOF / UN-REDD	Timely availability of funding
1b	Information sharing & consultation infrastructure established and operational	Working groups established	October 2017	Constitution protocol	Once	CN-REDD	None
		Working groups commence work	All 4 WG have started to work by November 2017 and meet at least once every month	Meeting notes	Starting May 2017, monthly	WG Chairs and co-chairs	None
		Website online	Functional by November 2017	Website	Once	IT specialist, communications officer	None

Section of R-PP	Outcomes	Outputs	Indicator (achieved by)	Means of Verification	Interval	Responsibilities	Risks
		Mailing list established, first newsletter sent, monthly newsletters	November 2017	Newsletter	Starting April 2017, monthly	Communications officer	
		Publication of information sharing and consultation guideline	November 2017	Guideline	Once	CN-REDD	None
		Grievance mechanism guideline and standard operating procedure	December 2017	Guideline	Once	CN-REDD	None
		Grievance mechanism regulation	February 2018	Regulation	Once	MAHRP	None
		First sensibilization of stakeholders carried out	Sensibilization leaflet on REDD+ in general and REDD+ in Tunisia is printed and shared with all relevant stakeholder by mid-February 2018; kick-off workshop held by end of February 2018	Leaflet Email communication Workshop report	Once	CN-REDD	None
2b	REDD+ strategy developed & approved	Initial consultation meeting	December 2017	Meeting notes	Once	WG on REDD+ strategy	None
		1st draft REDD+ strategy & 2nd consultation meeting	February 2018	Draft strategy document Meeting notes	Once	WG on REDD+ strategy Int. REDD+ consultantCN-REDD	None
		1st draft REDD+ strategy online for public commenting period	March 2018	Website	Once	Communications officer	None
		2nd draft REDD+ strategy and final consultation meeting	June 2018	Draft strategy document Meeting notes	Once	WG on REDD+ strategy Int. REDD+ consultant CN-REDD	None

Section of R-PP	Outcomes	Outputs	Indicator (achieved by)	Means of Verification	Interval	Responsibilities	Risks
		2nd draft REDD+ strategy online for public commenting period	July 2018	Website	Once	Communications officer	None
		Final draft of REDD+ strategy	September 2018	Draft strategy document	Once	WG on REDD+ strategy Int. REDD+ consultant	None
		Final draft REDD+ strategy online for public commenting period	October 2018	Website	Once	Communications officer	None
		National REDD+ strategy has been validated	Validation workshop held by December 2018 successful validation, i.e. no objections raised	Workshop protocol	Once	WG on REDD+ strategy Int. REDD+ consultant CN-REDD	Non-inclusive process could jeopardize validation
		National REDD+ strategy formally approved	March 2019	Decree	Once	MAHRP	None
2c	A benefit sharing plan has been formulated and approved	Legal analysis of carbon rights	February 2018	Study	Once	WG on benefit sharing Legal consultant Int. REDD+ expert	None
		Initial consultation meeting on REDD+ benefit sharing & investment plan	January 2018	Meeting notes		WG on benefit sharing CN-REDD Consultant	None
		1st draft benefit sharing & investment plan and 2nd consultation meeting	April 2018	Draft strategy document Meeting notes		WG on benefit sharing CN-REDD Consultant	None
		1st draft benefit sharing & investment plan online for public commenting period	May 2018	Website	Once	Communications officer	None
		2nd draft benefit sharing & investment plan and final consultation meeting	August 2018	Draft strategy document Meeting notes	Once	WG on benefit sharing CN-REDD Consultant	None

Section of R-PP	Outcomes	Outputs	Indicator (achieved by)	Means of Verification	Interval	Responsibilities	Risks
		2nd draft benefit sharing & investment plan online for public commenting period	September 2018	Website	Once	Communications officer	None
		Final draft benefit sharing & investment plan	November 2018	Draft strategy document	Once	WG on benefit sharing CN-REDD Consultant	None
		Final draft benefit sharing & investment plan online for public commenting period	December 2018	Website	Once	Communications officer	None
		National benefit sharing & investment plan has been validated	Validation workshop held by February 2018successful validation, i.e. no objections raised	Workshop protocol	Once	WG on benefit sharingCN-REDDConsultant	Non-inclusive process could jeopardize validation
		National benefit sharing & investment plan formally approved	May 2019	Decree	Once	MAHRP	None
		Contract templates for different REDD+ mitigation activities	June 2019	Contract documents	Once	Consultant CN-REDD	None
	A REDD+ pilot financing mechanism is established	Concept study on REDD+ piloting mechanism	March 2019	Study	Once	WG on benefit sharing WG on safeguards CN-REDD Consultant	None
		Consultation meetings with potential financial service providers	September 2019	Meeting notes	Once	WG on benefit sharing CN-REDD Consultant	None
		Agreement with financial service provider signed	November 2019	Contract	Once	CN-REDD Financial service provider	No financial service provider can be found

Section of R-PP	Outcomes	Outputs	Indicator (achieved by)	Means of Verification	Interval	Responsibilities	Risks
		Pilot fund structure and procedures established	May 2020	Status report	Once	Financial service provider	Close coordination with FIP; potential for delays
	A REDD+ registry is established	Initial consultation meeting	September 2019	Meeting notes	Once	WG on REL, MRV & registry Int. REDD+ expert Forest Inventory Division at DGF	None
		Concept study on REDD+ registry	January 2020	Study	Once	WG on REL, MRV & registry Consultant	None
		Agreement on registry design	March 2020	Agreement	Once	WG on REL, MRV & registry CN-REDD Forest Inventory Division at DGF	None
		Establishment of the registry (database)	June 2020	Database	Once	Consultant	None
		Training on registry use	September 2020	Training documentation	Once	Consultant Forest Inventory Division at DGF CN-REDD	None
2d	A set of national REDD+ safeguards is formulated and approved	Sensibilization meetings	By Janaury 2018, 3 sensibilization meetings have been held	Meeting notes	Once	WG on safeguards CN-REDD	None
		The national REDD+ safeguards process is officially launched	Kick-off workshop by March 2018	Workshop report	Once	WG on safeguards CN-REDD	None
		Social & environmental risks have been identified	Study on risks by July 2017	Study	Once	WG on safeguards Consultant CN-REDD	None
		Presentation of risk report and feedback from stakeholders	September 2018	Meeting notes	Once	WG on safeguards Consultant CN-REDD	None
		1st draft of national safeguards & 2nd consultation meeting	December 2018	Draft document Meeting notes	Once	WG on safeguardsConsultantCN-REDD	None

Section of R-PP	Outcomes	Outputs	Indicator (achieved by)	Means of Verification	Interval	Responsibilities	Risks
		1st draft of national safeguards online for public commenting period	January 2019	Website	Once	Communications officer	None
		2nd draft of national safeguards & final consultation meeting	April 2019	Draft document Meeting notes	Once	WG on safeguards Consultant CN-REDD	None
		2nd draft of national safeguards online for public commenting period	May 2019	Website	Once	Communications officer	None
		Final draft of national safeguards	July 2019	Draft document	Once	WG on safeguards Consultant CN-REDD	None
		Final draft of national safeguards online for public commenting period	August 2019	Website	Once	Communications officer	None
		National safeguards have been validated	October 2019	Workshop report	Once	WG on safeguards CN-REDD	Non-inclusive process could jeopardize validation
		National safeguards formally approved	January 2020	Decree	Once	MAHRP	None
	REDD+ safeguards are operationalized	REDD+ safeguards are anchored in REDD+ pilot project selection & approval process	April 2020	Funding guidelines	Once	WG on Safeguards WG on Benefit Sharing CN-REDD	None
		FPIC standard operating procedure are developed	October 2018	SOP	Once	WG on safeguards Consultant CN-REDD	None
3	A reference emission level has been defined	Analysis of forest inventory data and literature	January 2018	Study	Once	WG on REL, MRV & registry CN-REDD Consultant Forest inventory department	None
		Complementary field studies to produce missing data for emission factors	January 2019	Studies	Once	WG on REL, MRV & registry CN-REDD	None

Section of R-PP	Outcomes	Outputs	Indicator (achieved by)	Means of Verification	Interval	Responsibilities	Risks
						Consultant Forest inventory department	
		Calculation of final set of emission factors	April 2019	Studies	Once	WG on REL, MRV & registry CN-REDD Consultant Forest inventory department	None
		Development of a REL methodology	July 2019	Study	Once	WG on REL, MRV & registry CN-REDD Consultant Forest inventory department	None
		Calculation of the final REL	January 2020	REL status report	Once	Forest inventory department Consultant	None
4	A national REDD+ MRV system is developed and operational	The method of the national forest monitoring system is finalized	April 2018	Status report	Once	WG on REL, MRV & registryCN-REDDForest Inventory Division at DGFConsultant	None
		A concept for a degradation monitoring system is developed	July 2018	Concept paper	Once	WG on REL, MRV & registry CN-REDD Forest Inventory Division at DGF Consultant	None
		A permanent sample plot system is established to monitor and report forest degradation	July 2019	Status report	Once	CN-REDD Forest Inventory Division at DGF	None
		A concept for a performance monitoring system in developed	January 2019	Concept paper	Once	WG on REL, MRV & registry CN-REDD Forest Inventory Division at DGF Consultant	None

Section of R-PP	Outcomes	Outputs	Indicator (achieved by)	Means of Verification	Interval	Responsibilities	Risks
		A concept for monitoring of co-benefits is developed	January 2019	Concept paper	Once	WG on REL, MRV & registry CN-REDD Forest Inventory Division at DGF Consultant	None
		Standard operating procedures for the different monitoring systems are developed	January 2020	SOP	Once	WG on REL, MRV & registry Forest Inventory Division at DGF Consultant	None
		QA/QC procedures for the different monitoring systems are developed	January 2020	Procedure manual	Once	WG on REL, MRV & registry Forest Inventory Division at DGF Consultant	None
		Equipment for the operation of the different monitoring systems is procured	April 2020	Status report	Once	CN-REDD Forest Inventory Division at DGF	None
		Training of remote sensing analysts and field staff is carried out	April 2020	Training reports	Once	CN-REDD Forest Inventory Division at DGF Consultant	None

Component 7. Annexes for the R-PP

Annex 1: List of institutions/individuals consulted during the execution of the 3 studies launched by the DGF to further the REDD+ process

Annex 2: List of participants to the validation workshop (March 2016) of the 3 studies launched by the DGF to further the REDD+ process

Annex 3: Resource person and structures consulted during the drafting process R-PP IP/FIP

Annex 4: List of participants of the national consultation workshop of 6 September 2016

Annex 5: Detailed presentation of indirect deforestation and forest and rangelands degradation drivers

Annex 6: Presentation of national institutions intervening in natural resources management

Appendix 15: Description of the expected socio-economic co-benefits linked to IP/FIP investments

Access to resources, promotion of the products and poverty reduction

130. The current legal and institutional context severely restricts the access of rural populations to forest and pastoral resources (Appendix 2). The promotion of new modes of governance and management of forest and pastoral areas will result in an improved involvement of the populations in the management of natural resources through a participatory and integrated approach. The adoption of co-management principles, associated with the strengthening of the legal framework and support and capacity-building measures for the Administration and local organizations will enable **an easier access to forest and pastoral products for the populations**.

131. Making access to resources easier, combined with work on the promotion and the development of the forest and pastoral products value chains will **improve their degree of use and value**. This is particularly the case of many non-timber forest products, such as medicinal and aromatic plants (Myrtle, Rosemary, mastic tree, etc.) and products intended for consumption (fungi, Aleppo Pine seeds and Pine nuts). It also concerns the valorisation of agricultural by-products as feed. The forest and pastoral products value chains face today many difficulties, such as lack of organization and producer groups, the low degree of transformation, the lack of certification and/or quality label, etc. The support provided by the of the PIF Investment Projects in these sectors (or value chains) will **optimize the entire production and marketing process** (quality control, transport, marketing, etc.), in order to increase the added value of forest and pastoral products operated by local people.

132. Improving access to forest and pastoral resources (see § 130), coupled with the **increase in value-added forestry, pastoral and agricultural products** linked to the development of the value chains (see § 131), will improve and diversify the income of local people. The development of joint- management mechanisms involving local organizations and the private sector will generate a genuine **economic development of rural areas** and replace low and one-off household income related to casual labor payment by a more sustainable income. The improvement of the valorisation of agricultural side products will allow also reduce expenses linked to livestock feed supplements, and thus to improve the economy of the households.

133. Tourism is an important economic activity in Tunisia (see § 129). Ecotourism and recreational activities in the forest and pastoral spaces in direct relation with the natural heritage represent a non negligible potential for a better use and improved value of these ecosystems and of income diversification for local populations. The protection and sustainable management of forest and pastoral ecosystems, together with the promotion of new activities bringing to the fore specific products of the concerned regions, would allow the development of a new type of tourism (national, initially). Supervision and technical and financial support to entrepreneurs for setting up projects or the marketing of regional products would complement the economic revenues from seaside tourism, which is currently experiencing cyclical and structural problems. This development should take place in addition to the various initiatives already undertaken in the promotion of Saharan tourism and within the national nature parks in the South and Centre of Tunisia (in particular the project funded by the Japanese cooperation in the Governorates of Tozeur and Kebili).

Reduction of disparities

134. There are today in Tunisia regional disparities between rural and urban areas. The cities of Tunis, Sfax and Sousse are the economic heart of the country and host 85% of the GDP, while the poverty rate in 2010 was nearly twice higher than the national average in the Northwest and Midwest (World Bank,

2014)[95]. The reduction of poverty in the rural forest and pastoral territories will enable to reduce these regional disparities.

135. Despite the efforts undertaken in Tunisia for the promotion of women's economic and social rights, their socio-economic situation remains precarious, and the gender gap remains important. Less than one woman in five in rural Tunisia (18.5%) and less than two women in five in urban Tunisia (39.8%) are employed. In 2013, the female unemployment rate was 21.9% compared to 12.9% for men (World Bank, 2014). Young women's wages are one quarter lower than the wages of young men (World Bank, 2014) 96. The unemployment rate of young graduates, and especially for women, is also particularly high. The activities programmed by the present IP/FIP will focus on to the issue of gender and gender equality. Young people and women constituting the poorest fringes of the population, the involvement of the younger sections of the population in the management and development of natural resources will be also encouraged. **The consultation mechanisms, capacity-building activities and support to the development of income-generating activities related to forestry and pastoral will therefore target as much as possible the women and the youth, so as to reduce these inequalities.**

136. As presented in Appendix 12, the current legal framework only helps businesses with important means to get access to forest products put up for sale by tender, and promotes the development of illegal activities, most of the profit of which does not come back to the populations. **The evolution of the regulation toward an easier access to forest and pastoral resources for local people and the private sector will reduce these disparities**, promoting the generation of direct income by local people, **improving the fairness of the benefit sharing** from the exploitation and processing of the forest and pastoral products.

[95] Banque Mondiale, 2014. La Révolution Inachevée. Créer des opportunités, des emplois de qualité et de la richesse pour tous les Tunisiens. Mai 2014. 362 p.

[96] World Bank, 2014b Tunisia. Breaking the Barriers to Youth Inclusion (World Bank, Washington).

Appendix 16: Presentation of the activities of the technical and financial partners of Tunisia

Multilateral Development Banks

World Bank

137. Since 2011, the World Bank Group adjusted its strategy for Tunisia to match the transition objectives. The bulk of its assistance took the form of a series of loans in support of development policies, especially to support comprehensive structural reforms aimed at strengthening public sector governance, improve transparency and access to information, etc. In addition to loans, the World Bank grants many smaller scale financial donations, to support various development projects, by supporting innovation, in particular in the field of the ecosystems protection and management. The valid partnership framework between the World Bank and Tunisia for the 2016-2020 period revolves around good governance according to 4 development focuses:

- Build a higher value added economy;
- Ensure human development and social inclusion;
- Improve consideration for the needs of the regions;
- Promote sustainable development and green growth.

138. In the course of the past two decades, the World Bank interventions in the agricultural and forestry sector are as follows:

- *Projet de Développement Forestier* (PDF 1 & 2; Forest Development Project) from 1985 to 1995;
- *Plan d'Action National pour l'Environnement* (PANE; National Environmental Action Plan), which gave rise to the *Projets de Gestion des Ressources Naturelles* (PGRN Phase 1 from 1997 to 2004 & Phase 2 from 2012 to 2016; Natural Resources Management Projects);
- *Programme de développement des zones montagneuses et forestières du Nord-Ouest* (PNO; Northwest Forest and mountainous Areas Development Program), focused on agricultural and agro-pastoral development, and supported by the World Bank during three successive phases (PNO2, PNO3, PNO4) ongoing from 2011 to 2017;
- *Programme d'Investissement dans le Secteur de l'Eau* (PISEAU 1 et 2; 2009-2014; Investment Program of in the Water Sector), joint management by AfDB and AFD;
- *Projet « Écotourisme et conservation de la biodiversité désertique* » (Eco-tourism and desert biodiversity conservation" Project), involved in the management of three national parks in southern Tunisia;
- *Projet de Gestion Durable des Écosystèmes Oasiens en Tunisie (GDEO;* Sustainable Management of Oasian Ecosystems in Tunisia), focusing, inter alia, on the conservation of biodiversity and adaptation to climate change;

African Development Bank

139. The African Development Bank (AfDB) intervenes in Tunisia mainly in the agricultural and infrastructure sectors. In its intervention strategy in Tunisia for 2014-2015, the ADB proposes to strengthen its support in terms of technical assistance for the implementation of its portfolio by refocusing its intervention on two pillars: governance and infrastructure. A new Country Strategy Document is currently being prepared (for the period 2017-2021).

140. AfDB's interventions in relation with the management of natural resources mainly occur through PISEAU 2 and the Integrated Rural Development Project (PDAI), such as the project of Gabès II PDAI (ongoing), the Zaghouan PDAI (in preparation), as well as several other completed PDAI (Mahdia, Gafsa North).

European Bank for Reconstruction and Development

141. Founded in 1991, the European Bank for Reconstruction and Development (EBRD) aims to "promote the transition to market economies" and to "promote private initiative and entrepreneurship". The EBRD began its activities in Tunisia in 2012 and targets, among others, the following objectives: (i) to promote the financing of small and medium-sized enterprises to create well paid jobs in the private sector to develop a strong and diversified economy, (ii) support energy efficiency and develop a sustainable energy sector, and (iii) facilitate non state financing to develop infrastructures enabling access to the better quality and more efficient services.

142. With its "Transition to green economy[97]" strategy and through the "Private sector for food security" initiative, the EBRD supports the sustainable development of the agricultural sector in 18 countries, including Tunisia. In Tunisia, the EBRD has supported the agricultural sector through investments in agricultural enterprises and the provision of technical assistance in the framework of (i) the financing of the Borges and Sanlúcar Flor agribusiness to increase the export potential of the sector, (ii) the development of the MedAgri network (www.medagri.org) in collaboration with FAO and the World Bank to facilitate cooperation among agricultural enterprises in the Southern and Eastern region of the Mediterranean, and (iii) cooperation with the olive oil sector, in collaboration with FAO, through a public-private working group to support the development of the national strategy for olive oil.

143. In relying on its relations in the agricultural sector and examining opportunities in other sectors, the EBRD seeks innovative, sustainable and focused solutions on the market and intends to contribute, inter alia, to projects in the private sector as well as projects outside the forestry sector but contributing to the reduction of the pressure on forests in support of the FIP objectives achievement.

144. The EBRD attaches particular importance to the recognition of the importance of civil society as a key actor for the realization of its mandate. The EBRD explores opportunities for strengthening the capacities (technical, institutional, and communication) of civil society organizations to meet the challenges in the implementation of IP/FIP investment projects and maximize the social, environmental and economic co-benefits. The EBRD contribute in that way inter alia to the training of civil society organisations related to (i) the implementation of awareness-raising activities among local populations, (ii) the promotion of sustainable positive behavioural change concerning the sustainable use and participatory management of agroforestry and pastoral resources, and (iii) the contribution to revenue-generating green activities.

Other partners

French Development Agency – French Facility for Global Environment

145. The French Development Agency (AFD) is involved since 1992 in several sectors, including agriculture and the preservation of the environment in relation to natural resources. Its intervention strategy for the period 2014-2016 aims at responding to the challenges faced by the country to accompany it in its economic and social transition through job creation and social and vocational integration, and the sustainable development of its territories. Its link with the IP/FIP interventions include:

- The *Programme de Financement Cadre de Gestion des Bassins Versants* (FCGBV; the Catchment Basins Management Framework Funding Programme), currently being completed (over 10 governorates);
- The promotion of a new mode of governance of the Chaâmbi National Park;

[97] *Green Economy Transition*

- Management of coastal aquifers of the Gabès oasis;
- Participation to PISEAU 2.
- The climate change adaptation program in vulnerable rural areas (*Programme d'Adaptation au Changement climatique des Territoires ruraux vulnerable;* PACTE) under preparation, which intervenes in support of the DGACTA.

146. The French Facility for Global Environment (FFEM) funded the "To optimize the production of goods and services by Mediterranean forest ecosystems in a context of global change" project, for which 2 out of 8 pilot sites are located in Tunisia.

International Fund for Agricultural Development (IFAD)

147. Two founding strategic options characterise the intervention of the International Fund for Agricultural Development (IFAD) in Tunisia. The first concerns the choice of intervention areas and the most disadvantaged populations, in accordance with the national policy to reduce regional disparities and rural exodus. The second concerns the concentration on the agricultural sector and the inclusion of projects in the agricultural development policy and sectoral planning framework. The developed projects and programmes are:

- integrated agricultural development Projects (PDAI 1 and 2) of Siliana, including an important component of the Global Environment Fund (GEF), currently being completed, and for which a new phase is under preparation;
- Agro-pastoral development and local initiatives promotion program for the South East (phase II, ongoing), involved in the management of collective rangelands and pastoral development;
- Agro-pastoral development and associated value chains in the Governorate of Médenine (PRODEFIL) in the field of the collective rangelands management and agro-pastoral development (ongoing).

The Japan International Cooperation Agency (JICA)

148. The intervention of the Japanese International Cooperation Agency (JICA) aims to reduce economic and regional disparities in Tunisia. To do this, JICA brings a financial support targeted on the development of road and urban infrastructure, and in particular those relating to the water supply. On the technical side, JICA provides its support for the strengthening of industrial added value and productivity improvement. JICA also provides a commercial assistance working with the private sector to strengthen the export of high quality agricultural products such as olive oil.

149. On themes in connection with the IP/FIP, JICA contributed to the financing of the Integrated Forest Management Project (PGIF 1 and 2). Its 2nd phase is nearing completion.

Global Environment Facility

150. As a general rule, assistance from the Global Environment Facility (GEF) revolves around enabling activities and/or pre-investment in various sectors according to national priorities and policies. The GEF interventions in relation to IP/FIP are closely linked to the implementation of international conventions, such as:

- the proposed Alignment National Biodiversity Strategies And Action Plans with the Convention on Biological Diversity (CBD) and the Aichi objectives (ongoing)[98]. This project involves inter alia an action Plan of financial resources mobilization for the financing of biodiversity, including in the field of forests and rangeland;

[98] *Aichi objectives are the ne Strategic Plan for biological diversity 2011-adopter by the Parties of CDB in October 2010.*

- Project related to the fight against the degradation and pollution of rangeland/alfa ecosystems by persistent organic pollutants in the centre of Tunisia (in preparation), in relation with the Stockholm convention;
- the project “Addressing multiple threats to ecosystems, human health and livelihoods in west-central Tunisia”, in connection with the Stockholm Convention, which aims to combat the degradation of pastoral/alfa ecosystems and pollution by persistent organic pollutants and which is being prepared in partnership with the United Nations Development Programme (UNDP);
- Alignment of the national fighting strategy against desertification on the ten-year strategy of of the United Nations Convention to Combat Desertification (pending start).

United Nations Food and Agriculture Organization (FAO)

151. As an execution and cooperation agency, FAO cooperated with the DGF in the context of the implementation of forest development projects co-financed by the partners of the DGF (World Bank, JICA) and awarded in addition technical cooperation projects, to Tunisia, through grants, including:

- The 'Technical Assistance to participatory community forest development project’ (1998-2002);
- The «Strategic study of integrated forest management» project (2005-2007);
- The "Support for the establishment of joint management mechanisms for the sustainable development of the Tunisian forests" project (2008-2010);
- The 'Support for the promotion of forestry enterprises based on NWFP to improve the livelihood of forest peoples and the sustainable management of Tunisian forest resources' project (2011-2013);
- The "optimize the production of goods and services by Mediterranean forest ecosystems in a context of global change" project, financed by the FFEM and including FAO as implementing agency, with the Blue Plan.

International German cooperation Agency (GIZ)[99]

152. The GIZ supported Tunisia in four sectors, with a particular focus on the development of rural areas:

- Sustainable management of natural resources;
- Renewable energy and energy efficiency;
- Sustainable economic development and employment;
- Regional development, local governance and democracy.

153. Among the many activities developed by GIZ in forestry and climate change can be listed:

- The implementation of the "Promotion of Sustainable Agriculture and Rural Development" project (PAD), ongoing (2013-2016), based on the 'value chain' approach and the strengthening and mobilisation of local and national expertise.
- the design of studies related to the adaptation strategy of the Tunisian agriculture to climate change and to the national strategy on climate change.
- completion of a study on the analysis of the cost-benefit of REDD+ in Tunisia;
- the development of the national strategy for the development and sustainable management of forests and rangelands 2015 - 2024;
- the preparation of a draft of NAMA[100] in the agricultural and forestry sector

[99] Gesellschaft für Internationale Zusammenarbeit

[100] *Nationally Appropriated Mitigation Action*

Appendix 17: Approach and logic of intervention of the FIP in Tunisia

154. Tunisia presents much specificity distinguishing it from the majority of other countries which acceded to the FIP. It is the only Mediterranean country in the program. Its forest cover is relatively small and productivity of its forests is limited. Nevertheless, Tunisian forests and rangelands are a genuine national issue, because of their economic importance and the essential ecosystem services they provide. In addition, the aridity of the climate (therefore, the scarcity of water resources) and the poverty of the rural population make forest and pastoral territories particularly vulnerable to climate change, which further strengthens the fundamental role of the forest and pastoral sector. In this sense, Tunisia committed in the UN-REDD Programme with the objective of valuing primarily the non carbon benefits of the process, such as adaptation to climate change, the preservation of biodiversity, the protection of the rights of peoples, poverty reduction and the improvement of the living conditions of local populations. Tunisia also presented in April 2014 a submission to the Subsidiary Body for Scientific and Technological Advice (SBSTA) of the UNFCCC highlighting the importance of valuing the non carbon benefits of REDD+. The Tunisian IP/FIP fits in this context. Unlike many countries where the key challenge is linked to the reduction of GHG emissions related to deforestation and forest degradation, the specificities of Tunisia require to steer its IP/FIP as well to social, economic and environmental co-benefits (non carbon) towards the reduction of GHG emissions (or improvement of carbon sequestration).

155. As mentioned in the previous sections, the Tunisia presents also the particularity to have experience and important achievements in terms of management of forest and pastoral resources (availability of skills, existence of numerous projects, programmes and studies, etc.). IP/FIP therefore aims in priority to promote these achievements and lessons of past experiences to improve the protection and sustainable management of Tunisian forests and rangelands and the development of the sector. The projects proposed in section 6 of the IP/FIP have been developed in this sense.

156. As the only Mediterranean country IP/FIP, that of Tunisia plays a specific role so that the specificities of Mediterranean forests are recognized and taken into account internationally, and particularly in programs such as the FIP or REDD+. Innovative and transformational investments proposed in the present IP/FIP will have vocation to be used elsewhere and replicated in all of the Mediterranean subregion.

157. The selection of Tunisia among the FIP pilot countries represents also a significant opportunity for the country to mobilize funding for the development of the forest and pastoral sector. In addition, the criteria for investment imposed by the FIP (climate change mitigation capacity, potential for transposition, economic efficiency, potential success, integration of sustainable development and safeguard measures) to ensure the implementation of a participatory multisectoral and multidimensional approach, a satisfactory national ownership and the improvement of governance.

Appendix 18: Intervention areas of the Project n° 1

Appendix 19: Intervention areas of the Project n° 2

Appendix 20 : Intervention areas of the Project n° 3