



**Food and Agriculture
Organization of the
United Nations**

ASSESSMENT OF AGRIBUSINESS ENVIRONMENT IN KYRGYZSTAN

**SUMMARY OF
VALUE CHAIN GAP ANALYSIS
AND RECOMMENDATIONS**

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Food and Agriculture Organization of the United Nations

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Abstract

Though the role of agriculture and food industry sectors in the economy of Kyrgyzstan has steadily decreased over the years, the country still greatly relies on these sectors. Currently the growth in agriculture, as well as in the overall economy, stagnates mainly because of political volatility, economic shocks, and frequent natural disasters. FAO and major donors contribute to the development of agriculture value chains. The existing studies usually focus on selected value chains, and there are fewer sources that reveal countrywide value chain development status.

Therefore, the goal of the policy paper that is summarised here is to try to consolidate the information on countrywide value chain development gathered from various open sources and based on materials collected in field missions by FAO officers, with a particular emphasis on the potato value chain in the Issyk-Kul region. The authors did not aim at close examination of the selected value chain; rather, this paper is a general overview that will be a reference point for future research and fieldwork in the country. The recommendations provided in the paper will assist the FAO country office and the Government of the Kyrgyz Republic in decision-making and will inform other development organisations operating in the country about major value chain development activities.

To get the results, the authors analysed the legislative history related to value chains, collected materials and statistics from open sources, conducted a field mission, interviewed stakeholders, and analysed surveys done by a local NGO.

The original paper (Kyrgyzstan Value Chain Gap Analysis – FAO, 2018) examines the overall situation in Kyrgyzstan with a focus on the agriculture sector, food quality, and food safety systems. It reviews related legislation and the environment for doing business. The paper examines existing support measures for agriculture and covers the banking sector and trade policy. In addition, the paper describes main value chain actors and international development programmes. The second part of the study overviews the potato value chain in the Issyk-Kul region. The final part provides recommendations on both selected and countrywide value chain development and closely examines ways of improving seed availability, marketing, and ecological tourism. The final section also provides options for vitalisation of a non-functioning starch factory in Ak-Suu and recommends transforming logistics centres into food hubs. The recommendations are addressed to FAO, the Government of the Kyrgyz Republic, major donors, farmers and their associations, and other business entities.



Introduction & Context

Lake Issyk-Kul in autumn
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Introduction

This work is a part of a series of studies on the value chain development gaps and the environment for doing business for farmers done by FAO's Regional Office for Europe and Central Asia, Regional Initiative on Improving Agrifood Trade and Market Integration. This document is a summary of the Value Chain Gap Analysis study in Kyrgyzstan (FAO, 2018).

According to FAO's terminology, a sustainable food value chain (SFVC) is defined as “the full range of farms and firms and their successive coordinated value-adding activities that produce particular raw agricultural materials and transform them into particular food products that are sold to final consumers and disposed of after use, in a manner that is profitable throughout, has broad-based benefits for society and does not permanently deplete natural resources.” (FAO, 2014)

The research presented in this paper is based on a review of existing literature, statistical data from open sources (FAOSTAT, FAO Yearbooks, WB, UN Comtrade),¹ national data (NSC), legal data (FAOLEX, ConsultantPlus), materials collected in a field mission, and a survey of Kyrgyz farmers conducted by a local non-governmental organization in 2017. The main methodological approach of this study is a combination of a value chain gap analysis and a sustainable food value chain analysis. The approach aims to assess the constraints to growth and provide solutions to develop more efficient, inclusive, and sustainable agrifood value chains. In addition, some elements of global value chain analysis (as in Gereffi & Fernandez-Stark, 2016) and traditional value chain analysis methodologies are used.

This paper includes a summary of the main parts of Kyrgyzstan Value Chain Gap Analysis. Context analysis gives background information about the country, the summary reveals some of the value chain actors and presents development projects from international organisations in Kyrgyzstan. Finally, the summary overviews the potato value chain and provides conclusions and recommendations.

¹ The reason for using different sources of statistical data is varying quality and availability of data.

I. Context

Background

The Kyrgyz Republic is a mountainous country largely dependent on gold exports and remittances from abroad. Kyrgyzstan cultivates wheat, barley, maize, potatoes, melons, oilseed crops and other vegetables and fruits. Sugar beet is an important crop in Chui Oblast, and cotton and tobacco are important for the southern regions. In the dairy sector, Kyrgyzstan produces milk from cows, sheep and goats; meat from cattle, sheep, horses, pigs, goats and chickens; and honey. The fisheries and aquaculture sector is less developed but has demonstrated a positive trend in the past few years. Though the share of agricultural input in country's GDP in the past 10 years has steadily decreased, the agriculture sector still provides about 15 percent of the country's gross domestic product. About 30 percent of the total population is employed in the agriculture sector. The total unemployment rate in the country had been slightly decreasing from 2010 to 2015, showing good positive dynamics. Agricultural exports steadily amounted to 12 to 14 percent of total goods exports in 2010–2016. The share of imports of these goods has varied between 15 and 18 percent of total goods imports.

Access to land and water

The land is exposed to degradation and erosion and the access to land and water is limited in several regions. Access to land and quality soil is better in the northern part of the country.

Institutional and business environment

Kyrgyzstan is currently harmonizing its food safety and quality systems with Eurasian Economic Union standards. Eurasian Economic Union membership assumes the realization of a package of measures to harmonize legislation, modernise and expand the spectrum of existing quality laboratories, and ensure their accreditation with the authorised Eurasian Economic Union structures.

The Kyrgyz Republic is typical of post-Soviet states in terms of its sanitary and phytosanitary system. The key obligations related to veterinary and sanitary measures in public regulation are distributed between the *Ministry of Agriculture, Food Industry and Amelioration* and the *State Inspectorate for Veterinary and Phytosanitary Safety*.

In the past 10 years, the country has significantly improved its business environment, which is proved by the World Bank's Doing Business ranking, which listed Kyrgyzstan in the second tier of countries (Kyrgyzstan was ranked 75 out of 190 countries).

Legal environment

The legal base of the country, in theory, covers all major elements in agriculture, but it could be improved. The original report identified and examined 14 laws related to land management, logistics centres development and international trade regulation, 9 laws concerning inputs (seeds, fertilizer, artificial insemination), 6 laws about cooperatives, 16

laws regarding food safety, 7 laws addressing food security, and 7 laws about animal health. The report concludes that the legal base in the country is satisfactory, the emphasis should be given to the actual implementation of laws.

Access to finance

Access to finance in the Kyrgyz Republic is provided by the government, microfinance institutions, banks and international donors. The Kyrgyz Government provides a number of support measures to agriculture. The measures include subsidising interest rates and lowering the tax burden. Farmers who take a loan from partner banks for agricultural purposes may have a lower interest rate. Farmers pay a 10-percent interest rate regardless of the market rate (which reaches 20 percent). Farmers are exempt from paying value-added tax, profit tax, and turnover tax. They pay only land, social, and animal taxes.

The banking sector of the country is satisfactory. There are banking products targeting farmers and agriculture enterprises, but despite their relative affordability their maximum maturity is only three to five years, which is not enough to enable larger loans.

Bank loans and unofficial loans are the main forms of financing for micro, small and medium enterprises (MSMEs). Despite difficulties in lending to the sector, bank financing to MSMEs has grown as Kyrgyzstan banks begin to look increasingly at the MSME sector as a potential opportunity to diversify their lending portfolio and increase interest margins.

In 2016–2017, the monetary policy of the National Bank of the Kyrgyz Republic was of a stimulating nature. After the country's economy began slowing down in March 2016, the country's main bank has begun to lower its basic interest rates. The discount rate in 2016 decreased twofold, from 10 percent to 5 percent.

Kyrgyz major bank Aiyyl Bank O.J.S.C. offers a number of products for farmers. A subsidised interest rate makes bank products relatively affordable, but a very short maturity period limits farmers' ability to take medium and large loans.

Access to infrastructure

Infrastructure in the country requires further upgrading. Infrastructure improvement projects are being conducted by the Ministry of Agriculture, Food Industry and Amelioration, International Fund for Agricultural Development (IFAD), United States Agency for International Development (USAID), United Nations Development Programme (UNDP) and Japan International Cooperation Agency (JICA).

Support measures for the agriculture sector

The Government has a number of measures to support agriculture sector of Kyrgyzstan: subsidizing the interest rate, distribution of wheat seeds to farmers in the form of an interest-free loan, support for the production of wheat seeds, distribution of fuels and lubricants at discounted prices to farmers during the spring field works, lower tax burden for farmers, tax incentives for the business, and other measures to promote exports.

Access to seeds and planting material

Seed multiplication takes place in the Issyk-Kul and Osh regions. The state does not subsidise seed breeding and multiplication. The country has a good scientific basis for seed production, but the potential cannot be realized because of limited funding. A major challenge is a timely renewal of seed material. Access to quality seeds in the country is limited.

Cooperatives and associations

Since the collapse of the Soviet Union, Kyrgyzstan has undertaken land and agrarian reform by reorganizing former collective enterprises through distribution of land and property shares to rural residents, leading to an increased number of household plots and the emergence of new family farms. Agricultural growth in the country, which historically has been focused on the poor, has led to the redistribution of land assets to small family farms and to their subsequent accumulation of livestock assets. The majority of cooperatives in the country are production cooperatives. There are practically no service cooperatives. In 2017, the country initiated a programme on the development of a service cooperatives system. In general, Kyrgyz farmers are reluctant to form cooperatives because the notion of cooperatives is still associated with Soviet-style collective farms. The government's concept for development of the agricultural cooperative system in the Kyrgyz Republic for 2017–2021 if implemented, can improve the situation in the country. The concept provides plans for the creation of trade and service cooperatives in the country based on: 1) processing enterprises; 2) trade and logistic centres (sales and procurement offices); and 3) machine and tractor stations. More emphasis should be given to supporting and developing service cooperatives. The main approach would be raising awareness among farmers and showing successful cases.

Trade policy

Imports are dominated by wheat, tea, sugar, vegetables and fruits. Export crops include dry beans, cotton, fresh apricots, apples, potatoes, tomatoes, other fruits and vegetables, and milk. As of 2017, the country does not apply quantitative restrictions and bans on imports. In 2016, Kyrgyzstan applied tariff quotas on imports of pork (3 500 tonnes), poultry (58 000 tonnes), beef (200 tonnes) and whey (100 tonnes). To support the flour-milling industry, imports of wheat grain and the production of flour from imported wheat were exempted from 12-percent value-added tax in 2015. Duties were imposed on the exportation of unprocessed cattle and horse hides to countries outside of the Eurasian Economic Union and Commonwealth of Independent States Free Trade Area.

An important external factor that influences the country's foreign trade is the fluctuation of the Kyrgyz som's exchange rate against the currencies of its key trade and economic partners. This caused a decline in the price competitiveness of Kyrgyz-produced commodities in these export markets. The situation became more favourable for imports from the Russian Federation and Kazakhstan. Meanwhile, Kyrgyz imports from China,

the European Union and countries that have their national currency exchange rates pegged to the US dollar became more expensive.

The country is planning to concentrate on traditional agrifood export products (dairy products, fresh and processed vegetables, fruits and nuts, wool and animal skins, and cotton) as well as meat products and bottled water. Kyrgyzstan aims at three main destinations for its exports: the Eurasian Economic Union, Asian countries (China and the Republic of Korea), and the European Union.

Gender profile

The FAO study of agriculture and rural livelihoods' gender profile (2016) finds that women in Kyrgyzstan do not participate in agriculture on an equal basis with men. Although women are engaged in agriculture in all sub-sectors, the study concludes that women's contributions along agricultural value chains are not visible.

A landscape photograph showing a valley with snow-capped mountains in the background. In the foreground, there is a herd of sheep grazing in a field, with a person standing nearby. The sky is overcast with grey clouds. The text 'Major value chain development programmes' is overlaid in the center of the image.

Major value chain development programmes

Prospective location for placing
a multimodal logistics centre
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II. Major Value Chain Development Programmes

The Ministry of Agriculture and Land Amelioration and the Ministry of Economy and Antimonopoly Policy are the main state value chain development actors in Kyrgyzstan. A number of institutions under these ministries help improve the situation in the agriculture sector. Access to finance and markets are provided by state, private and international organisations. The Ministry of Agriculture, International Fund for Agricultural Development (IFAD), United States Agency for International Development (USAID), United Nations Development Programme (UNDP) and Japan International Cooperation Agency (JICA) have infrastructure improvement projects in the country. Access to seeds is one of the major problems in agriculture production, especially with regard to potato production; the World Bank addresses this problem. Access to knowledge is provided by the majority of the value chain actors in the country.

The presence of international development organizations in Kyrgyzstan is sufficient – in a way, even excessive. The organizations are targeting different sectors of the economy, in several cases complementing each other’s activities. Main challenges and areas of work for international organizations are poor infrastructure and higher risks of conflict.

In this section the authors list major value chain development activities conducted by international development organisations.

International Fund for Agricultural Development (IFAD)

IFAD has contributed to the development of the local pasture management system and the development of the livestock market. Its project has been implemented since 1996 in three stages. During the first stage (1996–2007), pasture committees were formed, and in the second stage (2007–2017) they were strengthened. The third stage, which starts in 2018, will target the development of selected value chains to improve access to market for the established pasture committees and farmers. Thus, three IFAD projects logically follow each other: 1) create committees; 2) strengthen committees; and 3) develop markets (value chains).

World Bank

The World Bank projects focus on improving irrigation infrastructure and water usage as well as improving nutrition. Besides, the World Bank implements *Community seed funds project* that aims to supply farmers with high-quality seeds to improve the productivity of their businesses. Farmers were provided with certified seeds of potato, alfalfa, sainfoin, maize, spring barley, and winter wheat, as well as fertilizers. The World Bank developed 502 self-help groups with 3,474 members in 118 villages across the country. They were

provided with certified seeds of tomato, cucumber, carrot, onion, cabbage, red beet, and potato, depending on demand and the preference of each group. Except for potatoes, yields are reported to be substantially higher than before the project. In addition, the World Bank provided trainings to farmers.

The *Community seed funds programme* in potato sector has a point that is subject to improvement: the reproductivity vigour of potato seed is only three years (in case of super elite variety, four years), therefore, when the project stops, the farmers' access to new seed stock will be limited.

Japan International Cooperation Agency (JICA)

JICA has a programme for supporting vegetable seeds production for export promotion, and it is involved in the development of logistics centres in Kyrgyzstan. JICA also supports the formation of cooperatives, and it provides trainings to cooperative members.

Korea International Cooperation Agency (KOICA)

KOICA's assistance in the Kyrgyz Republic covers fields such as governance, public administration, agriculture and rural development, health and education. Kyrgyz experts and farmers go to the Republic of Korea for training.

The following projects have been and are implemented by KOICA: *Land Information System* (2015–2017), *Strengthening the Capacity of Forest Conservation of the Kyrgyz Republic* (2012–2015), *My Village Project in the Kyrgyz Republic* (planning stage), and KOICA Fellowship Program to share technical skills and knowledge as well as to build capacities for sustainable socio-economic development.

United States Agency for International Development (USAID)

The USAID has two major projects in Kyrgyzstan: *Agro Horizon Project* and *Farmer-to-farmer*. Agro Horizon project started in October 2014 and will finish in September 2018. The project aims to increase smallholder farmers' incomes by improving productivity, expanding markets, and creating private, sector-led partnerships to increase competitiveness in selected agricultural value chains. Farmer-to-farmer project is being implemented in the period October 2013 to September 2018. It addresses the fragmentation of the agricultural production base in Kyrgyzstan, which continues to prevent the region's farmers and agribusinesses from reaching the scale necessary for efficient production. Most production comes from small farms, which yield produce of inconsistent quality and in quantities that are too low to meet market demand. The project brings technology transfer innovations through U.S. agricultural specialists. End results include improving the trade of fruits and vegetables, improving livestock production, encouraging import substitution with food processors, and enhancing input supply channels to increase productivity and thus allow profitable access to known domestic and regional markets.

United Nations Development Programme (UNDP)

The UNDP, in cooperation with national partners, is implementing the *Integrated Development in Osh Oblast, Kyrgyz Republic programme*. The programme, which focuses on creating economic opportunities for high-risk groups and communities, is expected to reduce the risks of conflicts and their vulnerability in the short and medium terms. The programme tries to diversify economic activities; improve access to water, employment and rehabilitation of the socio-economic infrastructure; and establish a more sustainable use of resources.

European Union

In general, the European Union is engaged in bilateral cooperation with Kyrgyzstan regarding education, the rule of law, and rural development. The European Union delegation mainly focuses on the southern part of Kyrgyzstan. They were working on several value chains – in particular, plum, apple, apricot and rice – and they studied water management. The European Union delegation cooperates with both international and local development organizations. They are planning to focus more on poverty reduction in the Jalal-Abad region. They have provided high-quality potato seeds in Botken Oblast.

Food and Agriculture Organization of the United Nations

FAO in 2017–2018 is focused on strengthening the value chains of beans, fish and potatoes. Earlier, FAO worked on the dairy and sheep value chains.

A group of FAO consultants examined a kidney beans value chain and provided recommendations on the improvement of the kidney beans sector. A local NGO conducted the potato value chain analysis, and the current study contributes to the development of potato and other value chains.

The three parties – Kyrgyzstan, Finland and FAO – have agreed to extend the project regarding the aquaculture development in Kyrgyzstan for additional two years (2018–2019). Kyrgyzstan started collaborating with FAO on aquaculture in 2009, with the help of funding provided by the Government of Finland. Several improvements have been made since then: Aquaculture farmers' associations have been established, four small-scale trout and carp hatcheries were built to supply fingerlings, and three feed mills were constructed to make affordable and nutritious feed available to the small-scale farmers. The facilities are now operational, and fish production has started, but improvements could be made regarding farmers' technical knowledge of managing the hatcheries and feed mills, as well as basics of fish farming. Therefore, FAO built up the agricultural business skills of 120 fish farmers. More effort on creating the demand for fish in the country is required.



Potato value chain in Issyk-Kul region

Lake Issyk-Kul in autumn
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III. Value Chain Overview - Potatoes in Issyk-Kul Region

The authors conducted a two-day field trip to examine the status of the potato value chain in the Issyk-Kul area. They visited farms, associations, cooperatives, storage facilities, and a starch factory and interviewed stakeholders. The authors did not aim at comprehensive examination of the value chain. The main goal was to assess the status of the potato and related value chains and identify areas for future work.

Potatoes have a long history of cultivation in Kyrgyzstan, centred mostly around the Issyk-Kul region. In 2015, potatoes were grown in the Issyk-Kul region on an area of 27 770 hectares. In general, the cultivated area in the period of 2006–2015 expanded countrywide while decreasing in Issyk-Kul Oblast, which contained 32.9 percent of the total cultivated area in 2015. Issyk-Kul Oblast in 2015 provided about 35 percent of total potato production in the country. Its share of production had been gradually decreasing, from 50 percent in 2006 to 35 percent in 2015. The decrease was compensated by Jalal-Abad and Osh oblasts, where the production of potatoes significantly increased during that timeframe.

One of the major problems in the potato value chain is access to quality seeds. Farmers usually continue using seeds long after their productivity vigour is lost. Farmers cannot afford quality seeds, and they receive only a limited support from international donors and the government.

The most widespread pests reported were Colorado potato beetle and wireworm. In terms of potato diseases, farmers named late blight (*phytophthoroz*), rot caused by *Phytophthora capsici* bacteria (*chernaya nozhka*), and potato nematodes. Farmers use mineral and organic fertilizers. Some of the farmers used chemical substances (herbicides). Only a few farmers used biological substances; others did not use them, reporting that they were too expensive or not available, meaning that there is a lack of supply.

The vast majority of the cooperatives in the country are production cooperatives, the potato sector is not an exception. Farmers usually are not aware of forms of cooperatives other than the production cooperative. Though service cooperatives are significantly much wider spread and have proved to be a more effective form of association. The original report studied two potato cooperatives – the production cooperative *Kochkor Logistics* and the service cooperative *Agroleader*.

As of 2017, only a limited number of fried potato and potato chip processors operated in the country. Farmers usually are neither aware of processors nor of where processors buy products. Farmers sometimes sell potatoes that are suitable for processing (e.g. for making fried chips) at lower prices than those on the market. Farmers are not aware of

the future use of sold potatoes, therefore because of the incomplete information they miss opportunities for selling their potatoes at higher prices.

In the village of Teplokluchenka in the Ak-Suu district, the *Tunuk-Kurulush* construction company recently built a potato-processing factory financed by investors from the Republic of Korea. The factory has not functioned since 2015. The reason is unclear. The authors developed options for starch factory vitalization that can be found in Annex 2 of the original report. Farmers in the Ak-Suu district who were interviewed expressed their interest in supplying the factory with their potatoes.

The authors conclude that links between producers and processors in the potato value chain currently are not optimal or not established, and the starch factory requires the attention of the government and international organizations to begin operations. Besides the starch factory, there is only a small number of potato processors (fried potato producers) that were not studied in this paper.

Farmers harvest potatoes in October and store them until spring, but in some cases only until February. Farmers only sell all or part of their harvest in February when they need money. They try to store their harvest until April or May to sell potatoes when prices are most favourable. The authors observed storage facilities with capacities varying from 5 to 120 tonnes. Most of them are traditional underground cellars. The conditions of cellars vary; most of them are sound but could use some improvement.

Farmers store and sell their potatoes in Chinese bags bought at the market. The potatoes are usually not sorted; bags contain potatoes of different sizes and sometimes of different varieties. No marketing of potatoes at the farm level was observed by the authors. The original report highlights some other marketing examples (fresh juice, beans).

The Government of the Kyrgyz Republic, in cooperation with international partners, is constructing 15 local, seven regional, and two international logistics centres. The authors suggest that energy efficiency and the rationale for using logistics centres should be studied further. The authors recommend elaborating logistics centre concepts with additional services and functions to develop high-grade food hubs. Though logistics centres are multifunctional, they do not provide a platform for social interaction and have less focus on food services. In practice, logistics centres provide a good base and can be easily transformed into food hubs. A food hub is a centrally located facility with a business management system that facilitates the aggregation, storage, processing, distribution and marketing of locally or regionally produced food products and serves as a knowledge-sharing and agricultural-skills-training platform and supports agricultural microenterprise project planning. Food hubs provide easy access, opportunity and viability for small producers and low-income consumers, along with a platform for social interaction, capacity building and knowledge sharing

The potatoes produced in the country are mostly sold fresh. Farmers themselves sell potatoes to vendors in city markets, or intermediaries buy potatoes from farmers and sell

to wholesalers and retailers. Restaurants and cafes buy potatoes in the wholesale markets and from retail stores.

In 2015-2016 the total exports and production of potatoes decreased. Such a fall is mainly associated with the decrease in Kazakhstan's importation of potatoes. Given the significant dependence of Kyrgyzstan exports on the Kazakh market, any interruptions in exports to Kazakhstan are associated with severe consequences for the majority of actors in the Kyrgyz potato value chain. Improving phytosanitary standards and improving access to high-quality seeds would help find new export markets and ensure uninterrupted exports to Kazakhstan.

Potato value chain overview conclusions

General:

- Farmers do not suffer from land degradation in Issyk-Kul region;
- Farmers in Issyk-Kul Oblast do not experience problems leasing land;
- Farmers grow other crops in addition to potatoes;
- In some areas, the labour supply is insufficient; and
- Logistics centres may be transformed into food hubs.

Production:

- Potato seed, especially quality seed supply, is inadequate;
- Value chain of organic fertilisers requires improvement;
- Some farmers aim at obtaining an organic certification, but the procedure is very difficult; and
- Recent Kyrgyz-Kazakh border closures have negatively affected Kyrgyz potato producers.

Cooperatives:

- Individually, farmers are not able to export, and they have less potential for selling potato in the domestic market; a so-called "small commodity production" (*melkotovarnoye proizvodstvo*) prevails and is considered a big obstacle by farmers;
- Cooperatives have a bad name, inherited from the Soviet period; Kyrgyz farmers have no trust in this form of collaboration; and
- Cooperatives are still formed as production cooperatives rather than as service cooperatives.

Processing:

- There is a lack of processing;
- Farmers are willing to process their potatoes; and
- The linkage between existing processors and farmers is not optimal – farmers sometimes are not aware that they sell their potatoes to the processor, which allows processors to buy more expensive varieties suitable for processing at a lower price.

Storage:

- Farmers often store their harvest in traditional underground cellars, and the potatoes are usually not sorted;
- Most of traditional potato storage facilities are basically sound but could use improvements;
- The rationale behind the use of logistics centres should be further studied; and
- In case of logistics centres development, expansion of logistics centres into food hubs is recommended.

Post-farm:

- Farmers sell a part of their harvest to cover harvesting costs, and the rest is kept for own consumption; what remains is sold out when the price is favourable.

Access to market and finance:

- Farmers have limited access to market information; and
- Access to finance is a subject of improvement.

Access to training:

- Farmers have access to training provided by international organizations, and potato farmers could have more trainings regarding business skills and cooperative development.

Marketing:

- The marketing of potatoes is poor or there is no marketing at all;
- Farmers usually do not sort their potato; and
- The area has a big potential for ecotourism development, which is not utilised;

Gender aspects:

- Men are owners of farms, and women's contributions are difficult to assess; and
- Though the role of women is less visible, the observations based on interviews show that women demonstrate capability in managing businesses and resolving problems in their communities.

Main disruptions in the value chain:

- climatic conditions;
- soil contamination and potato diseases; and
- Kazakh border closures.



Conclusions & Recommendations

Mountainous landscape
in the Issyk-Kul area
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IV. Conclusions and Recommendations

a) Conclusions – Status of the Development of Value Chains

- Too many laws are outdated or inconsistent with existing legislation related to business.
- Non-optimized relations in the market chain: producer–buyer–processor–implementer–consumer. Links in this important chain in Kyrgyzstan are not well established.
- Lack of a functioning market infrastructure in the industry. The infrastructure that was developed and that had functioned in the planned economy is destroyed, and the modern market infrastructure has not been fully developed.
- Lack of innovative technologies in the fields of plant and animal production, post-harvest, technology and marketing.
- Science and research are not well-connected to the agricultural sector.
- Kyrgyzstan has knowledge and research capacities for the multiplication, selection and modification of quality seeds but has limited production capacity to satisfy farmers' needs.
- There is a lack of laboratories in the country, and the situation is especially difficult in the Batken region.
- The country has scientific capacities, but the lack of funding does not facilitate connecting science to the business sector.
- In the institutional setup of the sanitary and phytosanitary system, there is a tendency for merging bodies in an attempt to improve the efficiency of the system and reduce costs.
- There is a very limited budget for conducting veterinary audits, in particular laboratory examinations and inspections of sanitary and phytosanitary objects.
- Internal phytosanitary safety is not sufficient. The relevant governmental authorities focus on controlling the quality of exported products and have less capacity for inspecting imported products and internal markets. This negatively influences internal food safety and creates more risks for people's health.
- Food safety standards are being harmonized with the Eurasian Economic Commission standards.
- Deliveries of raw meat and livestock from Kyrgyzstan to the Eurasian Economic Union are limited, and this eliminates a potential export market. Supplies will be improved with the introduction of an electronic animal and raw meat identification system.
- Lack of processing leads to low growth of surplus value of agricultural products produced. Because of insufficient development of the processing industry

agricultural products produced in the country are realized in an unprocessed form; as a result, farmers and the country lose income.

- Border control issue on the Kyrgyzstan-Kazakhstan border.

b) Recommendations for Future Value Chain Development

1. Recommendations to state bodies

a. Legal Environment

- There are more than 15 000 laws related to business, and many of them are outdated or inconsistent with existing legislation. Therefore, it is recommended that the government simplify legislation and introduce codified laws.
- Though in 2016, veterinary-sanitary inspection regulations were attempted to be improved, additional attention to the implementation should be given. In particular, inspection of goods for export should not be conducted at the expense of careful inspection of imported goods.
- In general, legislation related to agriculture in Kyrgyzstan is adequate, but the implementation could be improved.

b. Business Environment

- Raise awareness among farmers on forms of cooperatives and associations, promote service type of cooperation.
- Attend to the non-functioning starch factory in Ak-Suu and collaborate with international organizations to identify possible solutions. The vitalisation would satisfy the country's demand in starch and would allow country to export starch. The authors identify the following potential markets for Kyrgyz starch: China, Kazakhstan, the Republic of Korea, and the Russian Federation. The original report proposed options for the vitalisation of the starch factory (See Annex 2). The options include contract farming and organisation of farm schools with demonstration fields.
- Elaborate logistics centres with additional services and functions to develop high-grade food hubs. Food hubs will increase small- and medium-sized producers' access to wholesale market channels. The problem of the insufficient amount of phytosanitary control laboratories may be addressed by moving local and regional laboratories to relevant food hubs, creating a phytosanitary control facilities chain. A food hub should also contain seed-distribution centres and stores that sell seeds, certification agencies and customs offices. Having rooms for training will allow the delivery to farmers of trainings that build agricultural and business skills.

c. Post-Farm

- Raise awareness among farmers on certification.
- Raise awareness among farmers on export opportunities.

d. Production Support (inputs)

- Farmers require quality seeds, and supply should be supported, otherwise the potato harvest will continue to degrade and the crop will be more prone to diseases. Seed base should be renewed every 3-5 years.
- Seed breeding and multiplication requires governmental subsidies.

e. Access to Finance, Infrastructure, and Civil Society

- Revisit bank financial products and measures of support.
- Increase the maximum maturity of subsidized credit products to allow farmers to take larger loans.
- Regulate the maximum interest rate for microcredit, raise awareness of farmers on the calculation of interest rate and microcredit loans risks.
- Improve access to finance and knowledge for organic-aimed farms.
- Raise awareness among farmers in the areas suitable for ecotourism and support farmers' initiatives regarding developing ecotourism on their farms.

2. Recommendations to farmers and their associations

- Taking into account the bad image of the word “cooperative” in Kyrgyzstan, inherited from Soviet times, the formation of associations instead of cooperatives is more preferable.
- Farmers in attractive areas should consider developing ecotourism.
- Farmers in Ak-Suu, in case production is initiated at a local starch factory, may start an *association (or cooperative) of starchy potato producers* that can be supported within the implementation of Government Decree 237 “About of the approval of the Concept of development of agricultural cooperative system in the Kyrgyz Republic for 2017–2021”.

3. Recommendations to the Ak-Suu Starch Factory management

- Research market opportunities.
- Research varieties suitable for starch production and geographical-climatic conditions in Kyrgyzstan (such varieties as Eurostarch, Kuras, and Karuzo may be considered), and consult with seed producers like Agrico, Solana, HZPC, and Europlant Pflanzenzucht.
- In cooperation with FAO and local authorities, conclude a contract with farmers on seed supply to vitalize the production of starch.
- Procure seeds and supply them to farmers.

4. Recommendations to development organizations

Food and Agriculture Organization of the United Nations (FAO)

- Assist the *State Inspectorate for Veterinary and Phytosanitary Safety* in building the capacity of its district inspectors.
- Examine existing phytosanitary issues in the country; in particular, assess the issue of soil contamination (mapping was requested).
- Raise awareness among farmers about plant and animal health, and, through workshops, build their capacities to identify diseases and alert the relevant authorities.
- Raise awareness among farmers on forms of cooperatives and associations, and showcase successful examples.
- Vitalize production of the starch factory in Ak-Suu through the Technical Cooperation Programme Facility, and consider exit strategies.
- In a possible collaboration with the World Bank, develop a new project on potato seed distribution in Kyrgyzstan.
- Support the improvement of traditional potato storage facilities in the country.
- Support the development of greenhouses in the country.

Korea International Cooperation Agency (KOICA)

- Consider participation in vitalization of the starch factory in Ak-Suu.

Japan International Cooperation Agency (JICA)

- Raise awareness among farmers on the existing forms of cooperation, and emphasize the development of service cooperatives.
- Focus on supporting service cooperatives rather than production cooperatives.
- Conduct a study on the energy efficiency of logistics centres.

World Bank (WB)

- Revisit the Community Seed Funds project and take into consideration the limited reproduction vigour of potato seeds. For example, seeds that were purchased three to four years ago have already lost their reproduction vigour.
- In a possible collaboration with the FAO, develop a new project on potato seed distribution in Kyrgyzstan to help farmers renew their seed stock.

5. Specific value chains requiring further study/support

- Honey countrywide; wool in Narin Oblast;

- Demand for the study of the value chains of other fruits and vegetables in Issyk-Kul and Batken oblasts.
- Carp and trout countrywide, as well as the development of a strategy for the increase in fish demand in Kyrgyzstan.

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