Jordan's Contribution to the CFS Policy Convergence Process on Building Resilient Food Systems

(For official submission on behalf of the Hashemite Kingdom of Jordan)

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1. Key Challenges That Should Be Addressed in Jordan's Food System

Jordan's food system faces a set of interlinked structural challenges that undermine its resilience and limit its ability to withstand climatic, economic, and geopolitical shocks. The most critical challenge is **extreme water scarcity**. Jordan is among the most water-poor countries globally, with rapidly declining groundwater levels, limited renewable water resources, and increasing competition between domestic, agricultural, and industrial uses. Farmers in the Jordan Valley and highland areas face unpredictable rainfall, rising evapotranspiration, and growing energy costs for water pumping, which collectively reduce productivity and increase vulnerability. As such, **water efficiency and improved water governance** must be central to any policy recommendations aimed at strengthening resilience.

Climate change exacerbates these challenges. Prolonged heatwaves, erratic rainfall, shortened growing seasons, and more frequent droughts have significantly increased production risks and reduced yields. Limited access to climate-risk insurance, climate-smart technologies, and adaptive extension services further undermine the resilience of smallholders.

Jordan is also heavily dependent on **food imports**, sourcing more than 85% of its food needs from global markets, particularly staples such as wheat, vegetable oils, and sugar. Recent global shocks—including the COVID-19 pandemic and the conflict in Ukraine—exposed the fragility of this dependency, underscoring the urgent need to diversify import sources, strengthen local production capacities, and improve national storage and strategic reserves.

High production costs represent another major pressure point. Rising prices of fertilizers, fuel, labor, and feed reduce farm profitability, particularly for small and medium-scale farmers. Land fragmentation, limited economies of scale, and insufficient access to modern technologies and advisory services further constrain agricultural productivity.

Demographic pressures also play a significant role. Jordan hosts one of the world's highest ratios of refugees to the host population. Rapid population growth and increased demand

for basic services strain natural resources and exacerbate food insecurity, especially among vulnerable households facing high food prices and economic hardship.

Institutional challenges persist as well. Fragmented governance structures, limited data systems, and insufficient coordination between public institutions, the private sector, and civil society hinder effective decision-making and risk anticipation. The absence of a fully integrated national food systems information platform limits evidence-based policymaking.

Addressing these priority issues requires a **holistic and coordinated approach** that strengthens water efficiency, enhances climate adaptation, reduces import dependency, improves the viability of smallholders, protects vulnerable groups through social protection, and reinforces governance and institutional mechanisms.

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2. Complementary Elements to Strengthen the Policy Recommendations

Several complementary elements should be integrated to ensure that forthcoming CFS policy recommendations align with Jordan's national priorities and reinforce the resilience of its food system.

First, improved **water governance and efficiency** is essential. Investments in modern irrigation systems, water-saving technologies, and expanded use of treated wastewater will play a pivotal role. Clear water allocation frameworks and strengthened Water User Associations can enhance local-level water management. Supporting farmers in adopting drip irrigation, soil-moisture monitoring technologies, and conservation agriculture is equally important.

Second, Jordan would benefit from accelerating **agricultural innovation and climate-smart technologies**, including drought-resistant crop varieties, protected agriculture, hydroponics, and vertical farming. Strengthening research–policy–practice linkages through partnerships with universities, private-sector actors, and farmer cooperatives can drive scalable innovation. Digital agriculture—such as mobile advisory services, satellite-based monitoring, and e-market platforms—can improve decision-making and resource use efficiency.

Third, integrating **social protection mechanisms** into food system resilience is essential. Targeted cash transfers, school feeding programs that procure from local farmers, and risk-sharing tools such as crop insurance can help buffer vulnerable households and producers from climatic and economic shocks.

Fourth, **strengthening agri-food value chains** is a key complementary area. Investments in cold storage, transport, food processing, and post-harvest handling can reduce losses and increase value addition. Supporting small and medium-scale food enterprises, producer organizations, and contract farming arrangements can enhance market access and income stability.

Fifth, improving **governance and data systems** is crucial. Establishing an integrated national food systems information platform—covering production, consumption, prices, climatic risks, and food safety—would enable more timely and evidence-based policy decisions. A coordinated mechanism that brings together relevant ministries, national institutions, the private sector, civil society, and academia is necessary to support this effort.

Finally, forthcoming recommendations should explicitly promote **gender equality and youth engagement**. Women play pivotal roles in production, processing, and marketing but often face barriers to resources, finance, and training. Youth are key drivers of innovation and entrepreneurship in the food and agriculture sector. Tailored capacity-building, finance, and market-access programs can unlock their potential and strengthen community-level resilience.

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3. Practical Case Study: Climate-Smart Agriculture in the Jordan Valley

The **Climate-Smart Agriculture (CSA) initiative** in the Jordan Valley provides a tangible example of how integrated approaches can strengthen resilience and improve productivity in water-scarce environments.

The initiative promotes advanced irrigation technologies—particularly drip irrigation combined with soil-moisture sensors—which allow farmers to irrigate according to precise crop needs. Pilot farms have achieved **30–40% reductions in water use**, alongside improved yields and crop quality. These technologies directly address Jordan's structural water scarcity and align with resilience-focused policy recommendations.

The project has also expanded the adoption of **protected agriculture**, including greenhouses and net-houses, which shield crops from extreme temperatures, pests, and unpredictable weather. This has stabilized yields and enabled year-round production. Furthermore, the introduction of **solar-powered irrigation systems** has reduced energy costs, strengthened farm profitability, and lowered greenhouse gas emissions.

A core component of the initiative is **community capacity building**. Farmers receive hands-on training in crop management, water efficiency, and modern production

techniques. Demonstration farms serve as practical learning hubs, accelerating the adoption of improved practices.

The initiative also promotes **women's economic participation**, providing training in food processing, value addition, and small agribusiness management. Women's cooperatives supported by the project now produce dried vegetables, pickles, and other products, enhancing household food security and diversifying income streams.

To reinforce resilience across the value chain, the project supports **short and efficient market linkages**, connecting farmers directly with local retailers and consumers. Digital platforms and coordinated marketing groups help reduce post-harvest losses and improve price stability.

Another innovative component is the use of **early warning systems** for weather, pests, and irrigation scheduling. By providing real-time data through mobile alerts, farmers can make informed decisions, avoid losses, and better plan their production cycles.

Overall, the CSA initiative demonstrates how integrated policies—combining technological innovation, resource efficiency, capacity development, and strengthened value chains—can significantly enhance the resilience of food systems. It offers a scalable model for expanding climate-smart agriculture across Jordan and serves as a practical illustration of how forthcoming CFS recommendations can be effectively implemented.