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# KYRGYZ REPUBLIC: DEVELOPING AGRI-FOOD VALUE CHAINS



Agriculture Global Practice  
The World Bank Group

# **KYRGYZ REPUBLIC: DEVELOPING AGRI-FOOD VALUE CHAINS**

Policy Note

**Agriculture Global Practice**

**The World Bank Group**

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## Abbreviations

CAGR	compound annual growth rate
CEE	Central and Eastern Europe
CGPs	Competitive (Matching) Grant Programs
CIS	Commonwealth of Independent States
EAEU	Eurasian Economic Union
EBA	Enabling the Business of Agriculture
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FSU countries	Former Soviet Union countries
GAO	gross agricultural output
ha	hectares
ICT	information and communication technology
PO	producer organization
SPS	Sanitary and Phytosanitary
TFP	total factor productivity
UNIDO	United Nations Industrial Development Organization
WTO	World Trade Organization

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## Introduction

This policy note contends that the prevalence of small farmers and small-scale agri-food processors creates unique challenges for agri-food value-chain development. That is, the Kyrgyz farm structure itself, with its dominance of small farmers, is one of the main constraints for the effective functioning of modern value chains, preventing them from delivering high incomes and improved livelihoods for smallholders. But this structure also provides one of the main opportunities for developing the value chain. Small-scale agri-food processors are rarely successful in establishing sustainable partnerships with small farmers unless there are strong market signals that facilitate these partnerships (Hakobyan 2015). Such strong market signals for Kyrgyz agri-food producers/processors are found in niche and premium markets of products that require specialized and labor-intensive agricultural production. Therefore, when market failures are addressed by public policy interventions, small farmers and small-scale agri-food processors have improved access to markets, more opportunities to capture value, and more opportunities to improve their livelihoods.

Market failures—such as inefficient functioning of input markets; lack of service provision (e.g., agricultural advice, transport, marketing services) and high transaction costs (associated with access to essential inputs and services such as water, electricity, logistics, etc.); information asymmetries (associated with a lack of technology and knowledge of modern practices, price and quality information, etc.)—lead to weak linkages between small farms

and small enterprises. As a result, the downstream agri-processing sector fails to deliver the types of benefits for the agriculture sector that normally lead to productivity, competitiveness, and job creation. These benefits are desired from the policy makers' point of view because they improve smallholders' incomes and livelihood opportunities. Thus, in cases when small farmers and small agri-food processors dominate the sector and represent most of the potential supply base, public policies need to be tailored to support effective participation of these small-scale producers and processors in the supply chains.

In this context, investments in agricultural research and extension, rural infrastructure, and large irrigation networks, which globally show long-term returns and development outcomes, would need to be complemented with market pull and push mechanisms that help farmers and small-scale processors link to markets. Experience from past and current projects in the Kyrgyz Republic demonstrates that a lot of donor and domestic public support has been rightly directed toward rural infrastructure development, including roads, water and irrigation networks, connectivity, and so on. Considerable support has been also given to developing agricultural research and advisory services that provide knowledge transfer to farmers, although with variable reach and effectiveness (Swinnen, Van Herck, and Sneyers 2011). The absorption capacity of the benefits of these investments has been low for two reasons. First, the investments have been predominantly donor-financed and their benefits have not been fully captured. Second, these investments have not yet considered market pull and push mechanisms that could have augmented their results.<sup>1</sup>

<sup>1</sup> The World Bank-supported Agribusiness and Marketing Project applied market push and pull mechanisms to support selected agri-enterprises for market access and competitiveness (see Pant et al. 2018). Lessons learned from this project could be considered in designing any new support programs.



This policy note advocates for supporting market push and pull mechanisms that would boost the performance of the agri-processing sector, which in turn can pull the farming sector by linking farmers with markets and expanding markets for agricultural products. The note provides examples of policies and strategies that could help link farmers to markets, expand markets, and create an enabling environment for market-based drivers of agriculture sector development. However, these recommendations are not provided in isolation. The note continues to recognize the need for infrastructure development—especially productive service at the rural community level to support commercial agriculture development—and investment in agricultural research and extension, since the benefits of such investments have been widely documented around the world, including established linkages with poverty reduction and job and income growth. The policies we propose could help augment the benefits of such investments.

This note is produced at a time when the new government of the Kyrgyz Republic has declared its policy priorities for agriculture sector development. In this context, the note delves into international experience for addressing these policy priorities. A considerable amount of analytical material is already available on agriculture sector performance and its challenges; therefore we limit the discussion to only those issues that are the most relevant in addressing the above challenges.

Realizing the potential of high-value agri-food exports is the cornerstone of the new government's policy objectives for agriculture development. Two policy objectives stand out: increasing exports and expanding agricultural markets, and boosting value addition in the agri-food sector. The new government has declared that its priorities for agriculture sector development are going to focus

on promoting high-value agri-food production and organic agriculture, improving the quality and safety of agri-food, and orienting assistance to producers of those groups of agricultural products (selected fruits and vegetables, legumes, dried fruits, etc.) that have the potential to generate high value-added in export markets.

At the same time, the government's program is not specific about what policy tools and public investment options should be employed to promote this growth. The government's program identifies the dominance of small-scale production (both upstream primary agricultural production and downstream food processing) as one of the key bottlenecks for market access, productivity growth in agriculture, and improving livelihoods in rural areas. It suggests that cooperatives and producer organizations could become potential elements for public policy and investment support. However, the government program lacks specific options for public support for promoting cooperation and productive partnerships, including through market mechanisms. This note offers several directions for policy and public investments to address the government priorities.

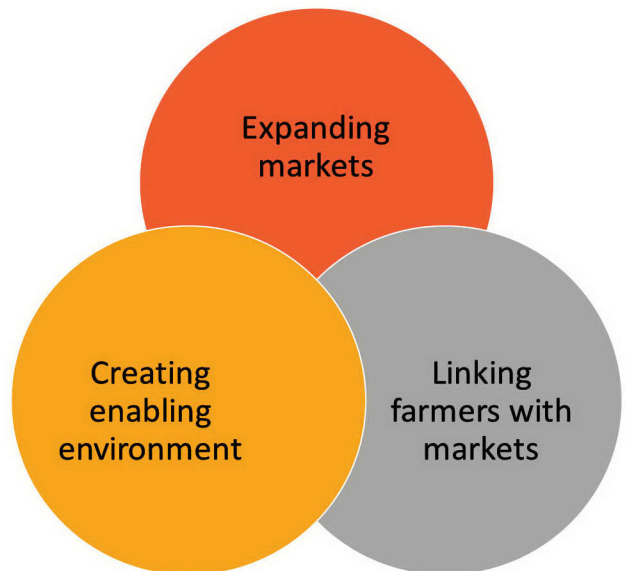
The policy note proposes achieving the declared government objectives on three tracks:

1. expanding markets—public sector assistance for promoting niche marketing and high-value products;
2. linking farmers to markets—public sector assistance for farmer collective action, improved funding for small-scale rural infrastructure (roads, irrigation, etc.), and focused assistance for food safety and better hygienic practices; and
3. creating an enabling environment—reducing the risk of public investment and promoting new investment opportunities in the agri-food sector

as well as expanding new financial products to small farmers (Figure 1).

This note is organized into four sections. The first section presents the analytics to demonstrate that Kyrgyz agri-food products have considerable market potential and can be competitively positioned in traditional (the Russian Federation, Kazakhstan) and non-traditional (China) markets. Access to such markets requires developing trade infrastructure (obviously) and boosting the quality and conformity of Kyrgyz agri-food. The second section contends that stagnating productivity is one of the bottlenecks to realizing the potential of high-value agriculture. Stagnating farm productivity indicates that public policies have not been fully successful in delivering economic benefits to farmers. The third section presents the agri-food processing sector—a sector dominated by small enterprises. It shows that this sector has the potential to play the part of the pull factor in the farming sector by improving market linkages. The fourth section provides three recommendations: linking farmers with markets, expanding markets, and creating an enabling environment.

**Figure 1. Proposed Policy Tracks to Support Government Priorities**

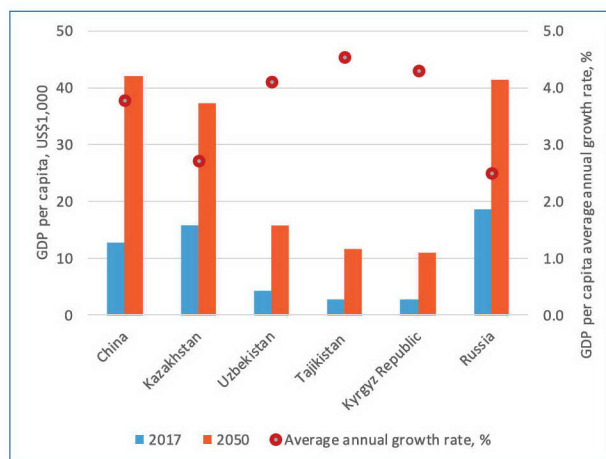




## Opportunities for the Kyrgyz Agri-Food Sector

Increased demand for high-value agricultural products and food driven by rising population incomes in Kazakhstan, China, and Russia creates opportunities for the Kyrgyz Republic to realize economic growth by expanding and diversifying its agri-food exports (Figure 2). High-value agricultural exports, such as selected fruits and vegetables, entail an important potential for raising rural incomes of smallholder farmers in the Kyrgyz Republic and maintaining the competitiveness of the sector because of the labor-intensive production systems, where labor costs are relatively lower.

**Figure 2. Projected Income Growth in Selected Countries**



Source: World Bank, forthcoming.

Fresh fruits and vegetables are the most common Kyrgyz agricultural exports. They comprise around 15 and 41 percent, respectively, of US\$260 million agri-food exports of the Kyrgyz Republic. Most Kyrgyz agri-food enterprises, including those that export, are small-scale producers. They must rely predominantly on middlemen/consolidators for

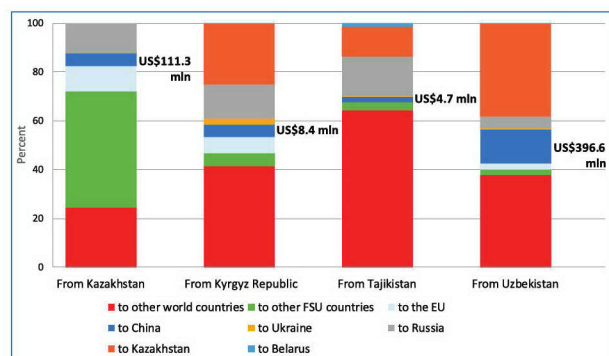
exporting their produce. In preparation for this report, we surveyed 57 agri-food enterprises to understand the challenges faced by these enterprises in linking agri-food enterprises with farmers and linking agri-food enterprises with markets. Our objective was to get a quick and general overview of the sector challenges, so the samples collected were not statistically representative, although this does not exclude credible conclusions. Our survey found that 21 out of 57 agri-food enterprises export their products. Of these 21 enterprises, only 6 export products worth more than 8 million Kyrgyz soms (around US\$100,000) per year. Most of the enterprises' exports are for less than 8 million soms each. How do enterprises compete with other larger food producers (including multinational corporations) both domestically and internationally if their exports and sales are only a "drop in a bucket"? How do public policies ensure that such small-scale enterprises stay competitive and are able to identify and maintain their market niche, though very small?

Estimates show that Kyrgyz agri-food products—namely fresh fruits and vegetables—have considerable market potential in the two major nearby markets China and Russia (World Bank, forthcoming). It is expected that both Russia's and China's markets will experience steady annual growth in the food categories, where Kyrgyz producers may have a competitive advantage. Between 2017 and 2030, China is predicted to show, on average, an annual growth of 1 percent in fruit and vegetable demand; the Russian market is expected to demonstrate similar growth. Can Kyrgyz exports be part of this growth? According to the recent study by the World Bank Agriculture Global Practice (World Bank, forthcoming), Kyrgyz agri-food exports are not yet widely present in China, while they are oriented toward Russian and Kazakh markets. Of US\$264 million agri-food exports in 2017, almost half went

to Russia, Kazakhstan, and other former Soviet Union countries. Exports to China were negligible, at US\$8.4 million (Figure 3).

In 2016 and 2017, the aggregate monetary value of imported and exported primary agriculture products were roughly equal but imports of processed food items exceeded exports five and four times, respectively (Figure 4). This not only illustrates the relative weaknesses of the local food processing industry but also reveals great potential market opportunities. Overall, the agri-food sector's contribution to total exports and imports of the country varies between 13.4 and 14.5 percent, but this can be improved because some commodities—for example, beans and dairy products—show promising potential to expand in export markets.

**Figure 3. Geography of Agricultural Trade in Central Asia, 2015**

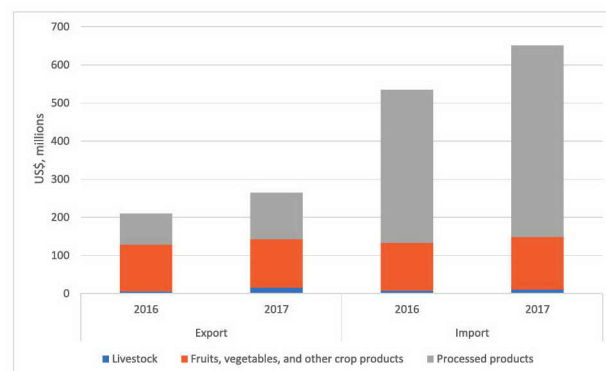


Source: FAOSTAT database, <http://www.fao.org/faostat/en/#home>.

Note: Dollar amounts are US\$, millions. EU = European Union; FSU countries = Former Soviet Union countries.

Competing for export markets can start locally, which can be less risky and less costly than competing globally. Building local processing capacities, establishing local value chains from inputs to retail markets, creating an able work force and innovative talent, and gaining experience in competing against foreign competitors in the domestic market can position local agribusinesses to expand successfully into export markets. But this does not exclude the possibility of better-prepared businesses focusing primarily on export markets from the outset. The current geography of exports—Kazakhstan, Russia, Turkey, some countries from the European Union (EU), the Islamic Republic of Iran, China, and so on—prove that successfully focusing on export markets can occur and can be expanded.

**Figure 4. Export and Import of Agriculture and Food Products**



Source: Kyrgyz National Statistics Committee data.



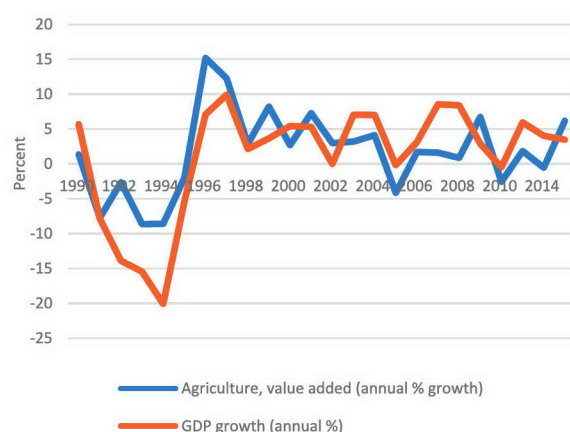
## Stagnating Productivity as Barrier to Realizing the Potential of High-Value Agriculture

The World Bank's Systematic Country Diagnostic report for the Kyrgyz Republic (World Bank 2016) recognizes that the agriculture sector, together with mining and energy, plays a central role in the new growth model of the country and in its ability to continue to progress toward the World Bank's twin goals of eliminating extreme poverty and boosting shared prosperity. Agriculture's importance is critical not only for household income and livelihoods in rural areas, where most Kyrgyz people live, but also because of its significant potential to generate higher-paid and higher-skilled jobs in downstream processing and off-farm agricultural services. The objective of this note is to offer policies for realizing this significant potential.

Agriculture sector performance has been characterized by erratic, slow growth and considerable underutilization of the existing

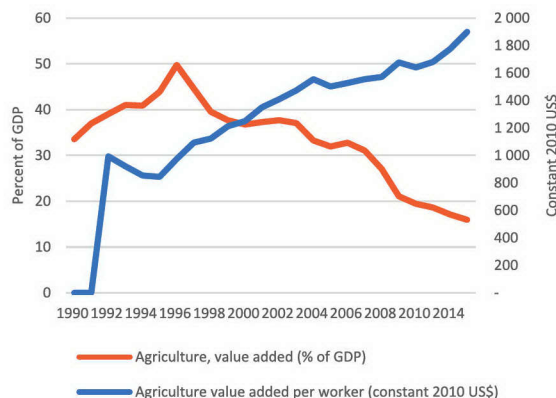
potential. Sector performance can be divided into three periods (Figure 5). First, a period of transition, from 1991 through 1995, when agriculture moved from a collective, Soviet-style farm production system to private ownership of land. This period was characterized by a sharp drop in agriculture value-added as well as an overall decline in GDP. The second period, from 1996 to 2005, was one of sustained growth, when the country reaped the benefits of private farm ownership and structural adjustments, as well as inflows of investment from international assistance programs. Agriculture performance was largely positive, with an average of 7 percent growth in value-added per year. The third period, from 2005 to the present, has been characterized by sporadic growth and underutilization of agriculture potential, in principle because of uncoordinated and inefficient public policies and external shocks, including political and weather-related shocks (Broka et al. 2016). This period includes occasional peak years followed by troughs with an average growth of 1 percent per year. Because of the relatively lower agricultural growth during this period, the share of agriculture in GDP dropped from 32 percent in 2005 to 17 percent in 2014 (Figure 5).

**Figure 5. Agricultural Value-Added Growth Relative to GDP Growth**



Source: World Development Indicators database, <https://data.worldbank.org/products/wdi>.

**Figure 6. Value Added per Worker: Labor Migration to Urban Areas**

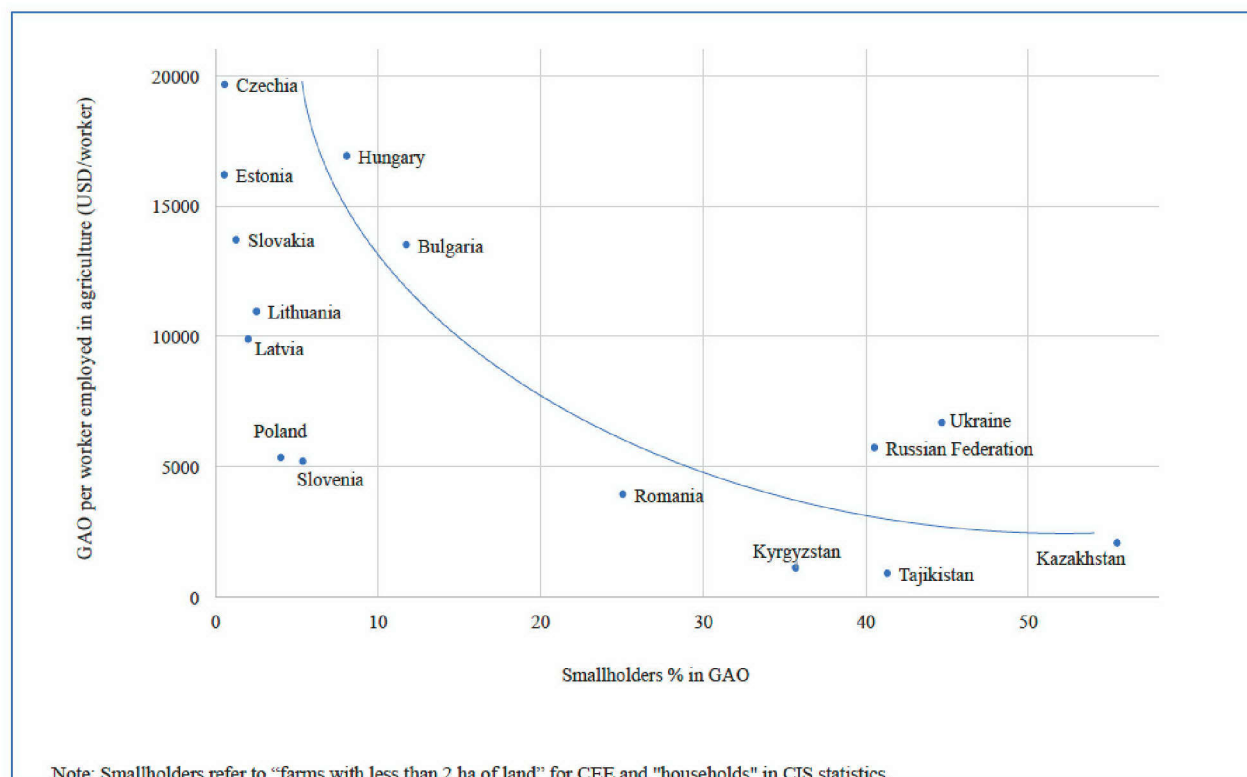




**Despite the rising agricultural labor productivity observed in Figure 6, the average agricultural value added generated by Kyrgyz farmers has remained very low in international comparison.** Between 2000 and 2014, the agricultural value added per worker in constant 2010 U.S. dollars—a proxy of farm labor productivity—increased by 167 percent, from US\$721 to US\$1,200, using World Development Indicators data. For comparison, agricultural labor productivity in Europe and Central Asia, excluding high-income countries, grew by 200 percent—from US\$1,310 in 2000 to US\$3,573 in 2014. In East Asia and Pacific, excluding high-income countries, it doubled during this period, from US\$3,612 to US\$7,352.

The Kyrgyz Republic is in the group of countries with very low agricultural labor productivity and with a large share of smallholder farm units (Figure 7). Smallholder farmers operate on small plots of land, typically grow several higher-value crops, and raise few livestock. Globally, the labor productivity of such farms tends to be lower than that of larger farms as a result of a number of market failures. To counteract this low labor productivity, proactive public policies in the Kyrgyz Republic promote higher-value crop production, niche marketing, and quality improvement to help small farms maximize their limited resources. Focusing on improving labor productivity is important because this indicator demonstrates farmers' potential to increase their income from agriculture, whereas

**Figure 7. Smallholder Farmers and Labor Productivity: A Regional Perspective**



Source: Swinnen and Burkitbayeva, forthcoming; reprinted with permission.

Note: CEE = Central and Eastern Europe; CIS = Commonwealth of Independent States; GAO = gross agricultural output; ha = hectares.

land productivity demonstrates farmers' potential to improve food security. As such, policies oriented toward improving labor productivity could help enhance farmers' incomes. Public policies should also support farmer collective actions, such as productive partnerships or cooperatives.

While increasing labor productivity is an ultimate objective of public policies, its measurement in low-income countries such as the Kyrgyz Republic is a challenge. The challenge is not only the result of poor farm labor statistics, but also because some Kyrgyz farmers are likely to be part-time farmers, spending less time on agricultural activities than a full-time agricultural worker would. The data on actual time (hours) spent on farming activities are not available, making cross-country comparisons not fully accurate. A more accurate indicator for cross-country comparisons is agricultural land productivity measured as a value added per hectare of agricultural land.

Between 2000 and 2014, the land productivity of Kyrgyz farmers grew annually by only 2 percent, compared with 4 percent growth in farm labor productivity. In international comparison, agricultural labor productivity grew by 3 percent in Europe and Central Asia and by 4 percent in East Asia and Pacific. Generally, agricultural productivity in the Kyrgyz Republic has been suffering from low

investment—both public and private, including foreign direct investment. Technology improvement in agriculture remained very low, since the public sector did not invest much in research and development. Infrastructure, including access to input and output markets, improved only slightly, and that improvement depended on external donor assistance programs. Agricultural machinery, on-farm irrigation networks, and extension services for farmers have all depended heavily on limited foreign assistance and donor support programs.

**The low level of agricultural land productivity in the Kyrgyz Republic has also been reflected in low yields.** For example, all major fruits, in which the Kyrgyz Republic seems to have a comparative advantage and export competitiveness, have much smaller yields than the yields in the peer countries (Table 1). The fruits and nuts presented in Table 1 were chosen because a recent analysis by the World Bank that calculated the Revealed Comparative Advantage of Kyrgyz agricultural products found that these fruits and nuts have the highest comparative advantage in Chinese and Russian markets (World Bank, forthcoming).

**Low partial land and labor productivities have led to the relatively low total factor productivity (TFP) in the Kyrgyz Republic.** TFP was actually negative between 2001 and 2013 (Figure 8). Declining

**Table 1. Yields of Selected Fruits: Cross-Country Comparisons, tons/hectare, 2014**

Fruit	Kyrgyz Republic	Uzbekistan	Turkey	Chile
Cherry	5.1	8.6	6.4	n.a.
Walnut	4.7	9.2	n.a.	n.a.
Apricots	3.0	11.0	5.0	n.a.
Plums	6.2	n.a.	n.a.	17.00

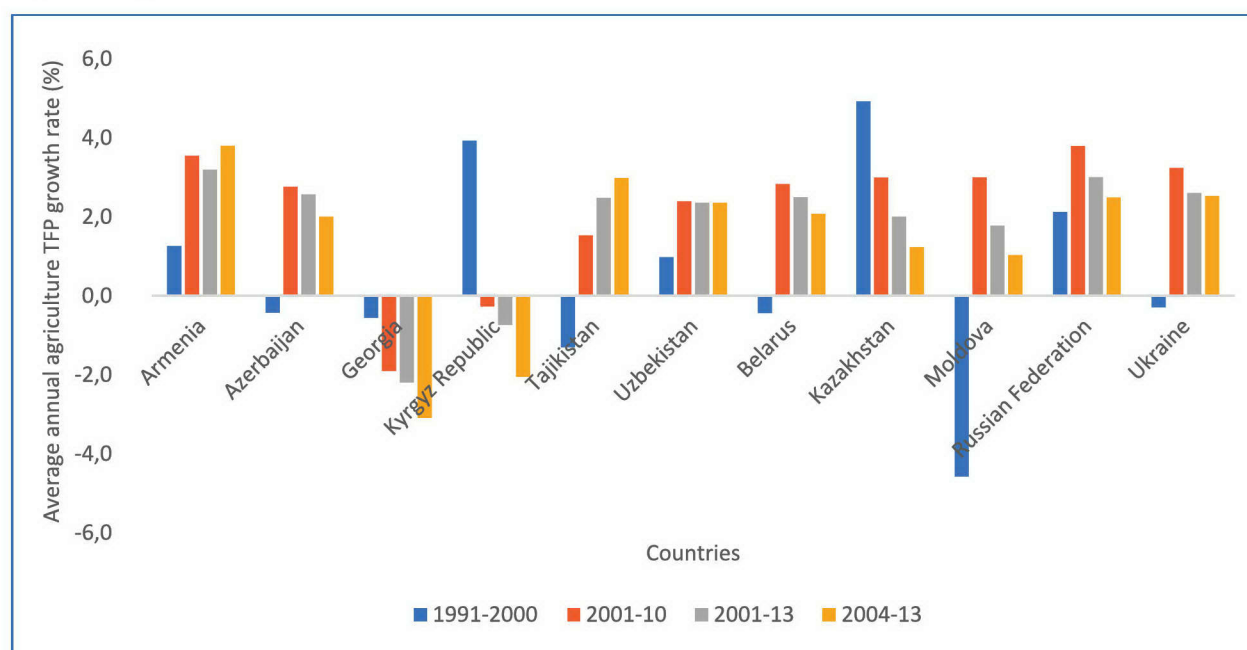
Source: FAOSTAT database, <http://www.fao.org/faostat/en/#home>.

Note: n.a. = not applicable.

productivity adversely impacted the sector's performance, restricting opportunities for recovery that would capture the benefits of high-value agricultural exports. The consistency of decline in agricultural TFP points to several major structural weaknesses in the Kyrgyz agri-food sector, including ineffective policies to support productivity growth, inadequate research and extension services to support agricultural growth, and inadequate market

linkages and weak value chains. The last two are especially important for addressing the priorities identified by the government. When compared with other similar post-Soviet countries that have smallholder-dominated agricultural systems (Figure 8), Kyrgyz agriculture TFP performance differs from most of them by demonstrating a consistent decline in TFP growth rate.

**Figure 8. Agricultural Total Factor Productivity Growth Rates in Selected Countries, 1991–2013**



Source: USDA International Agricultural Productivity database, <https://catalog.data.gov/dataset/international-agricultural-productivity>.

Note: TFP = total factor productivity.



## Weak Market Linkages and Unrealized Potential for Smallholders

**Enhancing the Kyrgyz Republic's agri-food sector performance depends on reversing the consistent productivity decline, creating non-agricultural jobs in rural areas, improving market access, and sustaining the value creation of agri-food products.**

To achieve these outcomes new investments are required in Kyrgyz agri-food sector so that it can benefit from the increasing demand for quality produce and processed food both domestically and from neighboring countries. The country has a unique opportunity to boost its agri-food sector performance given its membership in both the World Trade Organization (WTO) and the Eurasian Economic Union (EAEU) and its proximity to large markets in Eurasia, Asia, and South Asia. What are the challenges for achieving these goals? We discuss them below in detail.

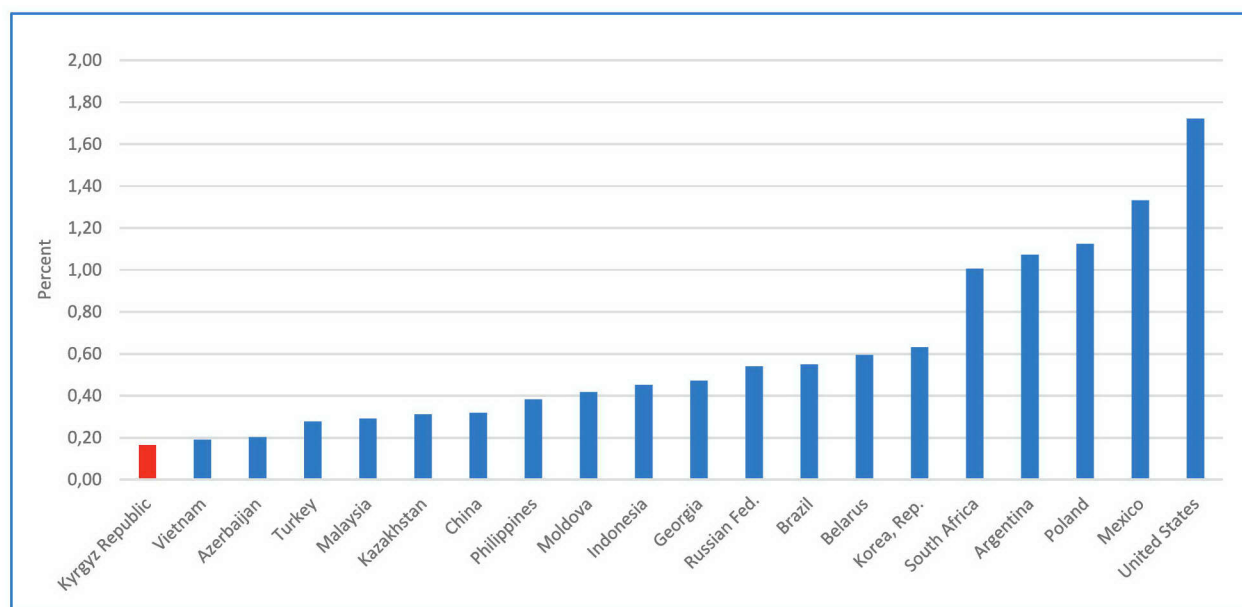
**The agri-food sector in the Kyrgyz Republic is dominated by smallholders both upstream and downstream.** Three main factors affect low productivity in the smallholder farming sector. First, existing agricultural research is not of high enough quality to support productivity growth. It does not enable the adaptation of new varieties and breeds on a large enough scale to benefit smallholders. Second, public investment in productive service provision is low. Although considerable investments have been made in large public infrastructure for agriculture—such as irrigation canals, major roads, electric grids, and so on—they have not been reinforced by adequate small-scale infrastructure to promote on-farm service provision and market access. Third, the linkage of farmers with markets and with agri-food enterprises has not been strengthened, which results in missed opportunities for market pull mechanisms.

Below we discuss the importance of the agri-food processing sector in promoting agriculture sector performance, while at the same time considering that productive service provision and small-scale infrastructure remain important areas for the consideration of public support.

**The agri-food processing sector is not competitive either domestically or internationally.** In the Kyrgyz Republic, a competitive agri-processing sector could provide a natural entry point to increase the productivity of the agriculture sector and create much-needed off-farm employment in rural and urban areas. A well-developed food-processing industry can stimulate higher agricultural productivity and higher agricultural growth. However, the food processing industry in the Kyrgyz Republic is still small relative to the country's primary agriculture sector and has not demonstrated dynamic growth characteristics. The depth of the food processing sector—an indicator that measures the extent to which the country's agri-food processing is developed compared with its primary agriculture—is quite low, even when compared with other regional comparator countries (Figures 9 and 10).

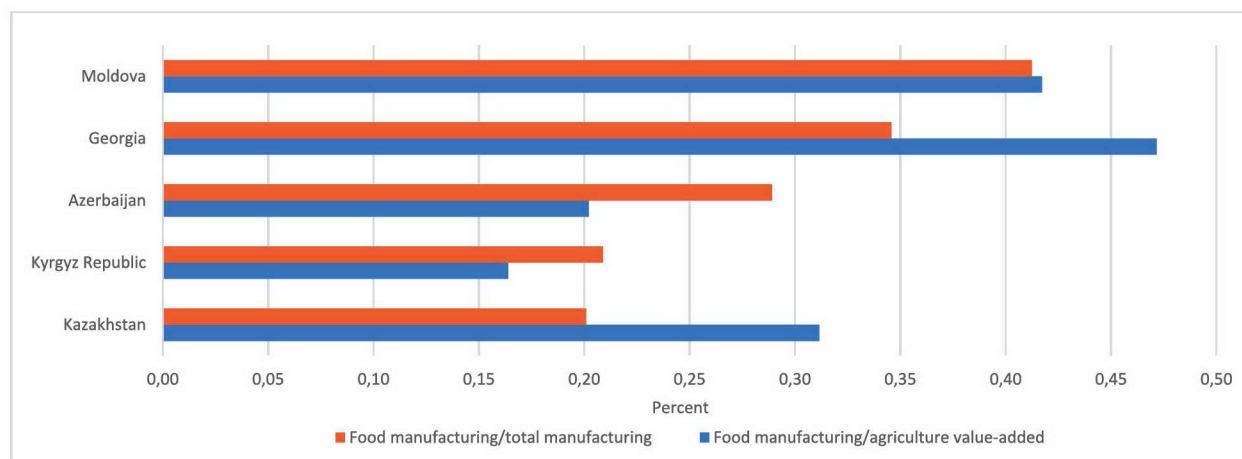
It is expected that the food processing sector will develop as a response to consumption growth—that is, as people's incomes increase they switch to higher-value and convenience food items. As is common in other countries, consumption and income growth leads to an increase in formal retail trade—so-called *supermarketization*—which in turn promotes domestic food processing (Reardon et al. 2003). Data from the National Statistics Committee of the Kyrgyz Republic show a consistent increase in “formal food retail”—that is, in the share of retail trade in kiosks, organized stores, and supermarket chains. According to the National Statistics Committee of the Kyrgyz Republic data, the share of supermarkets in total retail trade is around

**Figure 9. The Depth of the Food Processing Industry (Food Manufacturing/Agriculture Value Added), average, 2006–13**



Source: World Development Indicators database, <https://data.worldbank.org/products/wdi>.

**Figure 10. The Depth of the Food Processing Industry and Food Manufacturing as a Share of Total Manufacturing, average, 2006–16**



Source: World Development Indicators database, <https://data.worldbank.org/products/wdi>.

16 percent. The growth in the formal retail sector demonstrates that this share is likely to increase in the future (Figure 11). However, our survey conducted for this study shows that traditional and sometimes informal markets (e.g., bazaars) continue to serve as the major channel for food trade,

especially for smallholder farmers. Additionally, traditional markets are of great importance for supplying consumers with key food items. Very often public policies and public investments neglect such traditional markets, which very often suffer from poor hygiene and sanitation (Reyes et al. 2016).



**Figure 11. Formal and Informal Retail Trade in the Kyrgyz Republic: Share of Total Retail**

Source: National Statistics Committee of Kyrgyz Republic.

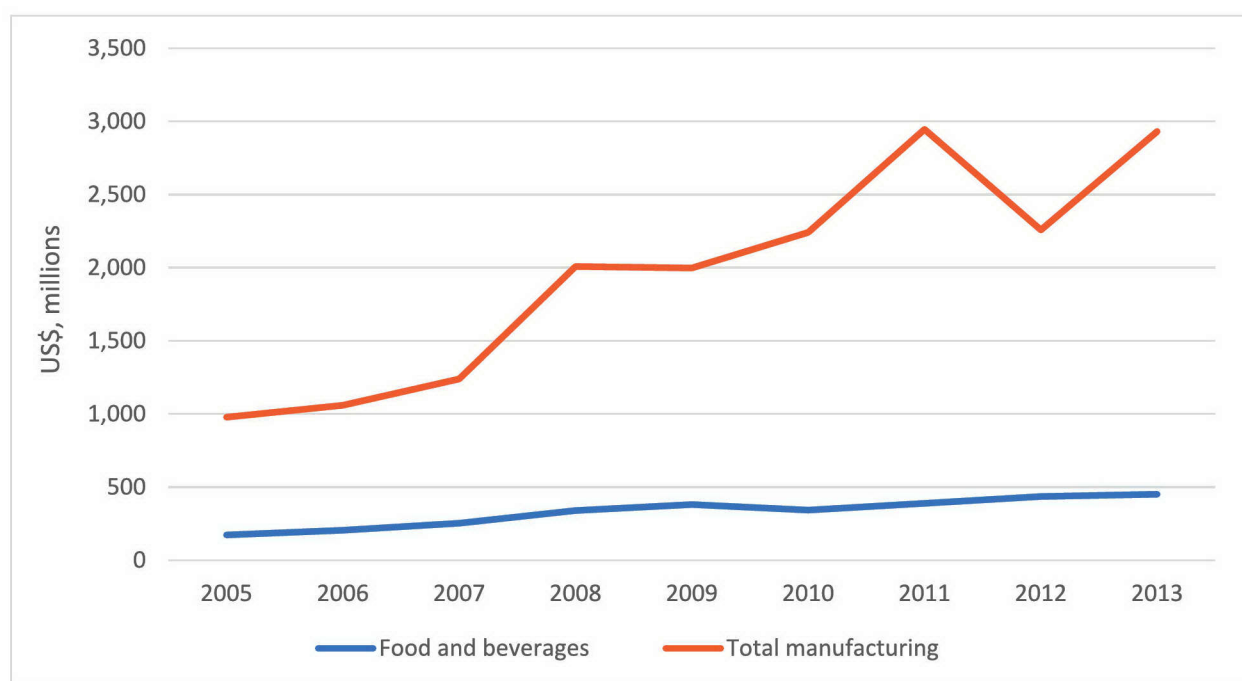
Growth in the formal retail sector in the Kyrgyz Republic does not seem to have led to an increase in food processing, but rather to an increase in imports. Food imports grew more than 4.0 times between 2006 and 2013, whereas agri-food processing output grew by only 2.2 times during the same period.<sup>1</sup> The agri-food processing sector would be expected to grow faster than the overall manufacturing sector because the demand for food and processed food products is relatively consistent as consumers' incomes grow, and because access to technology becomes easier and domestic investments become more available. However, in the Kyrgyz Republic, agri-food processing sector growth was slower in 2005 through 2013 than overall manufacturing growth. Agri-food processing grew with the compound annual growth rate (CAGR) of 33 percent in from 2005 to 2013, whereas overall manufacturing grew with CAGR of 37 percent during the same period (Figure 12).<sup>2</sup>

The number of registered agri-food processing establishments in the Kyrgyz Republic dropped relatively quickly—from 500 in 2005 to 335 in 2013. This reflects the decline in the number of enterprises in the overall manufacturing sector—that is, this decline is not unique to food processing (Figure 13). This may reflect a positive trend, since competitive firms strengthen their positions in the market and non-competitive firms exit. Such strengthening of the food processing firms could have led them to attract more jobs. In fact, the share of food sector employment in total manufacturing has grown over the same period, indicating the potential of the food sector to attract jobs (Figure 14). It is, however, counterintuitive to see relatively flat output in the food manufacturing sector (Figure 12) when it is attracting jobs (Figure 14). There could be problems with reporting,<sup>3</sup> or with a low level of technology and high labor intensity. For the time

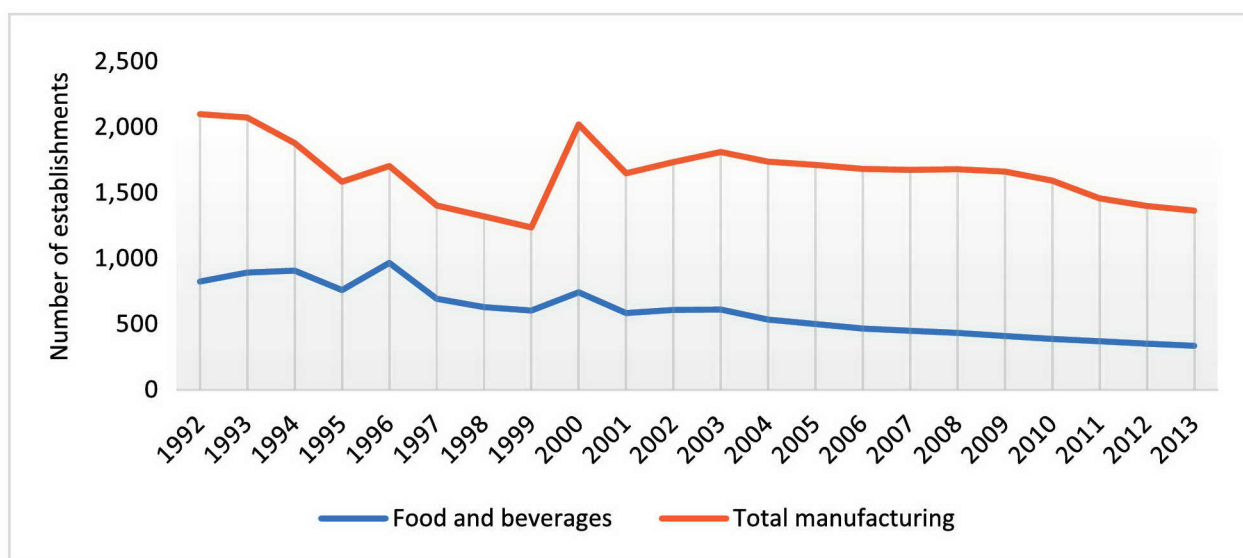
1 Based on FAOSTAT data.

2 Calculations are based on data from UNIDO's Statistical Database, available at <https://stat.unido.org/>.

3 Most rural workers are considered self-employed. This actually creates a problem because they often do not qualify for social assistance or unemployment benefits since they are not considered poor, because they were distributed land and some assets after the de-collectivization.

**Figure 12. Output of the Food Manufacturing and Total Manufacturing Sectors, 2005-13**

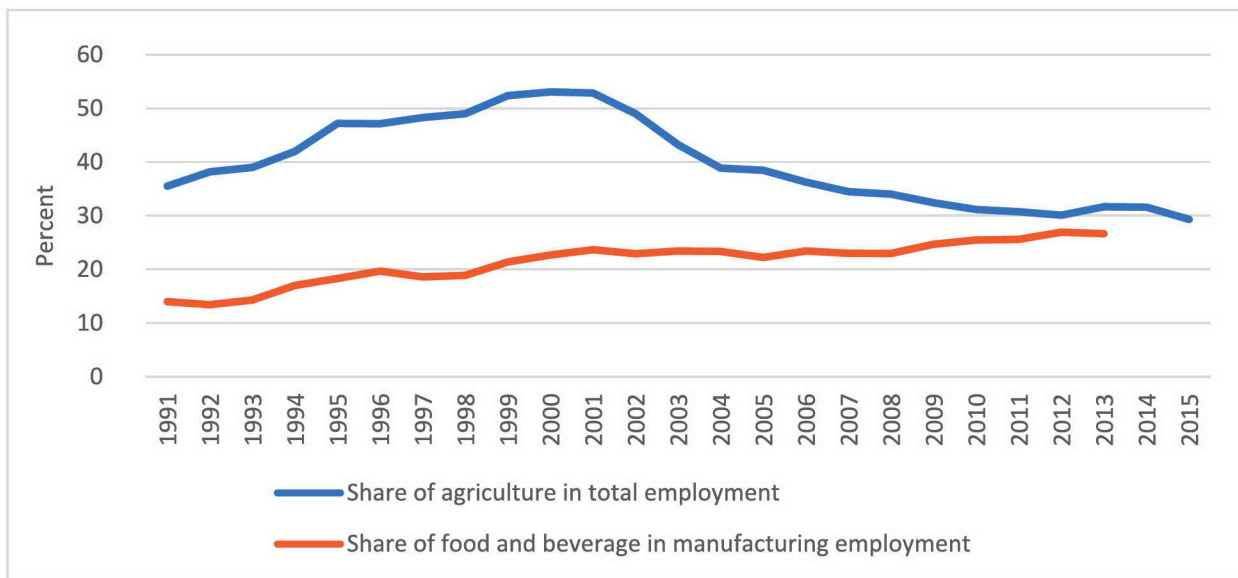
Source: UNIDO Manufacturing Value Added Database, <https://stat.unido.org/database/MVA%202018,%20Manufacturing>.

**Figure 13. Number of Establishments in Food Manufacturing and Total Manufacturing**

Source: UNIDO Manufacturing Value Added Database, <https://stat.unido.org/database/MVA%202018,%20Manufacturing>.

being, cheap labor may not have a significant impact on costs, but with growing wages, agri-food enterprises would have to upgrade their technological capacities to remain competitive.

A strong case can be made for the need to analyze the current state of agri-food processing and manufacturing enterprises and determine the underlying factors that constrain their growth

**Figure 14. Employment in Agriculture and Food Processing Industries**

Source: National Statistics Committee of the Kyrgyz Republic.

and competitiveness both domestically and internationally.

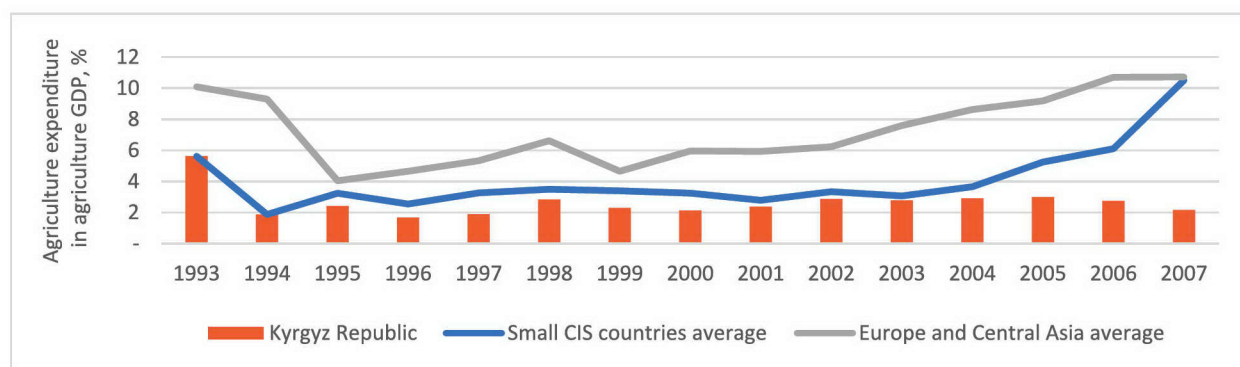
**Agri-food firms are too small and informal to be competitive, attract investments, and create jobs.** National Statistics Committee data show that around 70 percent of agri-food production is concentrated in the relatively small- and medium-scale enterprises (those with fewer than 200 employees). A survey commissioned for this report confirms that downstream agri-food processing sectors are dominated by small enterprises. The survey of 57 enterprises found that 79 percent of them process a volume of less than 8 million soms (US\$123,000) of raw material (fruits, vegetables, milk, meat) annually. Accordingly, around 80 percent of surveyed enterprises report annual sales of less than 8 million soms.

**Small firms tend not to be competitive in mainstream markets because they face strong competition from large firms, including multinationals.** They lack access to capital to invest in new technologies to expand

production and markets, which they would need to compete. They normally do not follow market trends; they produce traditional products and lack innovation. They are seldom profitable enough to be able to invest their own funds in technology and competitiveness. They also cannot establish effective linkages with primary agricultural producers, and thus fail to facilitate the absorption of benefits that developed agri-food processing sector brings. Finally, small firms have difficulty entering markets, especially in export markets. However, such small firms can be competitive and profitable in premium, niche, and specialized markets if they can produce the quantity and quality of products that traders demand, and if they comply with various food safety and Sanitary and Phytosanitary (SPS) regulations and standards.

**Small firms also have difficulty accessing markets and technology.** Most surveyed firms cannot access export markets because they do not have enough resources (human and financial) to promote their products. In domestic markets, our survey found that around 57 percent of companies use informal



**Figure 15. Share of Agriculture Public Expenditure in Agriculture GDP**

Source: International Food Policy Research Institute, SPEED Database.

Note: CIS = Commonwealth of Independent States.

channels (marketplaces or informal traders) to sell their products, 25 percent sell through small kiosks and neighborhood stores, and only 18 percent are able to access supermarkets to sell their products. Small firms also have difficulty upgrading their technology. Around 50 percent of surveyed firms point to old equipment and facilities as the main bottleneck to their development.

**The enabling framework continues to be risky, despite significant strides to improve key laws and regulations.** A recent Enabling Business of Agriculture report (World Bank 2017), which ranks 60 countries around the world on various performance indicators for agriculture and agribusiness sector regulations, ranks the Kyrgyz Republic favorably on some indicators (finance, market access, and agriculture machinery regulation) and less favorably on others (especially transport and seed). Such mixed performance points to a weak policy framework and weak political environment, which—combined with limited market potential, low incomes, a difficult geography, and deteriorated infrastructure—diminish the attractiveness of the country to foreign investors and reduce domestic firms' competitiveness. The enabling environment

is especially important for agri-food sector performance because the sector does not attract new investments to benefit from the increasing demand for quality produce and processed food either domestically or from neighboring countries. This is a particularly important missed opportunity for the Kyrgyz Republic given its membership in both the WTO and EAEU and its proximity to large markets in Eurasia, Asia, and South Asia.

**Public expenditure in agriculture is very low.** The level of public expenditure does not facilitate technological progress in agriculture (Figure 15). Funding support for agricultural research and extension is very limited. Usually, in the absence of adequate public funding for agricultural research and extension, private agri-food firms tend to fill some of the gap. Such firms support farmers and farmer groups (cooperatives, productive alliances, associations, etc.) that supply them with agricultural produce by promoting adaptive research and extension advisory services. These firms also invest in local community infrastructure with the objective of building long-term supplier relationships with farmers and agricultural producers.

This section highlighted three bottlenecks for agriculture sector performance in the Kyrgyz Republic. The first is that the agri-food sector is dominated by many small agri-food enterprises, which are having difficulty competing in domestic and export mainstream markets. Such small enterprises have opportunities to compete in premium and niche markets, but they need capacity building to up their game in terms of product offerings and food safety and quality. The second is that the sector is characterized by an uneven regulatory environment, even though the Kyrgyz

Republic has made large strides in improving key regulatory frameworks. The third is that public spending is not enough to support productivity growth and technology spillovers for small agri-enterprises.

What are the public policy options for addressing these bottlenecks? What is the role of the government? Does the private sector have a role to play? How can finance be mobilized to address these bottlenecks? The next section provides recommendations for policy options.

## Policy Recommendations

The vision for agriculture sector development described in the Kyrgyz government's program is anchored in two policy objectives. The first is to increase exports and expand markets for agri-food products with a focus on ecologically clean and organic production. The second is to increase value addition in the agri-food sector while promoting coordination and cooperation and strengthening market linkages. How can these policy objectives be achieved? What are the potential public investment options? The following proposes policies for addressing the government objectives for the agriculture sector.

### Recommendation 1. Expanding Markets and Improving Competitiveness

It is critical to expand the markets for Kyrgyz agri-food products. This could be done on two tracks. The first track is niche marketing and moving up the value chain by promoting the higher-value and premium agri-food products demanded by the growing affluent classes of consumers (e.g., organic and natural products, high-value fruits and vegetables, traditional and healthy food items, etc.). Supporting the development of new food products or expanding the existing assortment of products catering to changing tastes and preferences of consumers would lead to improved competitiveness of small agri-enterprises. These enterprises could be well placed to produce niche products and to cater to very specific tastes and preferences of a variety of consumers. In the meantime, changes in diets, health consciousness, and the “globalization of tastes” create demand for food products that have price premiums and are highly demanded by affluent urban populations.

#### Box 1. Competitive (Matching) Grant Programs

Competitive (Matching) Grant Programs (CGPs) focus on commercially oriented, small- to medium-size farmer groups and small rural businesses. Although CGPs work with poor farmers, they prioritize commercially oriented ones. The CGPs focus on business and market-oriented activities and emphasize adapting and adopting existing technologies (but not exclusively). Grants include funding for investments to set up the innovative activity, for external technical assistance, and for technology transfer and demonstration to other farmers and stakeholders. A CGP initially operated in Albania, and similar schemes were implemented in Armenia, Azerbaijan, and Kazakhstan.

In Armenia, for example, many successful CGPs funded new market development activities, such as new and innovative products (e.g., honey cheese, garlic powder); new packaging (e.g., adapting new forms of crates for efficient transporting of fruits and vegetables); and food safety and quality investments (e.g., improving the hygiene in a processing facility). Such grants included financing for hardware (building renovation, procurement of equipment) as well as a mandatory component for advice and technology transfer.

*Source:* Authors and World Bank 2012.



### Recommendation 1. Expanding Markets and Improving Competitiveness

Niche marketing and moving up the value chain (firm level)	Export promotion (government agency level)
<ul style="list-style-type: none"> <li>● Provide matching grants for new product development, food safety and quality improvement</li> <li>● Provide advisory/extension programs for agri-food small and medium enterprises for technology transfer, product development, and marketing</li> </ul>	<ul style="list-style-type: none"> <li>● Support small and medium agri-enterprises for compliance with export requirements</li> <li>● Provide direct (exhibitions) and indirect (advertising) support in export markets</li> <li>● Work with destination market governments to remove non-market barriers</li> </ul>

Public sector assistance could promote product development in small agri-enterprises. This assistance could be in the form of matching grant support (Box 1) to competitively selected agri-enterprises and cooperatives that can demonstrate innovative products with market demand or that can create a sustainable market demand by introducing new products. The experience of other countries suggests that successful support mechanisms promoted linkages with small farmers and ensured that successful experiences can be demonstrated to a broader group of farmers. Advisory and extension services targeted to specific value chains comprise another avenue for providing such assistance. The government could finance advisory/consulting programs for small food enterprises that are willing to improve their products and invest in product development. The government could also co-finance selected marketing costs for new products, especially if these products are considered healthy, traditional, and natural.

The second track for expanding the markets is to promote exports of Kyrgyz agri-food products by focusing both on quality and safety and on conducting on export promotion activities. The Kyrgyz Republic has two relatively well developed export markets where Kyrgyz agri-food products have strong growth potential: Russia and Kazakhstan. Both are sophisticated markets in their regulatory challenges and requirements and both have high transportation costs, which can constrain

competitiveness and the availability of exports from other countries. To compete in this environment, Kyrgyz products have to be of high quality and be positioned in niches where small and medium producers have more opportunities to compete. Public policy should be directed to facilitating Kyrgyz producers' compliance with export market requirements, and possibly to developing export promotion programs through direct (exhibitions) and indirect (advertising) export promotion.

### Recommendation 2. Linking Small Enterprises and Farmers with Markets

The Kyrgyz Republic's agriculture production is fragmented: many small farmers and producers are involved in food production, and average farm size is very small. Small farms are typically unable to effectively access markets unless they organize into farmer groups, cooperatives, associations, and so on. However, this type of collective action often fails because trust among farmers and between farmers and processors is lacking. There are numerous successful examples in other countries, however, where development programs helped promote such market-oriented farmer organizations, resulting in lower production costs, higher-quality products, and larger sales volumes. Improved competitiveness leads to access to higher-value markets, increased incomes, and better livelihoods for farmers. Public

## Box 2. Productive Partnerships to Promote Farmer Collective Action

A productive alliance or partnership is a commercial agreement between a producer organization (PO) and a buyer. It specifies (1) the quality, quantity, timing, and delivery specification of the product generated by the PO; (2) the payment and price determination methodology; and, often, (3) the additional obligations of the buyer to assist the PO in the production process.

The buyer may be a qualified (i.e., capable, financially sound) aggregator, wholesaler, large-scale retailer, agro-processor, or exporter. In some cases, it can be a government entity such as a school district in charge of delivering meals to students. The PO may be a cooperative, a civil association, or any other legal form permitted in the country. The agreement itself need not be a contract. Contracts are often not enforceable and the idea in an alliance is to build a relationship of trust.

Everybody benefits in good alliances. Buyers are interested in entering into partnerships with POs because these arrangements lower the transaction costs (agreeing, enforcing, collecting) and risks that arise from dealing with multiple smallholder producers. Farmers are interested in alliances because POs reduce their production costs and facilitate product upgrading (through bulk purchases of inputs and services) and increase their bargaining power. Alliances thus are a prime mechanism for dealing with farm fragmentation and transactional insecurity in a context of increasing demand for farm products.

Alliance projects build platforms for financing productive partnerships at scale. These projects facilitate encounters between POs and buyers; help them build joint business plans if their agreements have market and income-generating potential; and assist POs in achieving higher-value marketable products and in building the institutional capacity to maintain adequate levels of service provision for their members.

Financing alliances is usually the responsibility of POs. The objective of this financing is to reach the agreed product specification and to create the conditions for sustainable production at the level of the farms and of the PO itself. Financing can be provided through matching grants, credit, or a combination of both. Buyers may be supported through credit and guarantee facilities.

Experience with productive alliance projects in Latin America, and increasingly in Africa and Asia, proves that this is a mechanism that successfully helps smallholder farmers to enter higher-value supply chains. This can generate significant impacts on farm and household income, reducing poverty levels in rural areas. Wider impacts are felt in regions through increased investments by input suppliers and other actors along value chains, and by the spillover effects these have on additional farmers.

policy could support programs that promote such associative actions among farmers and between them and buyers. Good international practices, such as productive partnership programs (Box 2), show that these collective or associative actions are best achieved through incentives allocated



### **Box 3. A Funding Mechanism to Support Linkages in Agri-Food Value Chains and Foster Innovation: The China Technology Transfer Project**

At the end of 1990s, China's agri-food sector was in a phase of urgent and challenging structural transformation dictated by lagging agricultural production that was insufficient to meet domestic demand, natural resource pressure, changing consumer demand, pressure to advance domestic food processing and marketing, and opportunities to compete in global markets. Critical bottlenecks for the transformation that was required in the agriculture sector were the slow transfer and adoption of technology and a lack of knowledge-intensive agriculture. Because of its fragmentation, the farming sector was unable to effectively connect with higher-value markets, and the domestic food manufacturing sector was unable to effectively source raw materials to cater to changing consumers' tastes and preferences. One way to respond to these challenges was to promote a viable model for implementing public investments that would promote the modernization of agricultural production, strengthen linkages with food manufacturing, and improve marketing.

A World Bank-funded project helped introduce a model of public-private partnership that helped facilitate public sector support to the agri-food sector and establish a national framework for targeted implementation of public investments for agri-food sector. Among others, the project helped in the following areas:

Combining public sector support for research, extension, and training with private investments. The government funded the development and dissemination of public goods, but these activities were implemented by the private sector to foster the integration of public and private investments.

Establishing farmer associations that would benefit from learning and technology transfer, and at the same time collectively supplying raw materials to food manufacturing enterprises. Funding support for food manufacturing enterprises was contingent on their agreement to directly support farmer associations that provide raw materials to these enterprises.

*Source:* World Bank 2012.

competitively to self-created and self-managed farmer organizations. In contrast, mandating that farmers create cooperatives as part of any public support program usually does not work. Building trust requires time and effort, and funding support alone is not sufficient to build such trust.

Linking farmers to markets also requires that farmers and small entrepreneurs have access to services that

help improve their productivity, that introduce and promote new technologies, and that facilitate market linkages. Such services (see Box 3) include animal and plant health services, advisory and extension programs, research and development, and so on. They also include services that expand the benefits of modern digital technologies to farmers and agri-food producers. And third, they include public infrastructure development, such as rural roads and



rural Internet connectivity, water and sanitation networks, small-scale irrigation, and so on.

Public funding should be directed to promoting rural productive services. Past and current donor-funded projects have been focused on promoting those services that promote agricultural extension and advisory programs, animal health, and to some extent adaptive research. It is more critical now to extend public funding to promoting small-scale rural infrastructure that would support and enhance opportunities for commercial agriculture development. Especially important is to enhance on-farm water productivity through improved on-farm irrigation schemes. In addition, investments in connectivity—both rural roads and Internet connectivity—would improve transfer of technologies and market linkages.

Another method for linking farmers to markets relates to improving food safety and quality. Both regulatory aspects of food safety and production practices need to be brought up to date to support safe, high-quality food production. Considerable advances have been made in making the country's regulatory framework and public food safety enforcement capacity align with Eurasian Economic Union requirements; however, improving food safety practices along the value chain, specifically for small producers and processors, would be one practical step toward improving access to export

markets. Some infrastructure improvements are also needed in marketplaces. For example, marketplaces can be upgraded to benefit from better water supplies, drainage, and waste management. Investments to upgrade rural road infrastructure are needed to reduce food losses, make gas or electricity available, and improve water and sanitation for small food producers. Food enterprises would benefit from improved processing equipment and facilities, though public support in this case should be limited to promoting innovation and new technologies rather than granting new equipment to enterprises. But what is needed more to promote safer food is the implementation of better practices. Around the world, food safety is mostly achieved not through better equipment and facilities—though these are also essential—but instead through good production and manufacturing practices, clean and hygienic food production environments, and well-trained staff.

Expanding the benefits of modern technology to better connect farmers with markets can be supported through public programs. Current and future public investments in connectivity infrastructure offer opportunities for expanding Internet access and use in remote areas. Public support could help improve access to these technologies by supporting the development of interfaces and content relevant to farmers and agri-food producers.

## **Recommendation 2. Linking Small Enterprises and Farmers with Markets and Promoting Value Addition**

<b>Productive partnership programs (linking small and medium agri-firms with small farmers)</b>	<b>Supporting infrastructure upgrades (linking with markets)</b>
<ul style="list-style-type: none"> <li>● Provide market-based programs to support productive groups (cooperatives, associations, alliances, etc.)</li> <li>● Expand benefits of modern technology, supporting connectivity</li> </ul>	<ul style="list-style-type: none"> <li>● Invest in upgrading marketplaces (better water supply, waste management, sanitation)</li> <li>● Invest in small infrastructure in rural areas to bring productive services to farmers and small and medium agri-firms (on-farm small irrigation schemes, water and sanitation, rural roads, gasification, electricity)</li> </ul>

### Recommendation 3. Creating an Enabling Environment

The main question to be asked when addressing regulatory framework improvement for agri-food enterprises is: What constrains private investment? There is a perception that all major regulatory improvements had been made in the Kyrgyz Republic long ago, but that these improvements in the business environment have not resulted in de-risking the space for private investors (Box 4). Private

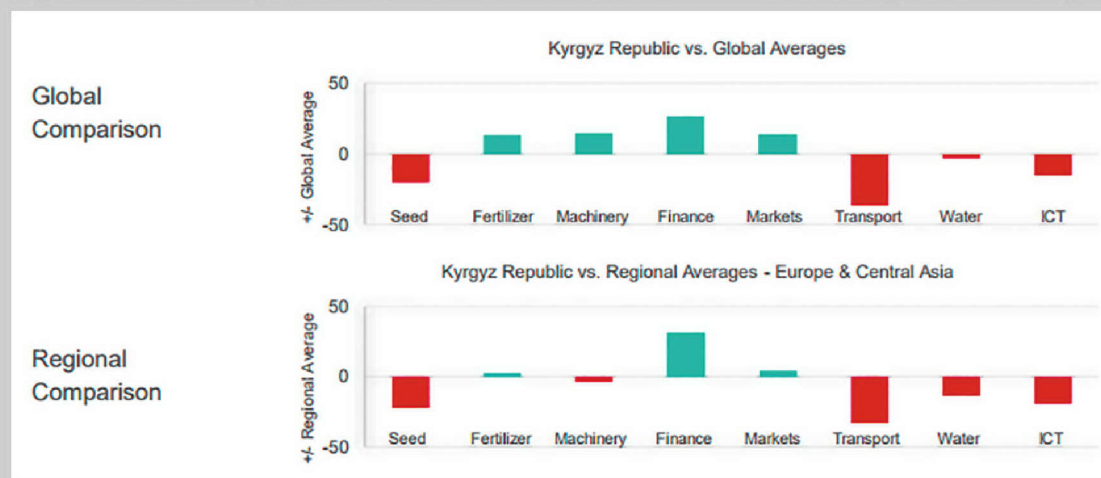
investment, especially the foreign direct investment, in the agri-food sector is very low. Public sector support should concentrate on reducing the risk for private investment and promoting new investment opportunities in the agri-food sector. This could be done by advancing business environment reforms and improving the environment for both large and small investors. The Kyrgyz Republic should set as a goal the achievement of significant improvements in the World Bank's *Enabling the Business of Agriculture* (EBA) scores.

#### Box 4. Enabling the Business of Agriculture Results for the Kyrgyz Republic

Countries' regulatory quality is associated with economic growth and levels of development. High-income countries have better agribusiness regulations as measured by Enabling the Business of Agriculture (EBA), and this outcome is shown across all topics. However, there are exceptions; some countries perform better on EBA indicators than their income level would suggest. That is the case of Vietnam for fertilizer, machinery, and transport; Kenya for seed, finance, water, and information and communication technology (ICT); and the Kyrgyz Republic for finance, markets, and machinery.

The Kyrgyz Republic ranks in the top 15 (out of 90) for markets and machinery, showing efficient processes for exporting agricultural goods and tractor registration, but it places in the bottom 10 for seed and transport as a result of the lack of regulations on seed quality control and trucking licenses.

**Figure B4.1: The Kyrgyz Republic EBA Scores vs Global and Regional Averages**



Source: World Bank 2017.

Over the years there has been a proliferation of microcredit in the Kyrgyz Republic. Various donor programs have supported the development of an advanced microcredit system. But these programs largely focused on making capital available to local banks and creating an advanced microcredit

network. More needs to be done to expand credit to small farmers and small agri-enterprises. This could include the introduction of modern mobile payment systems, innovative tools for collateral assessment, and alternative credit scoring systems.

### Recommendation 3. Creating an Enabling Environment

Promote investment	Promote access to services (financial and non-financial), improve input markets
<ul style="list-style-type: none"> <li>● Improve the business environment and regulation</li> </ul>	<ul style="list-style-type: none"> <li>● Promote modern technologies for financial and non-financial services</li> <li>● Change banking and financial service regulations to allow and promote the use of new credit/financing instruments (e.g., non-collateralized loans based on structured deals)</li> </ul>



## Conclusion

Realizing the potential of high-value agri-food exports is the cornerstone of the new government's policy objectives for agriculture development. Two

policy objectives stand out: more exports and the expansion of agricultural markets, and an increase of value addition in the agri-food sector. This policy note provided three recommendations for policy directions to help achieve these goals: expanding markets, linking farmers and agri-enterprises with markets, and creating an enabling environment.

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## **Kyrgyz Republic: Developing Agri-Food Value Chains**

**The prevalence of small farmers and small-scale agri-food processors creates unique challenges for agri-food value-chain development in Kyrgyzstan. That is, the Kyrgyz farm structure itself, with its dominance of small farmers, is one of the main constraints for the effective functioning of modern value chains, preventing them from delivering high incomes and improved livelihoods for smallholders. But this structure also provides one of the main opportunities for developing the value chain. Small-scale agri-food processors are rarely successful in establishing sustainable partnerships with small farmers unless there are strong market signals that facilitate these partnerships. Such strong market signals for Kyrgyz agri-food producers/processors are found in niche and premium markets of products that require specialized and labor-intensive agricultural production. Therefore, when market failures are addressed by public policy interventions, small farmers and small-scale agri-food processors have improved access to markets, more opportunities to capture value, and more opportunities to improve their livelihoods.**