

Strategic Analysis Paper

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Food and Water Security in Qatar: Part 1 – Food Production

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Key Points

- Qatar's agricultural production is constrained by scarce water resources, infertile soil, harsh climatic conditions and poor water management.
- The financial and environmental costs associated with implementing Qatar's National Food Security Program (QNFSPP) may outweigh the cost of importing food requirements, and place increasing pressure on already scarce water and land resources.
- Diversification of food supply is required to reduce Qatar's vulnerability to supply disruptions caused by geopolitical conflict and global food price spikes.
- The food processing industry could be an economically viable and potentially profitable element of the food security plan by value-adding imports of raw-materials through food production.

Summary

Qatar is located in one of the driest and water-stressed regions in the world. Low rainfall, high evaporation rates and a lack of arable land limit its ability to produce food, driving it to depend on imports to meet 90 per cent of its consumption needs. Abundant hydrocarbon reserves ensure that Qatar can maintain its comfortable level of food security through trade; supply risks remain, however, due to geopolitical tensions and global food price spikes. Though the Qatari government has shown a strong commitment towards ensuring food self-sufficiency through ambitious strategies to boost agricultural production and diversify its food supply sources, it is likely Qatar will continue to depend on imports significant portion of its food needs despite the successful implementation of these strategies.

Analysis

Food Security

Domestic Production and Consumption

The Qatari Government has embarked upon an ambitious quest to boost domestic food production in order to achieve self-sufficiency. Through the Qatar's National Food Security Programme (QNFSP), first initiated in 2008, the country seeks to supply 40 per cent of its food consumption domestically by 2030. The QNFSP 'Master Plan' prioritises formulated solutions to food security by investing in scientific and technological development in four key areas: renewable energy, desalination and water management, agricultural production and food processing and management. As part of this programme the government also aims to double the number of farms in production.

There are several factors to consider regarding the feasibility of this plan. Qatar's domestic agriculture is already severely constrained by scarce water resources, low water quality, infertile soils, harsh climatic conditions and poor water management. A survey by Qatari officials suggests that six per cent of land is arable but others estimate this figure could be as low as 1.21 per cent. The over-exploitation of limited groundwater also puts significant pressure on existing domestic agriculture. Irrigation accounts for 60 per cent of the total national water use. Low and unreliable rainfall has led to a dependence on groundwater in areas used for irrigation; overdrawing from aquifers has increased soil salinity which, in turn, has reduced agricultural productivity and caused significant land degradation.

In addition to these factors, according to a recent [study](#) by Alpfen Capital, Qatar is set to experience the highest rate of consumption growth in the GCC. The study suggests that Qatar will experience a Compound Annual Growth Rate (CAGR) of 5.5 per cent from 2014 to 2019. This is attributed to a rapidly-growing population, increasing affluence, expanding tourism and diversifying food preferences. An effort to meet this demand will likely place further strain on Qatar's limited natural resources.

The financial and environmental costs associated with implementing the plan are expected to outweigh the cost of importing food requirements. In 2008, Saudi Arabia discontinued its plan to become self-sufficient in wheat, conceding that it was too expensive and wasted domestic water resources. Qatar faces similar risks in its quest for increased food self-sufficiency. The agriculture sector contributes just 0.1 per cent of Qatar's GDP and its contribution to national employment fell from 3.0 per cent of the labour force to 1.4 per cent between 2005 and 2012. To increase domestic production the government will need to allocate significant resources in importing labour and investing in agricultural technology. Over \$US300 million has already been invested to support agricultural self-sufficiency; with expectations that the project will cost billions of dollars over the course of its implementation.

Food Imports and Supply Risk

Less than ten per cent of the food consumed in Qatar is produced within the country; the rest is imported, leaving an agricultural trade deficit of approximately \$1.5 billion. Qatar experiences the lowest self-sufficiency in cereals, importing 99.5 per cent of the cereal consumed in 2012. Other highly imported foods include dairy products with 74.6 per cent imported in 2012, vegetables (83.4%), fruits (86%), meats (93.6%), legumes (95%), and edible oil (100%).

Abundant gas revenues have supported Qatar's ability to import food and bridge the shortfall in domestic production. Despite this the country remains vulnerable to food insecurity should disruptions to international food shipments occur. Doha cannot control food availability in the event of political, sanitary, disease or economic-related shocks in food producing countries, or disruptions to its supply chain should trade routes or port facilities be disturbed. This was made evident following the global food price crisis of 2008 where major food producing countries placed bans on food exports; as a result Qatar faced skyrocketing grain prices.

Geopolitical unrest threatens the security of Qatar's food supply. Most of the country's food imports are shipped through the Strait of Hormuz or across the Saudi Arabian border, with a small portion delivered by air. Iran's past threats to close the Strait of Hormuz in response to [imposed sanctions](#) exposed the vulnerability of Qatar's food supply to external conflict. More recent tensions between Iran and Saudi Arabia over the Yemen conflict have led to the strait being used as a [strategic military asset](#). Any disruptions to food shipments due to conflict in the Strait would have a devastating impact on Qatar's food security. Qatar's food security situation could improve, however, if the recent [nuclear deal](#) between Iran and six countries including the United States, is ratified by all parties.

Qatar plans to reduce food imports by 60 per cent to improve its food self-sufficiency. The implementation of the QNFSP plan began in 2014 and is expected to be fully in place by 2024. It is likely therefore that Qatar will continue to rely heavily on imports for much of its food needs in the short- to medium-term. If the self-sufficiency target is reached, Qatar will still rely on food imports for 60 per cent of its food requirements. This remains the major portion of its food demand, and the Qatari Government will need to diversify supply routes and food suppliers to reduce the potential impacts of supply disruptions.

Strategies for Food Security

Economic Diversification

Despite the significant shortcomings of the domestic agricultural sector, considerable economic prosperity enables trade-based food security, ensuring sufficient access to affordable food products for the population. Oil and gas are the backbone of Qatar's economy, accounting for over 50 per cent of its GDP, 90 per cent of government revenue and 85 per cent of export revenue. It is essential however, that Qatar diversifies its economy in order to ensure it remains able to afford food imports without depending on its hydrocarbon industry.

Qatar has invested in the infrastructure and services sector, developing airline and logistics services. It also has invested heavily on infrastructure to assist in efforts to promote itself as a high-end tourist destination; this has allowed the country to host international conferences, conventions and sporting events. If Qatar is to expand its non-hydrocarbon industries, it will need to focus on developing its education and research industries, and increase the financial services available for private sector development.

Agricultural Enhancement

Qatar's Ministry of Municipal Affairs and Agriculture is encouraging investment in the agriculture and food production sectors to increase the supply of domestically produced food. The Qatari government will need to invest in a variety of agricultural technologies and techniques (e.g. open fields, greenhouses and hydroponics), to ensure the optimal usage of its scarce resources. Plans to ensure all farms use desalinated water for food production have been outlined and investment in the construction of solar-powered desalination plants that produce an adequate supply of water needed for farming. With desalination processes being highly energy-intensive, it is hoped that solar-powered plants replace the more costly and unsustainable hydrocarbon powered plants. Desalination is an expensive process and according to this plan farmers will be provided desalinated water for free. It may therefore be more cost effective to import food requirements and reserve desalinated water for domestic consumption.

Under the QNFSP, Qatar aims to double the number of farms in the country from 1,400 to 3,000. While this expansion would be a boon for Qatar's domestic production targets, considerable scepticism exists regarding the feasibility of the plan, both logistically and economically. Results from a [trade-off analysis](#) (based on available water, energy, technology, crop yields and trade portfolio figures in 2010), found that a 25 per cent increase in the production of eight food products in Qatar – green onions, tomatoes, eggplant, lettuce, carrots, watermelon, cucumber and potatoes - would require 206 per cent more water, 382 per cent more land, over 200 per cent more energy and a 186 per cent increase in financial resources. To rise to this challenge Qatar will need to make significant investments in increasing water, energy, land and financial resources. It may be both environmentally and economically unsustainable to expand agricultural production to this extent.

International Food-Trading Hub

The Qatari government has proposed plans to construct a new port and turn the country into a regional and international trading hub for food commodities. This would see a part of the imported food re-exported to surrounding markets. This will enhance food security for both Qatar and other countries in the region by ensuring there is multiple supply sources for imports and reducing vulnerability to supply disruptions.

Inadequate logistical facilities, moreover, limit Qatar's ambition to become an international trade hub for food commodities. The country currently struggles to provide sufficient storage and transport services for its food stocks; these facilities must be improved in order to receive and store increased food commodity imports.

Competition with the United Arab Emirates needs to be considered when assessing the viability of Qatar becoming an international food commodity hub. The 'Trading Across Borders Rank' places Qatar 61st in the world compared with the UAE, which is placed eighth. The country is the largest food commodity hub in the region and imports/exports face fewer regulations, paperwork and fees/taxes than in Qatar.

Strategies focused on reducing the transaction costs associated with trade will be required in order to diversify regional food supplies for Qatar and place it in a more competitive position to attract increased trade from existing and new suppliers. Qatar took a significant step forward by becoming the first hub in the Middle East to clear transactions in the Chinese Renminbi (RMB). The agreement is expected to expand trade investment between Beijing and Doha and will, in the long-term, place Qatar in a better position to attract food commodity exports from China, the largest exporter to the Middle East.

Strategic International Investments

To further secure access to food Qatar has bought land in Australia and Sudan through the agricultural arm of its sovereign wealth fund, Hassad Food. It has also spent millions of dollars on agricultural projects in Kenya, Cambodia, Pakistan, Vietnam and the Philippines. Investing in land in these developing countries has resulted in international criticism; weak institutions and poor law enforcement in these countries can result in investments which benefit few and lead to the unsustainable and unethical use of local resources. In 2009 a deal with the Kenyan Government to lease 40,000 hectares of land to produce food was abandoned after it received strong criticism from media, civil society and local communities. This has led to a new strategy to invest in countries that have stronger institutions, with investment currently focused on North and South America, Europe and India.

Investment in foreign agricultural land has emerged as a common strategy to increase domestic food security in the Middle East. While it remains a necessary step in securing food products, it does not guarantee food supply in times of crisis. In the event of supply shortages, disputes and other global market disruptions, food producing countries may refuse to export their produce irrelevant of agreements. The threat of trade-based food insecurity is not entirely removed through investments in foreign agricultural land.

Strategic Food Reserves and Agro-industry

Qatar currently maintains strategic food reserves for wheat, rice, sugar, oil, milk and livestock feed. Plans are underway to increase the volume of reserves in order to reduce the country's vulnerability to price volatility. Increasing reserve capacity is a costly but necessary exercise for Middle Eastern countries in order to cushion against global price shocks that can cause severe inflation in the domestic market.

Increasing storage facilities is also necessary to ensure a constant supply of raw materials is available for Qatar's food-processing industry. The development of this industry will centre on the development of an agro-industrial park, expected to not only meet domestic food needs but produce a surplus that can be exported to neighbouring GCC and regional countries. By value-adding imports of raw-materials through food production, the food

processing industry could be an economically viable and potentially profitable element of the food security plan.

Conclusion

This part of the paper has looked at Qatar's strategy to increase domestic food production and the role of global markets to ensure ongoing food security. Part two will investigate the state of Qatar's water resources and conclude with an outlook on the country's food and water security to 2025.

Any opinions or views expressed in this paper are those of the individual author, unless stated to be those of Future Directions International.

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