Qatar National Food Security Strategy
2018 – 2023

Food Security Department

January 2020
To build a robust food security strategy, Qatar should focus on four pillars:

**Interdependent food security strategy**

- Ensure that trade routes are **diversified** so that risk-exposure is limited
- **Contingency plan for** alternative routes as needed
- **Move food from port, field or reserves to table** as efficiently as possible (i.e., limiting food losses/waste), with regulations that foster competition and encourage safety
- **Put in place adequate but sensible reserve capacity** to act as a buffer in time of crisis, both for inputs (water, seeds, fertilizer) and outputs (food products)
- **Efficiently cultivate** crops, meat and fish within the confines of a Qatar’s resource base to ensure a stable source of perishables in times of crisis
- **Provide a regulatory framework** that creates incentives to focus on commodities that make sense from a cost-competitiveness point of view
Going forward, Qatar should pursue 13 initiatives to make its food system more robust against potential supply shock scenarios in the future.

<table>
<thead>
<tr>
<th>Pillars</th>
<th>Food Security Strategy initiatives</th>
</tr>
</thead>
</table>
| **International Trade and Logistics** | A1 Geographically diversify trade partners for critical commodities to reduce Qatar’s exposure to external factors by having 3-5 partners per critical commodity  
A2 Proactively put in place contingency plans to limit impact of trade shocks or other exogenous disruptions |
| **Domestic Self-sufficiency** | B1 Increase vegetable production by establishing a hydroponics greenhouse cluster to reach 70% self-sufficiency on greenhouse vegetables (e.g., tomatoes, pepper, cucumber, squash, lettuce)  
B2 Expand and improve production capacity for red meat (fattening units and breeding farms for sheep and goat) and fisheries (fish farms)  
B3 Cap production of fresh milk and poultry to 100% self-sufficiency by discontinuing tenders and redirecting capacity to other purposes (shifting poultry surplus to egg production)  
B4 Reduce ground water-based fodder production by switching to TSE |
| **Strategic Reserves** | C1 Leverage the private sector to store a broad range of products to act as a permanent short-term buffer against shocks to the system  
C2 Put in place strategic reserves of perishables and select non-perishables as an insurance against potential trade and production disruptions  
C3 Increase potable water reserves as an insurance against potential crisis scenarios, balancing risk-exposure and ‘insurance’ cost  
C4 Reduce net depletion of the Aquifer by optimizing water usage in agriculture |
| **Domestic Markets** | D1 Streamline the domestic go-to-market model (farmgate to retail) to ensure transparency in the price setting process and assist farmers in improving their productivity and quality of produce  
D2 Establish integrated food waste program, including collection and treatment / alternative usage of organic waste  
D3 Optimize and simplify the governance of food standards in Qatar, to monitor food safety in the country and to supervise quality certification more effectively |
Strategy pillar: International trade and logistics

Ensure that Qatar’s food import strategy is resilient against potential trade shocks and disruptions and that Qatar can quickly react to the loss of trade partners or a drop in self-sufficiency.

### Initiatives

<table>
<thead>
<tr>
<th>Description</th>
<th>Action plan (near-term)</th>
<th>Performance metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographically diversify trade partners for critical commodities to reduce Qatar’s exposure to external factors by having 3-5 partners per critical commodity</td>
<td>• Develop future state for sourcing countries and trade partnerships</td>
<td><strong>KPI</strong></td>
</tr>
<tr>
<td></td>
<td>• Determine regulatory levers to incentivize private sector to diversify</td>
<td><strong>A1</strong> Number of trade partners per commodity</td>
</tr>
<tr>
<td></td>
<td>• Initiate relationship building support between Qatar private sector and trade missions / entities in target countries</td>
<td><strong>A1</strong> Share of imports from top 2 partners</td>
</tr>
<tr>
<td>Proactively put in place contingency plans (both for the private sector and public sector) to limit impact of trade shocks or other exogenous disruptions</td>
<td>• Private sector to develop contingency plans based on guidelines set by government</td>
<td><strong>A2</strong> Presence of contingency plan by importer³</td>
</tr>
<tr>
<td></td>
<td>• Test effectiveness of “rerouting” contingency plans for resilience in collaboration with Somod</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Develop data dashboards to track readiness</td>
<td></td>
</tr>
</tbody>
</table>

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1 70% for 3 partners and 50% for 5 partners
2 Number of partners to be reduced once self-sufficiency rates increase over time
3 Only importers of considerable size (not for small/premium importers), list of eligible importers to be decided
Diversification and contingency planning efforts should focus on a number of critical commodities.

<table>
<thead>
<tr>
<th>Perishables</th>
<th>Consumed amount - Tons/year</th>
<th>Self-sufficiency %</th>
<th>Shelf life weeks</th>
<th>Non-perishables</th>
<th>Consumed amount - Tons/year</th>
<th>Self-sufficiency %</th>
<th>Shelf life weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomato</td>
<td>48,197</td>
<td>30%</td>
<td>3-4</td>
<td>Milk</td>
<td>231,946</td>
<td>84%</td>
<td>1-2</td>
</tr>
<tr>
<td>Cucumber</td>
<td>19,488</td>
<td>62%</td>
<td>4</td>
<td>Fresh poultry</td>
<td>22,100</td>
<td>98%</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Pepper</td>
<td>13,472</td>
<td>9%</td>
<td>4</td>
<td>Fresh water fish</td>
<td>NA</td>
<td>NA</td>
<td>1-2</td>
</tr>
<tr>
<td>Squash</td>
<td>7,208</td>
<td>51%</td>
<td>3-4</td>
<td>Seawater fish</td>
<td>40,838</td>
<td>37%</td>
<td>1-2</td>
</tr>
<tr>
<td>Cabbage</td>
<td>8,974</td>
<td>24%</td>
<td>3-8</td>
<td>Other seafood</td>
<td>5,273</td>
<td>0%</td>
<td>1-2</td>
</tr>
<tr>
<td>(Water)melon</td>
<td>24,416</td>
<td>5%</td>
<td>2-3</td>
<td>Sheep meat</td>
<td>53,000</td>
<td>14%</td>
<td>1-2</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>9,868</td>
<td>15%</td>
<td>1-3</td>
<td>Camel meat</td>
<td>6,000</td>
<td>28%</td>
<td>1-2</td>
</tr>
<tr>
<td>Potato</td>
<td>58,880</td>
<td>~0%</td>
<td>20</td>
<td>Beef</td>
<td>7,000</td>
<td>3%</td>
<td>1-2</td>
</tr>
<tr>
<td>Onions</td>
<td>84,662</td>
<td>3%</td>
<td>12-34</td>
<td>Eggs</td>
<td>31,850</td>
<td>23%</td>
<td>12</td>
</tr>
<tr>
<td>Lettuce</td>
<td>6,749</td>
<td>6%</td>
<td>&lt;1</td>
<td>Frozen poultry</td>
<td>96,805</td>
<td>~0%</td>
<td>~100</td>
</tr>
<tr>
<td>Eggplant</td>
<td>10,244</td>
<td>47%</td>
<td>Up to 40</td>
<td>Rice</td>
<td>183,600</td>
<td>0%</td>
<td>17</td>
</tr>
<tr>
<td>Herbs</td>
<td>NA</td>
<td>NA</td>
<td>50</td>
<td>Wheat</td>
<td>210,986</td>
<td>~0%</td>
<td>17</td>
</tr>
<tr>
<td>Banana</td>
<td>40,318</td>
<td>0%</td>
<td>4</td>
<td>Legumes</td>
<td>40,821</td>
<td>0%</td>
<td>50-100</td>
</tr>
<tr>
<td>Apples</td>
<td>29,661</td>
<td>0%</td>
<td>30</td>
<td>Sugar</td>
<td>65,904</td>
<td>0%</td>
<td>13</td>
</tr>
<tr>
<td>Citrus</td>
<td>60,551</td>
<td>1%</td>
<td>8-12</td>
<td>Oils</td>
<td>80,460</td>
<td>0%</td>
<td>17</td>
</tr>
<tr>
<td>Dates</td>
<td>32,426</td>
<td>87%</td>
<td>13-39</td>
<td>Milk powder</td>
<td>24,332</td>
<td>0%</td>
<td>13</td>
</tr>
</tbody>
</table>

1 Contingency plan for perishables only
SOURCE: MME data, MEC data
Qatar needs to geographically diversify trade partners for critical commodities to reduce its exposure to external factors.

**Critical perishables**

Current source differentiation for tomato, % of imports

- Iran: ~80%
- Morocco: ~5%
- Turkey: ~3%
- Holland: ~1%
- Others: ~11%

Suggested source differentiation for tomato, % of imports

- Iran: ~30%
- Turkey: ~20%
- Jordan: ~20%
- India: ~20%
- Other: ~10%

**Critical non-perishables**

Current source differentiation for wheat, % of imports

- Russia: ~29%
- India: ~5%
- Australia: ~4%
- Romania: ~4%
- Others: ~58%

Suggested source differentiation for wheat, % of imports

- Russia: ~40%
- India/Turkey: ~30%
- Canada/Australia: ~30%
- Romania/Ukraine: ~0%
- Others: ~0%

There are only limited countries within ~14 days of (land+)seaborne transport from Qatar. Due to the limited shelf-life and cost of cooled transport, the group of trade partners should be limited to these countries in a steady-state scenario.

- For perishables, in steady state, the list of potential countries will be determined by the transportation time and the perishable shelf-life.
- In a steady-state scenario, airborne trade routes should be avoided due to the cost (with the exception of limited premium products).
- In an ideal world Qatar would have 4-5 partners for every perishable. However, the minimum quantity sourced per week from a partner should be 10 ton (container size). This cost limitation might impact the number of partners proposed.
- If strategic reserves for non-perishables are in place, diversification should mainly be driven by financial reasons. A 6+ month reserve should suffice to guarantee the food security.
## Strategy pillar: Domestic self-sufficiency

Ensure Qatar’s self-sufficiency in strategic commodities (i.e., perishables that Qatar can produce competitively) and shift production towards best practice technologies to drive yield improvement.

**Initiatives**

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<th>Description</th>
<th>Action plan (near-term)</th>
<th>Performance metrics</th>
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</thead>
<tbody>
<tr>
<td><strong>B1. Vegetables</strong></td>
<td>Increase vegetable production by establishing a hydroponics greenhouse cluster to reach 70% self-sufficiency on greenhouse vegetables</td>
<td>Complete greenhouse cluster infrastructure plans, Develop bid guidelines (including subsidy programs) for private sector operators and launch process</td>
</tr>
<tr>
<td><strong>B2. Red meat &amp; fresh fish</strong></td>
<td>Expand and improve production capacity for relevant varieties of red meat and fish</td>
<td>Setup intensive fattening units &amp; better herd mgmt. for livestock, Streamline livestock breeding in the private sector, Monitor ongoing fish farming projects for timely completion</td>
</tr>
<tr>
<td><strong>B3. Fresh milk &amp; fresh poultry</strong></td>
<td>Cap production of fresh milk and poultry, and shift additional capacity to other purposes</td>
<td>Suspend any new project tenders, Shift additional capacity towards milk derivatives or frozen poultry / egg production</td>
</tr>
<tr>
<td><strong>B4. Fodder</strong></td>
<td>Reduce ground water-based fodder production by switching to TSE</td>
<td>Estimate TSE availability for fodder &amp; infrastructure needs, Develop a transition plan for existing fodder producers</td>
</tr>
</tbody>
</table>

1. Additionally to the KPIs listed, 2 water-related KPIs should be monitored to evaluate progress of the strategy: water consumption per crop, and distribution of irrigation systems used in agriculture, i.e. % of land using flood irrigation, sprinkler irrigation, drip irrigation, hydroponics.
### Principles we used to determine self-sufficiency targets for local production

<table>
<thead>
<tr>
<th>If...</th>
<th>Sourcing strategy</th>
<th>Reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Product is not perishable</td>
<td>Source everything from abroad; 0% production locally</td>
<td>• Product can be stored in strategic reserves to protect against trade shocks</td>
</tr>
<tr>
<td>• Product is perishable but cannot be produced sustainably and competitively locally</td>
<td>Produce in Qatar but cap production at 70%</td>
<td>• Agronomic conditions do not allow for local production</td>
</tr>
<tr>
<td>• Product is perishable and can be produced sustainably locally but currently there is low production in Qatar</td>
<td>Cap production at 100% and potentially reroute additional capacity to derivatives</td>
<td>• Leave room for variety from imports</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Limit waste due to production fluctuations</td>
</tr>
<tr>
<td>• Product is perishable, can be produced sustainably locally and we are already close to 100% self-sufficiency</td>
<td></td>
<td>• There is no sense in over-producing and exporting as this means Qatar will export water</td>
</tr>
</tbody>
</table>

**Exceptions to the rules:**
- Fodder can be produced sustainably with available TSE
- Current population of goats and sheep can be used to expand local production of red meat even though relatively less economically viable
Qatar should increase local production of perishables to secure 30% to 70% self-sufficiency in strategic commodities

<table>
<thead>
<tr>
<th>Category</th>
<th>Current self-sufficiency, %</th>
<th>Perishability</th>
<th>Self-sufficiency target, %</th>
<th>Directional recommendation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>28%</td>
<td>&lt;1 month</td>
<td>70%</td>
<td></td>
<td>Self-sufficiency should be maximized while leaving room for variety from imports and limiting waste</td>
</tr>
<tr>
<td>Eggs</td>
<td>28%</td>
<td>3 months</td>
<td>70%</td>
<td></td>
<td>Self-sufficiency should be maximized while leaving room for variety from imports and limiting waste</td>
</tr>
<tr>
<td>Red meat</td>
<td>18%</td>
<td>&lt;1 month</td>
<td>30%</td>
<td></td>
<td>Assuming 30-40% of sheeps/goats and 10% of cattle are raised for meat consumption</td>
</tr>
<tr>
<td>Fresh fish</td>
<td>74%</td>
<td>&lt;1 month</td>
<td>95%</td>
<td></td>
<td>Assuming 5% of fresh fish cannot be produced in Qatar (e.g., sardines)</td>
</tr>
<tr>
<td>Fresh dairy</td>
<td>106%</td>
<td>&lt;1 month</td>
<td>100%</td>
<td></td>
<td>Capped at 100% self-sufficiency to avoid excessive resource usage</td>
</tr>
<tr>
<td>Dairy derivatives (e.g., butter)</td>
<td>20%</td>
<td>1-2 months</td>
<td>0-50%</td>
<td></td>
<td>Not competitive to produce locally, but potential solution for over-production</td>
</tr>
<tr>
<td>Fresh poultry</td>
<td>124%</td>
<td>&lt;1 month</td>
<td>100%</td>
<td></td>
<td>Capped at 100% self-sufficiency to avoid excessive resource usage</td>
</tr>
<tr>
<td>Frozen poultry</td>
<td>0.2%</td>
<td>&gt; 1 year</td>
<td>0%</td>
<td></td>
<td>Not competitive to produce locally</td>
</tr>
<tr>
<td>Fodder</td>
<td>54%</td>
<td>&gt;1 year</td>
<td>63%</td>
<td></td>
<td>Increase Fodder production using recycled water</td>
</tr>
<tr>
<td>Cereals &amp; legumes</td>
<td>0%</td>
<td>&gt;1 year</td>
<td>0%</td>
<td></td>
<td>Not competitive to produce locally</td>
</tr>
</tbody>
</table>

1 To cover this need, current production could be shifted to eggs to avoid over-production of poultry meat and goat (1.3 mn) would be used productively; 3 Side product from dairy production; 4 Over-production expected to reach 44% by 2020; 2 Rough production if current population of sheep and goat (1.3 mn) would be used productively; 3 While this is the target, it is not binding: The sector should be monitored very closely and deadline should be extended if the phase out endangers production of red meat

SOURCE: Ministry of Municipality & Environment, QNFP 2013, Ministry of Statistics
### Strategy pillar: Strategic reserves

Put in place adequate but sensible reserves to act as a buffer against temporary import or production disruptions and as an insurance policy against longer term shocks to the system.

**Initiatives**

<table>
<thead>
<tr>
<th>C1. Private sector reserves</th>
<th>Description</th>
<th>Action plan (near-term)</th>
<th>Performance metrics</th>
</tr>
</thead>
</table>
| Leverage the private sector to store a broad range of products to act as a permanent short-term buffer against shocks to the system | • Create policy framework for private sector role  
• Engage private sector to develop a roadmap with timelines for setup of buffer stocks |  |

<table>
<thead>
<tr>
<th>C2. Public sector reserves</th>
<th>Description</th>
<th>Action plan (near-term)</th>
<th>Performance metrics</th>
</tr>
</thead>
</table>
| Put in place strategic reserves of perishables and select non-perishables as an insurance against potential trade and production disruptions | • Baseline existing storage plans to validate reserve requirements  
• Develop infrastructure blueprint and validate investment plans  
• Develop process and identify partners for reserve management |  |

<table>
<thead>
<tr>
<th>C3. Potable water reserves</th>
<th>Description</th>
<th>Action plan (near-term)</th>
<th>Performance metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase potable water reserves using underground reservoirs as a long-term storage mechanism</td>
<td>• Commission detailed design and tender requirements for underground water storage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C4. Groundwater reserves</th>
<th>Description</th>
<th>Action plan (near-term)</th>
<th>Performance metrics</th>
</tr>
</thead>
</table>
| Reduce net depletion of the Aquifer by optimizing usage of groundwater in agriculture | • Develop plans to increase TSE production from wastewater  
• Evaluate plans for desalination capacity expansion |  |

1 Additionally to the KPIs listed, 2 water-related KPIs should be monitored to evaluate progress of the strategy: water consumption per crop, and distribution of irrigation systems used in agriculture, i.e. % of land using flood irrigation, sprinkler irrigation, drip irrigation, hydroponics
The strategic food reserves have a double purpose - act as a short-term buffer against shocks and an insurance policy against longer disruptions.

<table>
<thead>
<tr>
<th>Reserve use</th>
<th>Component</th>
<th>Products to store</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer against shocks</td>
<td>Private sector storage</td>
<td>• Perishables (fruits, vegetables, dairy, meat) • Selected dry goods</td>
<td>• Share burden on ensuring short term food supply with private sector • Guarantee full diet on 2-4 weeks basis for full pop.¹</td>
</tr>
<tr>
<td></td>
<td>Strategic short-term reserves of perishables</td>
<td>• Onions • Apples • Carrot • Dates • Potato • Red meat • (Frozen) poultry</td>
<td>Provide a healthy and balanced quality diet • High consumption • Good storability and shelf-life • Healthy nutritional mix</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longer term “insurance policy”</td>
<td>Strategic long-term reserve of non-perishables</td>
<td>• Wheat • Edible oils • Beans • Sugar • Rice • Powder milk</td>
<td>Provide sufficient calorific intake • Very high storability and long shelf-life • High calorific content</td>
</tr>
<tr>
<td></td>
<td>Long-term reserve of agricultural inputs</td>
<td>• Agricultural chemicals • Fertilizer • Seeds • Fodder • Animal medicine etc.</td>
<td>• Required to sustain agricultural efforts and remain self-sufficient for selected products</td>
</tr>
</tbody>
</table>

¹ If shelf-life allows
² List of critical commodities to be stored - could be expanded with other items
In the future, the reserves should cover the full population with a balanced diet for 2 months and 75% of the current population with a basic diet for 6 months.

<table>
<thead>
<tr>
<th>Reserve use</th>
<th>Component</th>
<th>Coverage</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer against shocks</td>
<td>Private sector storage</td>
<td>2-4 weeks</td>
<td>• Incentivize/Regulate the private sector to maintain 2-4 weeks of supply of perishable products(^1)</td>
</tr>
<tr>
<td></td>
<td>Strategic short-term reserves of perishables</td>
<td>2 months</td>
<td>• Post-blockade stock-out in 2017 showed the need for government-owned supply for 1-2 months</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• An 8 week upper-boundary for the reserve capacity are sufficient, given diversification &amp; contingency planning efforts, and assumption that complete isolation is very unlikely</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• When there is overlap with the private sector storage, the requirements for the public sector storage can be lowered</td>
</tr>
<tr>
<td>Longer term “insurance policy”</td>
<td>Strategic long-term reserve of non-perishables</td>
<td>6 months</td>
<td>• 6 months of non-perishable reserves act as an adequate insurance in most potential scenarios, given lower perceived possibility of sustained complete blockade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>75% of population</td>
<td>• Additionally, rotation cost and complexity become increasingly difficult for larger reserves</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Peer countries have similar reserve capacity</td>
</tr>
<tr>
<td></td>
<td>Long-term reserve of agricultural inputs</td>
<td>6 months</td>
<td>• 6 months of non-perishable reserves act as an adequate insurance in most potential scenarios, given lower perceived possibility of sustained complete blockade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Full capacity</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Regulation currently being decided upon
## Strategy pillar: Domestic markets

Bring transparency and efficiency in the food supply chain to ensure fair commercial practices for all value chain participants, reduced waste in the supply chain, and better food quality for end-consumers

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<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>D1. Farmer support program</strong>&lt;br&gt;Streamline the domestic go-to-market model for farmers to ensure transparency in the price setting process and assist farmers in improving productivity</td>
<td>• Create the policy framework to transform the domestic wholesale market process&lt;br&gt;• Setup the farmer support entity (infrastructure, processes) and pilot different commercial models</td>
<td><strong>KPI</strong>&lt;br&gt;1 Eligible farmers covered by program&lt;br&gt;2 % food waste reduction&lt;br&gt;3 % food waste processed&lt;br&gt;4 Share of products certified based on quality of output (vs. production process)&lt;br&gt;5 Food safety incidents per capita p.a.&lt;br&gt;<strong>2023 Target</strong>&lt;br&gt;▪ 90%&lt;br&gt;▪ 5 ppts&lt;sup&gt;1&lt;/sup&gt;&lt;br&gt;▪ 20%&lt;br&gt;▪ 100%&lt;br&gt;▪ 0</td>
</tr>
<tr>
<td><strong>D2. Food waste program</strong>&lt;br&gt;Establish integrated food waste program, including collection and treatment / alternative usage of organic waste</td>
<td>• Develop a detailed food waste management program based on diagnostics and benchmarking&lt;br&gt;• Review and amend regulatory framework to support launch of food waste program</td>
<td></td>
</tr>
<tr>
<td><strong>D3. Food standards governance</strong>&lt;br&gt;Optimize and simplify the governance of food standards in Qatar, to monitor food safety in the country and to supervise quality certification more effectively</td>
<td>• Decide and launch the new food standards governance structure&lt;br&gt;• Integrate and accelerate food quality check process at customs&lt;br&gt;• Review and adjust food safety regulations&lt;br&gt;• Establish clear food certification process</td>
<td></td>
</tr>
</tbody>
</table>

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1 Close half of the gap in food waste in the value chain in Qatar (~14%) versus Europe (~5%)
The farmer support program will be delivered through a farmer representative entity that is both a wholesaler/trader and a service provider for local farms.

**DOMESTIC MARKETS**

**Produce**
- Services
- Contractual agreement

**Farmer rep entity**
- Warehousing
- Trading
- Value-add services
- Traceability

**Retailer**
- Produce
- Contractual agreement

- Volume & grade
- Minimum price guarantee
- Farm improvement plan

**Primary services offered to farms by the entity**
- Centralized procurement of inputs
- Crop advisory/extension services
- Commercial support (marketing & trading)
- Farm credit
- Warehousing
- Produce traceability
This program is expected to enhance performance of the local crop farms in Qatar through three levers:

**Increase productivity of local farms**
- Adoption of best-fit farming technologies
- Technical training and extension services
- Access to high-quality crop inputs

**Offer an efficient go-to-market channel for local farmers**
- Removal of existing intermediaries & wholesale process
- Farmer representative trading entity
- At-scale access to value-add services

**Reform price regulation across the market**
- Improve the price setting process
- Introduce certification at product level

1. I.e., hydroponics-based greenhouses for salad vegetables and open field for onion, potatoes
2. E.g., in crop planning and on-farm interventions
3. Allows direct negotiation with B2B customers
4. Storage, transportation
5. Including packaging and labelling
### DOMESTIC MARKETS

**Integrated food waste program - Best practice initiatives should be implemented to minimize food waste at each stage of the value chain**

<table>
<thead>
<tr>
<th>Value chain stage</th>
<th>Issues</th>
<th>Strategic recommendations</th>
</tr>
</thead>
</table>
| **Customs**                | • Food clearance can take up to **12-24 hours**, increasing risk of damage  
                          | • Long procedure times because  
                          |   - Full inspection on-site (documentary compliance lead time is 6x higher than UAE)  
                          |   - Lack of infrastructure (e.g., labs)  
|                            |                                                                       | • Set legal maximum time for product clearance to less than six hours  
|                            |                                                                       | • Further develop and promote adoption of a registration system to ensure most products are approved before arrival  
| **Farmer**                 | • No secondary market for production considered unsuitable for direct consumption  
                          | • Farmers not trained on best practices to minimize production waste  
|                            |                                                                       | • Continue to facilitate development of processing companies facilities (e.g., food canning) to create a secondary market for production that is unsuitable for direct consumption  
|                            |                                                                       | • Develop extension service to educate farmers on storage best practices to minimize production wastage  
| **Intermediary players (Central Market, retailers)** | • Absence of adequate handling & storage infrastructure at Central Market  
|                            |                                                                       | • Promote development of best-in-class handling & storage facilities at new Central Market locations  
|                            |                                                                       | • Further promote development of private sector warehousing cold storage space (e.g., through affordable warehousing)  
| **End-consumers & HORECA** | • Absence of best practice compost processing  
                          | • No compost collection program in place  
|                            |                                                                       | • Establish a waste treatment facility to process compost waste using windrows composting technology  
|                            |                                                                       | • Make left over out-of-date products available in food banks for limited amount of time  
|                            |                                                                       | • Launch campaigns to encourage change in behavior  

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*Image source:* State of Qatar
Best practice initiatives should be implemented to minimize food waste at each stage of the value chain and reduce overall wastage by ~5 pp.

Actions to reduce wastage throughout the food value chain & their potential impact:

- Reduce maximum time for product clearance
- Increase adoption of pre-arrival registration
- Equip Central Markets with adequate handling & storage infrastructure
- Educate farmers on best practices
- Develop secondary market through processing
- Help develop private sector warehousing through more affordable rent
- Establish waste collection program and waste treatment facility
- Launch a food bank program with HORECA

DOMESTIC MARKETS

<table>
<thead>
<tr>
<th>Stage</th>
<th>Farmers</th>
<th>Central market</th>
<th>Wholesaler</th>
<th>Retailers</th>
<th>End consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current wastage</td>
<td>~2%</td>
<td>~9% -2pp</td>
<td>~9% -1pp</td>
<td>~3% -0.5pp</td>
<td>&gt;10% -1pp</td>
</tr>
<tr>
<td>Impact on wastage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated current food wastage
Estimated impact on food wastage, in percentage points
A governance mechanism should be established to address current food standards / certification and food safety issues

<table>
<thead>
<tr>
<th>Issue</th>
<th>Supporting factors</th>
<th>Mandate for the governance mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long clearance times</td>
<td>• Both MoPH &amp; MME need to clear vegetables and fruits due to dispersed expertise</td>
<td>• Integrate quality assessment processes and decision-making</td>
</tr>
</tbody>
</table>
| Strict interpretation of GSO\(^1\) standards | • Stricter interpretation of regulation than other countries, e.g.,  
  – Mandatory labelling in Arabic (vs. Arabic stickers accepted in UAE)  
  – Effective expiry date required (vs. ‘Best before’ guidance) | • Build expertise to execute the required checks  
  • Provide scientific basis for taking the (less conservative) GCC interpretation of the standards set by GSO |
| Lack of quality monitoring | • ‘Qatar Premium vegetables’ certifications granted based on a yearly assessment with no regular inspection checks  
  • Organic certification on-hold since the blockade | • Put in a place frequent inspection checks to ensure quality certification for local production and imports based on product output throughout the year |
| Insufficient hygiene standards at Central Market | • Trading area in current Central Market not equipped with appropriate display infrastructure or air conditioning  
  • New Fish Central Market not suitable for fish display and handling | • Approve new Central Market locations in terms of infrastructure and provide recommendations when needed  
  • Inspect Central Market locations on regular basis and sanction hygiene-related misconduct |

The mandate of the new governance mechanism should be facilitated through an official legislative framework (e.g. publication of decree detailing the roles and responsibilities)

\(^1\) Gulf Standard Organization  
2 To be closer to regional benchmarks and based on stakeholder’s interviews

SOURCE: Stakeholder interviews; export.gov
There are many public and/or private partners that could be involved in drafting and implementing the strategy.

**Domestic Food Markets Reform Taskforce**
- Liberalize prices and standardize food safety requirements
- Increase availability of affordable warehousing
- Upgrade infrastructure
- Increase competition across the food chain

**Department of Agriculture**
- Phase out inefficient agricultural practices
- Orchestrate phase-in of new governance system
- Coordinate infrastructure buildup
- Contract with private sector

**Strategic Delivery Unit**
- Design the food security research agenda
- Align stakeholders on food security priorities and hand over ownership
- Design and orchestrate educational programs

**Domestic markets**
- MME
- MOCI
- MOF
- MoPH
- QDB
- Karamaa
- PWRC
- Ashghal
- Qatar Chamber
- MOI
- Hamad Port

**Strategic reserves**
- MOCI
- MOF
- MOF
- Hamad Port
- Retailers/Distributors
- Taskforce on Standards & Strategies for International Agricultural Trade & Investment
- MOIC
- MOI
- Hamad Port
- Logistics Companies
- Hassad Foods
- MoFA
- Customs

**International trade**
- MME
- MOCI
- QU
- QF
- Other Universities
- MOEHE
- MOIC
- MOI
- MoFA
- MoTC

**R&D/ Human cap.**
- MME
- MOIC
- QU
- QF
- Other Universities
- MOEHE

**Committee**
- MME
- MOIC
- QU
- QF
- Other Universities
- MOEHE

**Source:** The National Food Security Plan, July 2013