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The value of food processing clusters

From farm to future

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EXECUTIVE SUMMARY

Food demand in the Gulf Cooperation Council (GCC)[1] countries is increasing, due to such factors as growing populations and rising disposable incomes. However, the region still imports most of its food, making it less self-sufficient and resilient. One proven way to strengthen the GCC's food industry is for governments to develop food processing clusters. Sometimes known as food parks, these are centralized industrial zones with multiple companies that can process raw ingredients into the value-added products that the region's consumers increasingly demand. Clustering already offers clear advantages in other industries, including vertical integration, reduced costs, greater synergies, and streamlined launch processes for new market entrants. That same approach can work in the GCC region's food industry, resulting in strengthening food security; reducing dependence on imports; and making the food industry more value-creating, self-sufficient, and resilient.

A HUNGER FOR CHANGE

The global food market is growing steadily and is expected to nearly double in size by 2040.[2] Trends in the GCC processed food market mirror global trends, with a projected compound annual growth rate of approximately 6.2 percent from 2025 to 2040.[3] GCC region growth is driven by a rapidly expanding population (including a large expatriate community), rising disposable incomes, an increasingly prosperous middle class, and a greater demand for convenient, high-quality food.

Currently, GCC countries face challenges in meeting this demand. The GCC imports roughly 85 percent of all the food consumed in the region, including nearly all rice, 93 percent of cereals, 62 percent of meat, and 56 percent of vegetables.[4] As demand grows for more convenient, packaged food in supermarkets, the reliance on imports means that much of the value from food processing will go elsewhere—a missed opportunity for GCC economies.

Many existing facilities operate at a relatively small scale and could benefit from tech modernization and stronger ties to distribution networks. The insufficient scale of these facilities means that the region's food manufacturers face challenges in achieving the same cost competitiveness as international firms.

Additional challenges prevent GCC countries from processing more food within their borders. These challenges include:

- **Limited innovation infrastructure.** The region has opportunities to expand its research and development (R&D) hubs, increase R&D investment levels (which are currently below the average level),[5] and strengthen collaboration between sector players to drive innovation and adopt advanced technologies.

- **Insufficient focus on value-added segments.** GCC countries have historically concentrated on conventional production (e.g., fresh, chilled, or frozen food products that require minimal processing).[6] As convenience becomes increasingly important to consumers, it creates an opportunity to shift focus toward higher-value-added secondary processed products, such as prepared meals.

- **Environmental factors.** The food processing industry is water-intensive, and the GCC is one of the most water-scarce regions in the world.[7] Water-efficient processes, wastewater treatment, and recycling systems remain underdeveloped. In addition, GCC countries must address the issue of food loss and waste, which remains a significant concern in the region (more than 30 percent of food supplies suitable for human consumption is being lost or wasted in the region).[8] Despite growing awareness of this problem, systems to manage food waste have not reached the advanced stage.

- **Gaps in regulation and enforcement capabilities.** The administrative processes required to open and license a new business in the region can be unwieldy. Food processing regulations vary—particularly in terms of regulatory frameworks for emerging technologies such as novel processed foods and preservation methods. Enforcement mechanisms for food safety, quality, and environmental standards are applied at different levels across the region.

A PROMISING SOLUTION: FOOD PROCESSING CLUSTERS

Addressing the food-related challenges in the GCC requires more than isolated initiatives from companies. GCC governments should adopt a holistic approach in order to develop the food processing sector, meet the growing demand for diverse food products, and make the region's food sector more resilient. Specifically, they should develop food processing clusters.

Food processing clusters, also known as food parks, are strategically designed industrial zones that combine different types of downstream food-processing companies in a centralized location. Governments often convene and oversee such clusters. Companies in the cluster share streamlined administrative and regulatory procedures, along with connections to R&D and professional services. Food processing clusters are often integrated into larger industrial zones, allowing easy access to shared infrastructure such as utilities, nearby logistics networks, ports, and other industrial services. Additionally, these parks provide essential support facilities, including waste management systems, quality control labs, and administrative services.

Clusters combine all aspects of food processing in a single location. That allows them to support vertical integration, a fast and agile supply chain, and close supplier–manufacturer relationships. Underlying these features are supportive government policies and incentives for investors and operators. Food processing clusters give new companies an easier path to launch. They encourage greater economic activity. These clusters also help companies build stronger capabilities than they could alone.

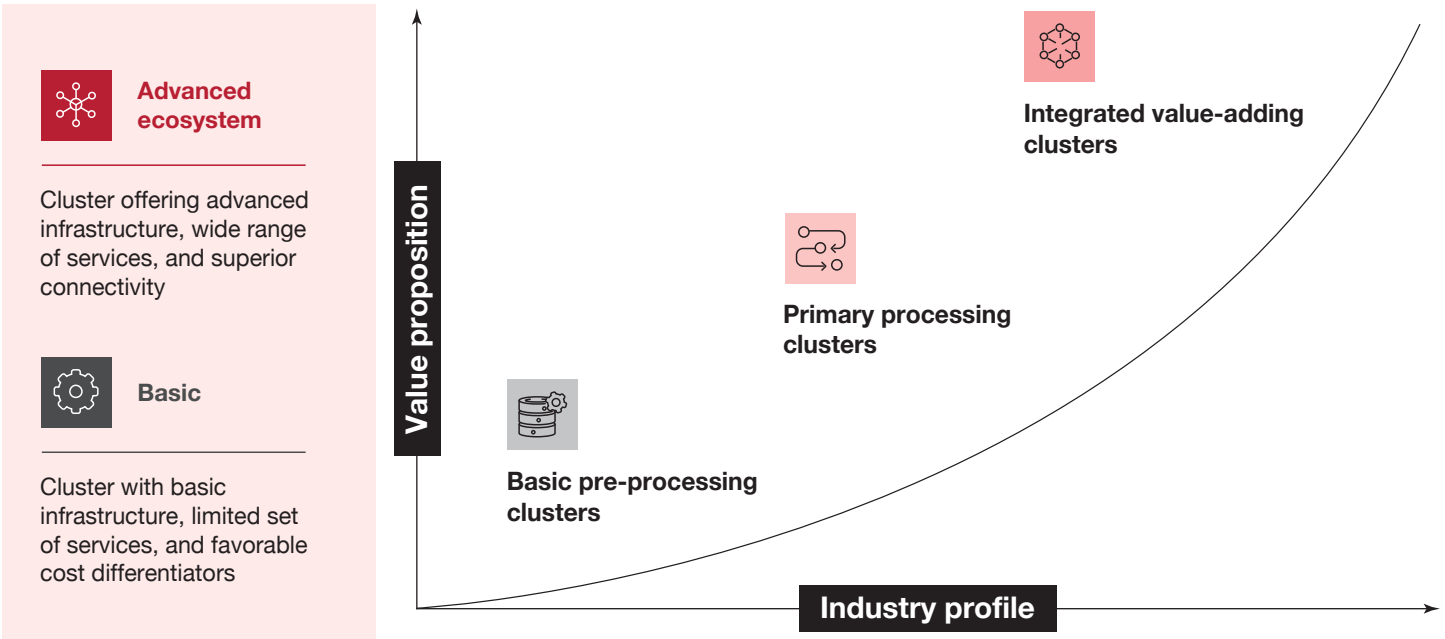
Other industries have long capitalized on the benefits of clusters. In manufacturing, for example, co-locating factories, suppliers, and support services in one area creates advantages that accrue to all parties.[9] Market participants can innovate more effectively and collaborate more easily. They can take advantage of greater efficiency and reduced costs along the entire value chain.

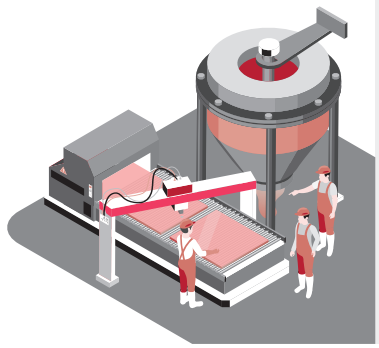
> Food processing clusters, also known as food parks, are strategically designed industrial zones that combine different types of downstream food-processing companies in a centralized location.

THREE TYPES OF FOOD PROCESSING CLUSTERS

Food processing clusters typically fall into one of three main archetypes, from basic to highly integrated, supporting different levels of sophistication, infrastructure, and services (*see Exhibit 1*).

EXHIBIT 1
Types of food processing clusters





Pre-processing focus

Basic pre-processing activities focused on specific segments and catering to small tenants. Typically located close to supply centers

Integrated processing focus

Integrated processing value chains, with diverse segment focus catering to SMEs and large tenants. Typically close to and well connected to demand

Source: Strategy&

Basic pre-processing clusters

The first cluster type handles the initial stages of food processing. These stages include cleaning, sorting, and preliminary butchering. Clusters of this type serve smaller market segments with specific, localized needs. They are often strategically located near supply centers, with connections to these centers via road or rail. Facilities include foundational elements such as ready-built factories and food quality control labs.

Primary processing clusters

The second cluster type handles the core processing of raw products into primary forms, like meat cuts or fillets. Their offerings include essential and value-added food infrastructure (including shared warehouses, packaging facilities, and centralized waste management), along with professional and administrative services. Clusters at this level are located with access to supply and demand hubs through ports, roads, and rail. They feature competitive costs for land and labor, along with tax and trade incentives.

For example, Mercabarna, a food processing cluster near Barcelona, provides tenants with access to centralized facilities for core production processes. Mercabarna offers sorting facilities, advanced slaughterhouses, livestock pens, loading and unloading bays, packaging and distribution facilities, cold storage, centralized waste collection and management, and a dedicated wastewater treatment plant for meat industries (*see "The economic impact of a food processing hub in Spain"*).

The economic impact of a food processing hub in Spain

Mercabarna is a publicly owned, state-of-the-art food processing and distribution hub near Barcelona.[10] Initially developed more than 50 years ago through a concerted government effort, the facility currently produces more than 2.3 million tons of food annually. About 600 companies operate out of Mercabarna, in categories including fruits, vegetables, fish, meat, and floral. About one-third of Mercabarna's fruit and vegetable production is exported. Mercabarna also serves 10 million consumers in Spain—about one-fifth of the country's population. Additionally, Mercabarna has a strong commitment to sustainability, with advanced waste management facilities that help recycle 77 percent of the 32,000 tons of waste generated.

Integrated value-adding clusters

The third cluster type handles primary and secondary processing. This type of cluster is an advanced food park that offers comprehensive facilities. Integrated value-adding clusters provide advanced infrastructure, a spectrum of professional services, and R&D capabilities for integrated value chain activities. These facilities and services allow them to meet the needs of a wide range of businesses and segments, from small and medium-sized enterprises (SMEs) to large tenants.

> The right approach depends on the baseline of infrastructure already in place, along with the specific goals for regional development.

HOW GCC GOVERNMENTS CAN BUILD FOOD PROCESSING CLUSTERS

GCC governments can select the most suitable type of food processing cluster by considering such criteria as sectoral strategy aspirations, market needs, and trends, along with proximity to supply sources (such as raw materials) and demand centers. Governments can then decide whether to build on greenfield locations or to enhance existing food-processing facilities. The right approach depends on the baseline of infrastructure already in place, along with the specific goals for regional development.

Essential no-regret offerings

GCC governments should prioritize essential, no-regret offerings that are applicable to most food manufacturers. That applies whether they are creating a new food processing cluster or upgrading an existing one (*see Exhibit 2, page 10*). Baseline elements include:

- **Ready-built factories/tenants' factories**

  Preconstructed, versatile factory or warehouse units can accommodate various food processing needs. They enable tenants to jump-start operations without the capital investment required for construction.

- **Cold storage/temperature-controlled solutions**

  Facilities that provide controlled environments for storing and handling fresh, chilled, and frozen products are critical. Some food processing clusters include innovative, mobile, solar-powered cold storage services that tenants use on a pay-as-you-go basis.[11] Integrating cold storage with third-party logistics providers further streamlines the supply chain.

- **Sustainable food packaging**

  Virtually all food companies require facilities that provide environmentally friendly packaging and canning solutions.

- **Food quality control labs**

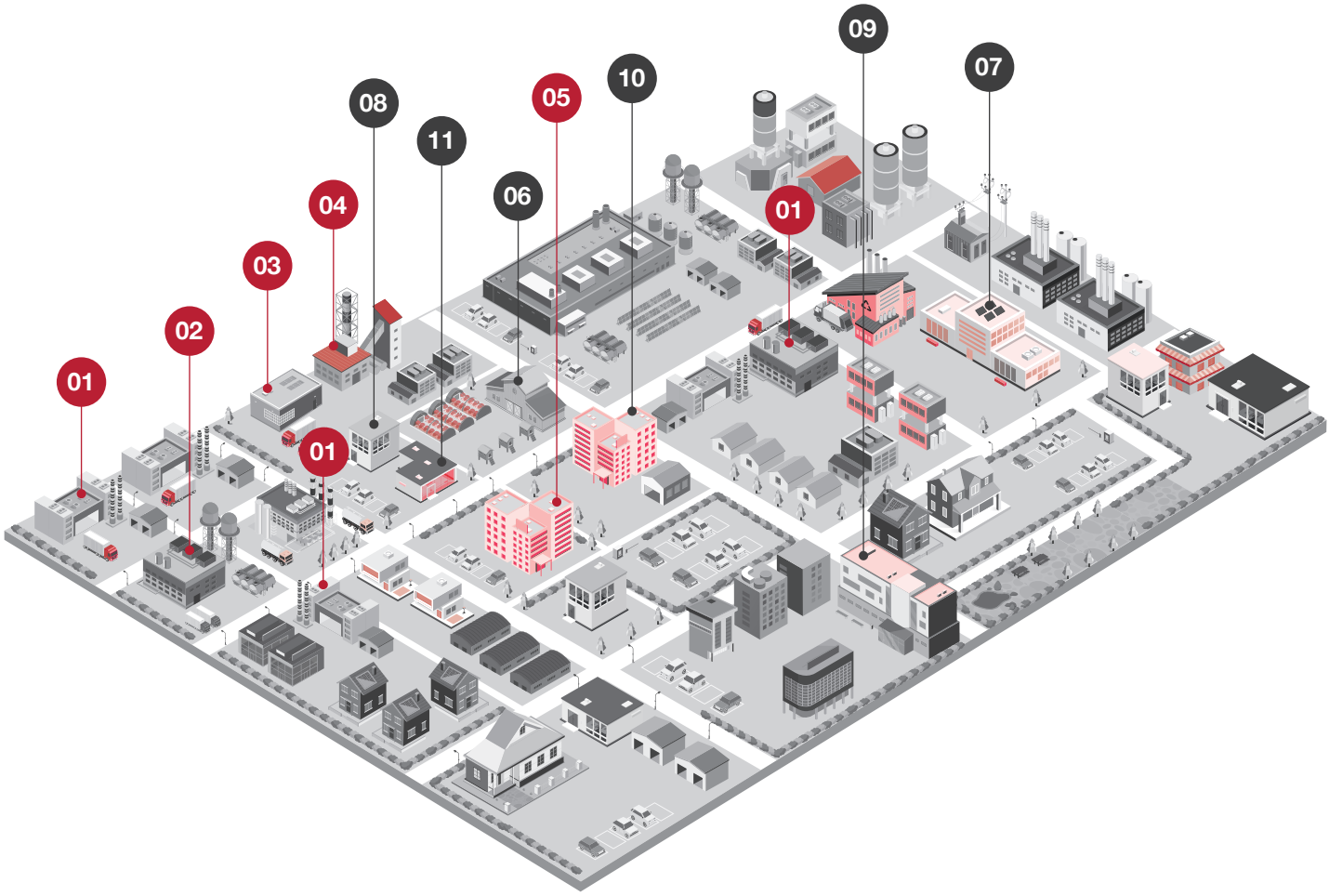
  The food processing should provide on-site labs to support food safety and regulatory compliance. These labs ensure that products meet health standards and facilitate food testing throughout the production cycle. Labs should go beyond simple "box ticking" approaches. They can integrate comprehensive evaluations that could lead to more sustainable and safe manufacturing practices.[12]

- **One-stop administrative support**

  A one-stop shop is a centralized hub within a food processing cluster that streamlines regulatory and administrative processes. It consolidates all necessary services and procedures under one roof. That includes licensing, certifications, permits, visas, and approvals.

EXHIBIT 2

Elements of a food processing cluster



● Essential no-regret offerings ● Advanced innovative offerings

- 01 Ready-built factories/tenants' factories
- 02 Cold storage/temperature-controlled solutions
- 03 Sustainable food packaging
- 04 Food quality control labs
- 05 One-stop administrative support
- 06 Pilot farms, kitchens, and "sandbox" processing areas
- 07 Modern waste management
- 08 Research and development facilities
- 09 Training and skills development centers
- 10 Digital marketplace for cluster tenants
- 11 Certification and traceability infrastructure

Source: Strategy&

Advanced innovative offerings

Governments can add other types of facilities to the food processing cluster, depending on their level of ambition:

- **Pilot farms, kitchens, and "sandbox" processing areas**

  Small-scale testing environments can allow SMEs to experiment with new techniques, recipes, and technologies before full-scale production.[13] That reduces risks and promotes innovation.

- **Modern waste management**

  Waste management offerings such as rendering facilities or anaerobic digestion plants support sustainability. They convert waste into valuable by-products such as animal feed or biogas. That minimizes landfill waste and improves environmental performance. Additionally, centralized wastewater pretreatment facilities can significantly reduce the operational burden on tenants.

- **Research and development facilities**

  R&D centers enable collaboration among industry, academia, and research institutions. That can lead to innovation in areas including food processing, product development, and technology.

- **Training and skills development centers**

  Training facilities and skills improvement programs strengthen workforce skills in food processing, quality control, and safety standards. They ensure that nationals and expatriates in the workforce possess the necessary capabilities to keep up with global developments.

- **Digital marketplace for cluster tenants**

  A digital marketplace assembles producers, wholesalers, retailers, and consumers.[14] The marketplace uses the cluster to create a centralized platform for direct product sales.

- **Certification and traceability infrastructure**

  Facilities that support labeling and certification requirements help producers and other stakeholders track and verify product data along the supply chain. They ensure accurate labeling for certifications like *organic, halal,* and *containing non-genetically modified organisms*.[15] Leading food processing clusters could use blockchain technologies for enhanced transparency.[16]

PRIORITIES FOR GOVERNMENTS

GCC governments must design and develop food processing clusters by changing their role in food systems. Currently, governments primarily oversee and regulate; moving forward, they may add to that by becoming convenors of food processing clusters and enablers of their success. That demands the following priorities:

Develop strategy

Develop, update, and regularly refine national food processing strategies and specific food zone plans to ensure they align with changing market trends and demands.

Collaborate with the private sector

Work with companies to conceptualize, design, and co-invest in essential infrastructure, including shared facilities and other value proposition offerings.

Set regulatory frameworks and incentives

Offer financial and nonfinancial incentives to attract investment. Incentives could include relaxed profit repatriation policies, reduced tariffs, subsidized land and utility costs, facilitation of low-interest loans, and flexible localization targets.

Facilitate market access and trade

Work to improve market access for food products. That means streamlining customs procedures, reducing trade barriers, and offering accelerated export programs so producers can reach international markets and increase the competitiveness of GCC food products globally.

Foster innovation

Collaborate with domestic and global R&D centers and academia to promote innovation and tech advancements in the food sector. Establish incubators and accelerators dedicated to food-tech and agri-tech startups.

Develop human capital

Partner with universities and providers of technical and vocational training to create tailored education programs. These offerings should meet the specific needs of the food processing sector through courses for skills improvement and skills acquisition.

Prioritize sustainability

Incorporate sustainability measures into food processing cluster development. These measures include water-efficient technologies, waste reduction practices, and renewable energy sources. These measures should be consistent with global sustainability goals. They should enhance the appeal of food processing clusters to environmentally conscious investors.

Engage stakeholders

Create platforms for continuous dialogue to address the needs and challenges of the food processing sector.

CONCLUSION

The development of food processing clusters within the GCC would deliver significant and immediate benefits. Such clusters would bolster regional food security, improve regional competitiveness, attract investment, encourage innovation, and strengthen human capital. Simultaneously, they would promote sustainable development and diversify GCC economies. By seizing this opportunity, GCC governments can build the food system of the future.

ENDNOTES

1. The GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

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