

Report No: AUS0000211

Central Asia

China (and Russia) 2030 - Implications for Agriculture in Central Asia

Phase 1 & 2 results

June 8, 2018

AGR



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- Eurasian Center for Food Security (Russian Federation), that provided both research and funding support, and
- IFC

Executive summary

- Central Asia (CA) has for centuries occupied a position of strategic importance in trade between East and West. Talk of reviving a modernized “Silk Road” to Europe, as well as the burgeoning markets of South Asia and Russia, underscore the opportunities for the countries of this region to take advantage of global trade as an engine of development for their economies.
- Most agri-food export from CA continues to go to Russia. Yet, the long-term demand for most agri-food there is projected to remain modest or even decline. On the other hand, population growth, rising incomes, urbanization, and changes in consumer preferences in China will result in an ever-growing demand for food in the future. Fueled by the strong economic growth and rapid urbanization, China’s growing and increasingly more affluent middle-class consumers are shifting their dietary preference to more protein, more diverse, healthier and higher quality foods. China is, therefore, attractive for CA countries to diversify their agri-food exports and potentially enjoy higher export revenues.
- The IMPACT’s model used in this study confirms the rising demand for higher value agri-food products in China at least until 2030. This is very useful. Enabling CA countries to convert their natural/endowment advantages into competitive advantage in specific export markets requires complementary investments in processing, logistics, trade/export infrastructure, both hard and soft. The long-term forecast of strong demand provides a helpful scenario to plan/justify investments by CA countries for export-oriented development of their agricultural sectors. Based on international experience, this should generate a sustainable source of value-addition and jobs.
- Post-2030, ageing and declining population as well as slowing income growth will largely contribute to declining food demand in China for all major agri-food categories, except for milk, sugar and pulses. Thus, looking beyond China and penetrating to the EU and other markets needs to be included in a long-term trade diversification strategy of CA countries.
- The objective of this study is to deepen CA governments’ understanding of the opportunities that may be created by the evolution of the Chinese (and Russian) economies over the next 30 years and to provide insight into how agriculture and the food industry in CA would need to be reshaped to respond to these opportunities.

Executive summary (cont.)

- The findings of the stakeholder consultations and comparative advantage analysis show that CA countries (exc. Kazakhstan and Turkmenistan) have a strong export potential in several horticulture products, including grapes, apricots (fresh and dry), plums (fresh and dry), walnuts, and cherries. In addition, Kyrgyzstan has a strong potential in becoming competitive in milk exports.
- For Kazakhstan, the commodities that are (or can become) competitive in Chinese markets include wheat, sunflower seed, and rapeseed. Moreover, the additional commodities were suggested by the national experts to be further analyzed, including beef, lamb, dry peas, and sunflower oil.
- While Kazakhstan is already an active agri-food exporter to China, other CA countries have very limited exports of their horticulture products to China. Most of the current exports remain regional and are destined for Kazakhstan and Russia. Constraints on further increasing exports to both Russia and China are to be analyzed in the next phase of the study.
- To realize their export potential, the CA countries would need to overcome a number of constraints, identified during the stakeholder interviews and literature review, including production and processing constraints (i.e. low yields, lack of cold storage facilities, insufficient irrigation), technical barriers (i.e. lack of adequate SPS capacities) and institutional constraints (i.e. cumbersome customs procedures and limited export promotion efforts at the national/regional level).
- The upcoming Phase 3 of the analytical work will study these constraints for selected products and provide regional and country-specific recommendations, especially on how to convert natural/endowment advantages into competitive advantages in targeted markets.

Study objective

- The **objective** of the study is to improve Central Asian (CA) governments' understanding of opportunities for their agri-food exports into Chinese markets, driven by growing domestic demand, pressure on natural resources and rising rural wages in China, and examine how agriculture in Central Asia could take advantage of these opportunities.
- The scope of the study was further expanded to analyze the opportunities for increasing exports to Russia.
- Results presented here include food demand growth projections for both China and Russia, as well as export potential assessment for the products most relevant for the Chinese markets. Further analysis of the products destined to the Russian markets is proposed to be conducted in the Phase 3 of the analysis.

Study description

The study consists of 3 stages:

- **Stage 1 (completed)**: Use IFPRI IMPACT model to identify agri-food products for which Chinese (and Russian) demand will likely exhibit strong growth until 2050 and provide market opportunities for imports from CA countries.
- **Stage 2 (completed)**: Through stakeholder consultations and comparative advantage analysis make a preliminary identification of particular product value chains in which CA countries have a strong potential to become competitive in the Chinese markets.
- **Stage 3: (FY 2019)** To identify determinants of competitiveness for the selected agri-food value chains in the CA countries and suggest policy reforms and investments that could enhance their competitiveness and support the expansion of production and exports for these products.

Chinese and Russian markets represent prime opportunities for the agri-food sectors of CA

- ❑ Rising incomes will lead to steeply rising demand for food (especially for high-value food)
 - China - Real GDP per capita to triple by 2050
 - Russia - Real GDP per capita to double by 2050

- ❑ Central Asia well-positioned to supply Chinese and Russian demand for food
 - Geographical proximity
 - Untapped yield potential in many crops
 - Good growing conditions for highly demanded food products
 - Potential for policy reforms to boost to private sector investment – leading to expanded agricultural production

AGRI-FOOD TRADE IN CENTRAL ASIA: AN OVERVIEW

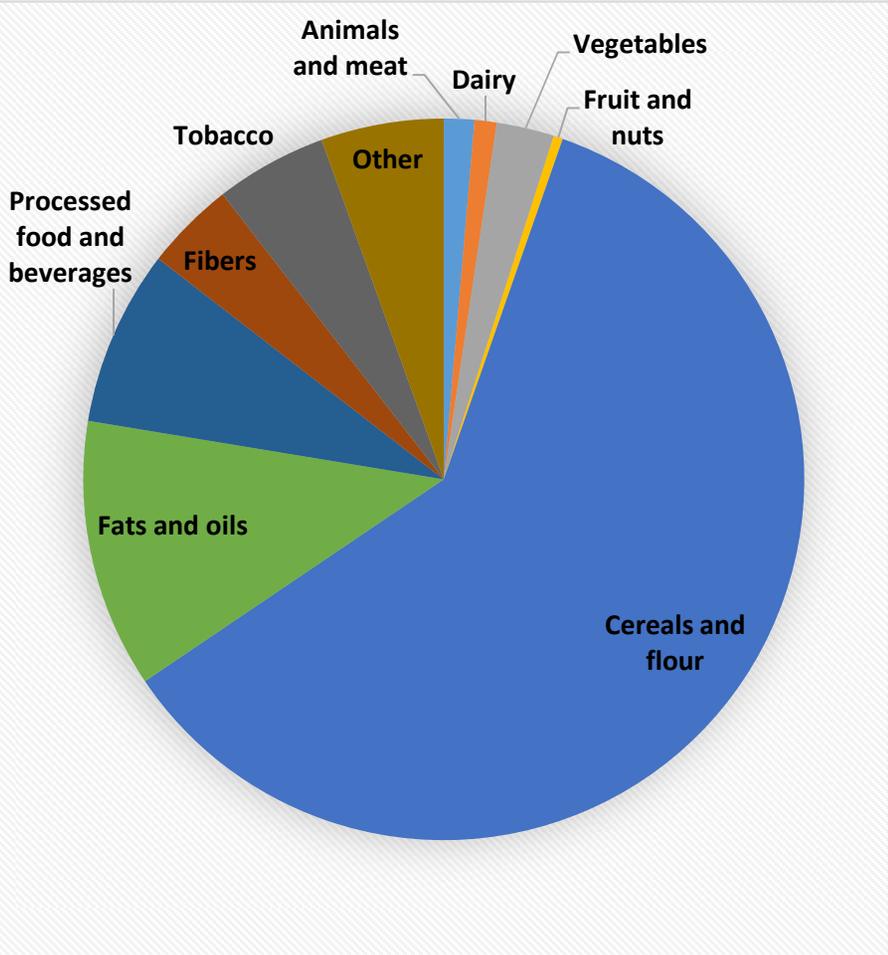


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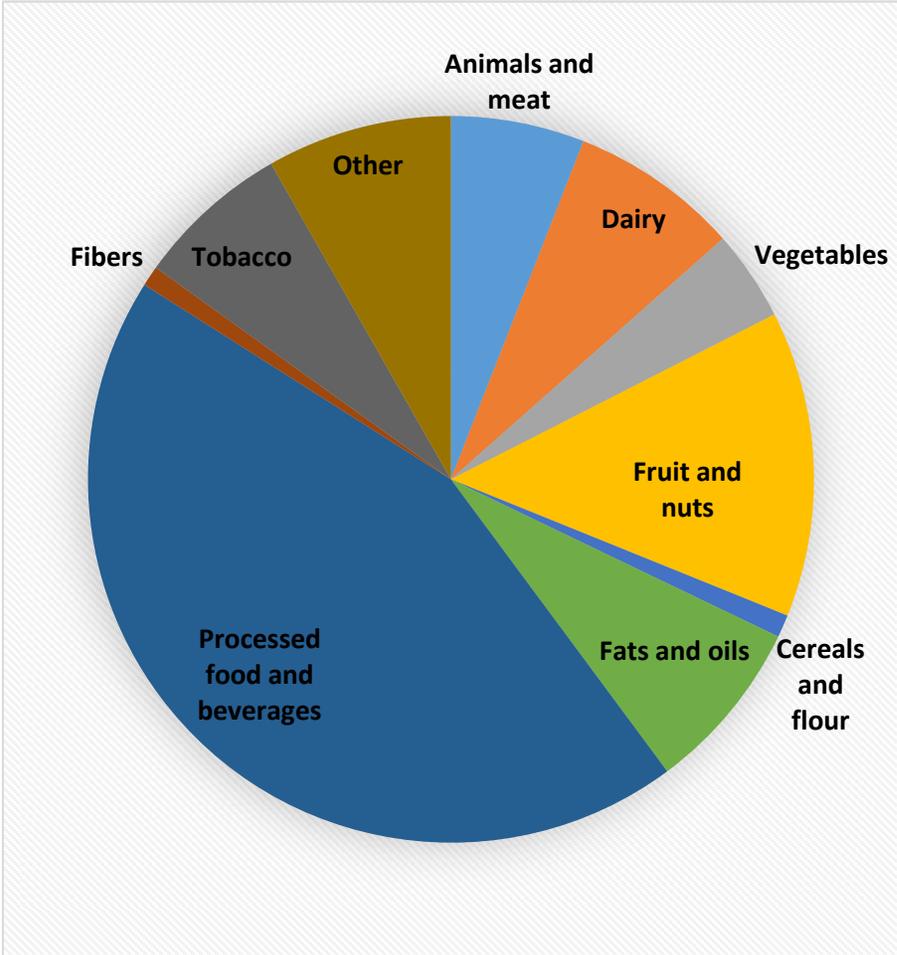
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Structure of agricultural trade in Kazakhstan

Exports, 2016



Imports, 2016



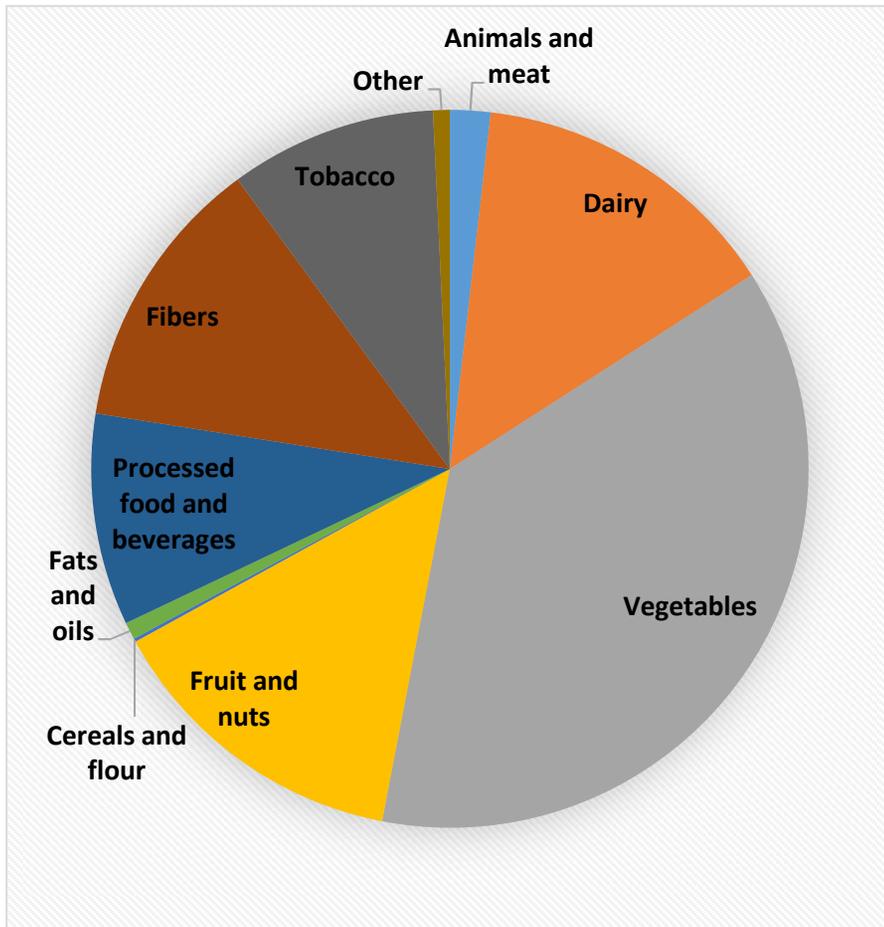
Total value 2.2 billion USD

Total value 3.1 billion USD

Source: ITC, 2016

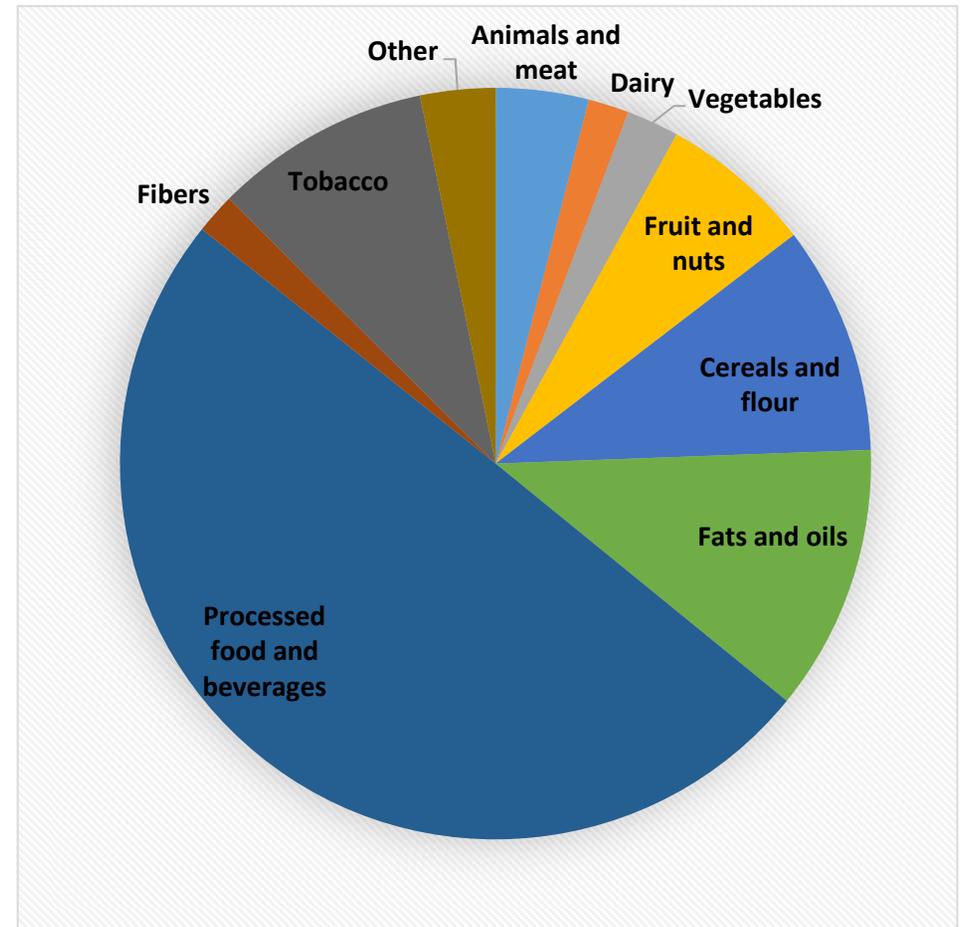
Structure of agricultural trade in Kyrgyzstan

Exports, 2016



Total value = 167 million USD

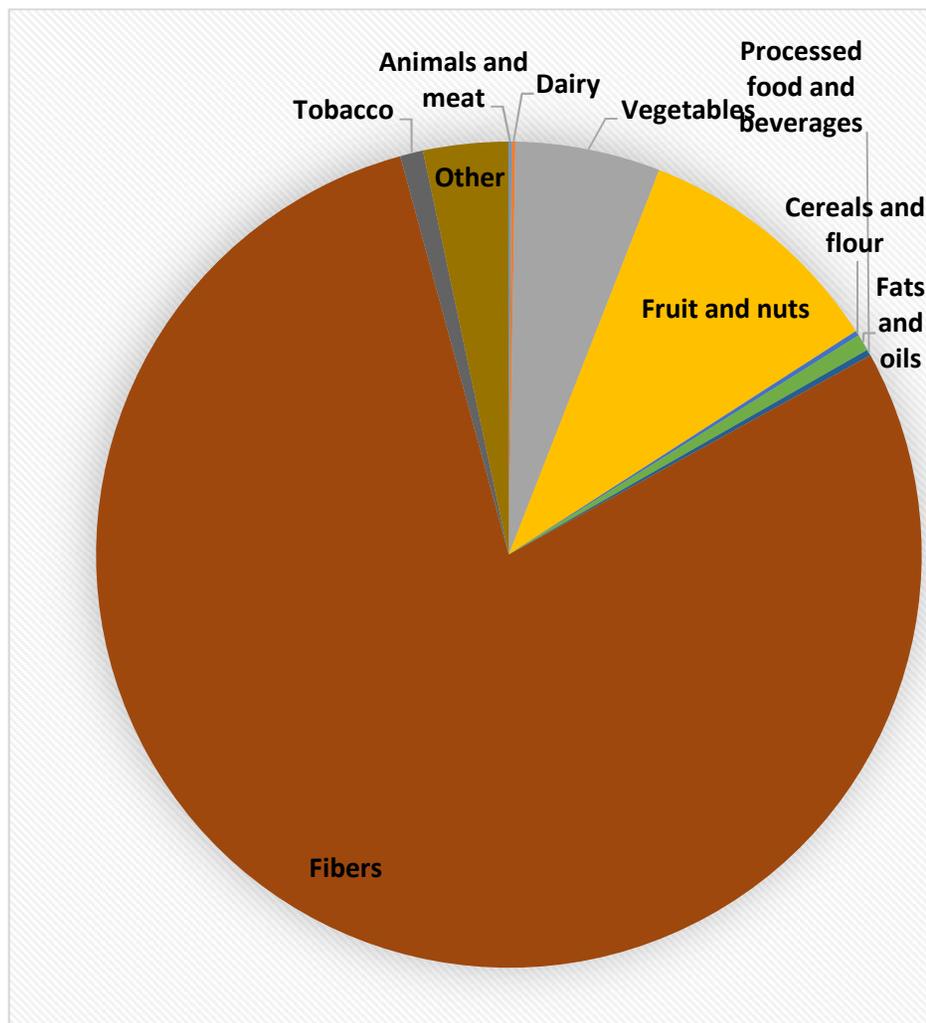
Imports, 2016



Total value = 470 million USD

Structure of agricultural trade in Tajikistan

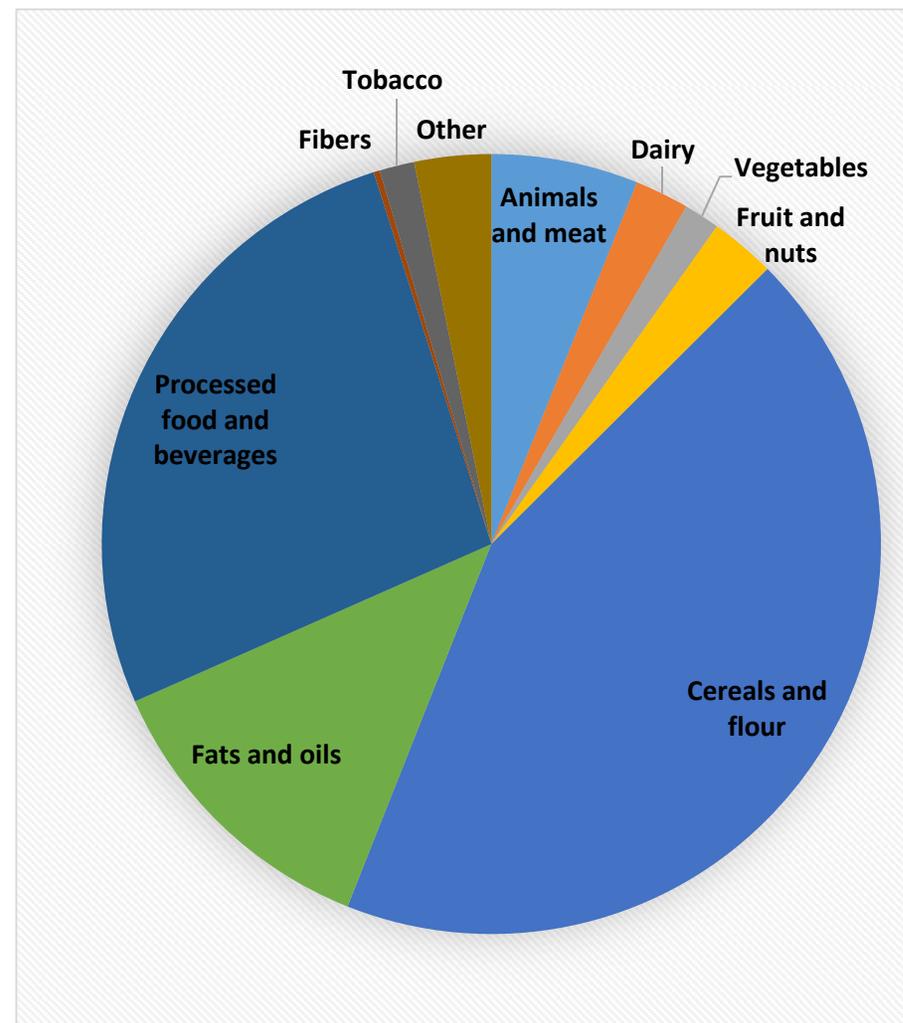
Exports, 2015



Total value = 201 million USD

Source: FAO, 2017

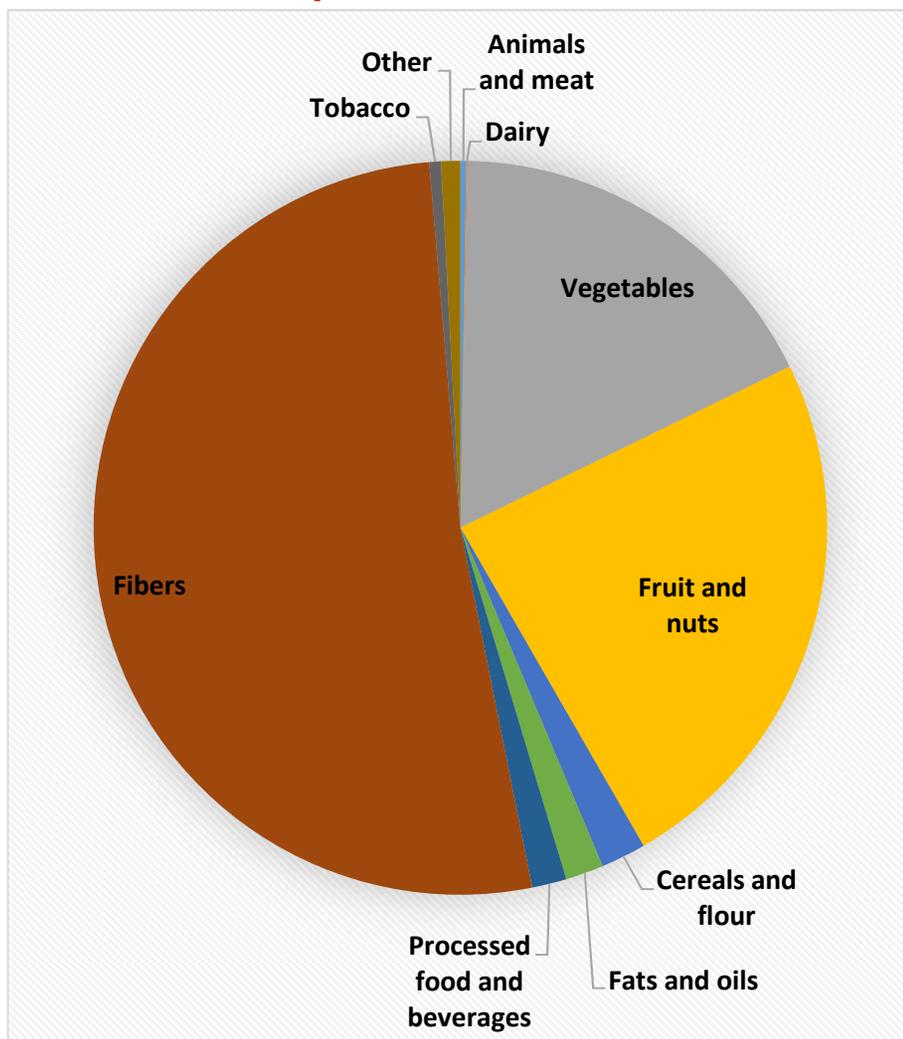
Imports, 2015



Total value = 811 million USD

Structure of agricultural trade in Uzbekistan

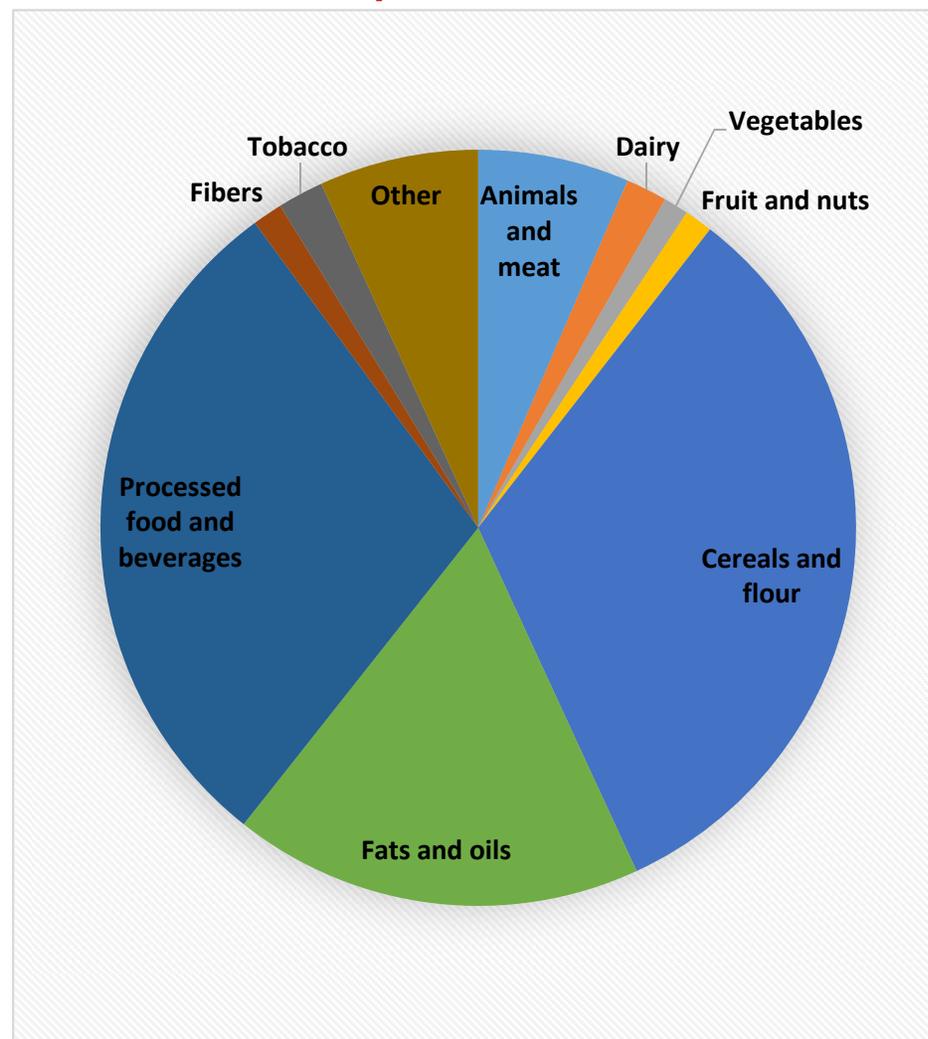
Exports, 2015



Total value = 2.7 billion USD

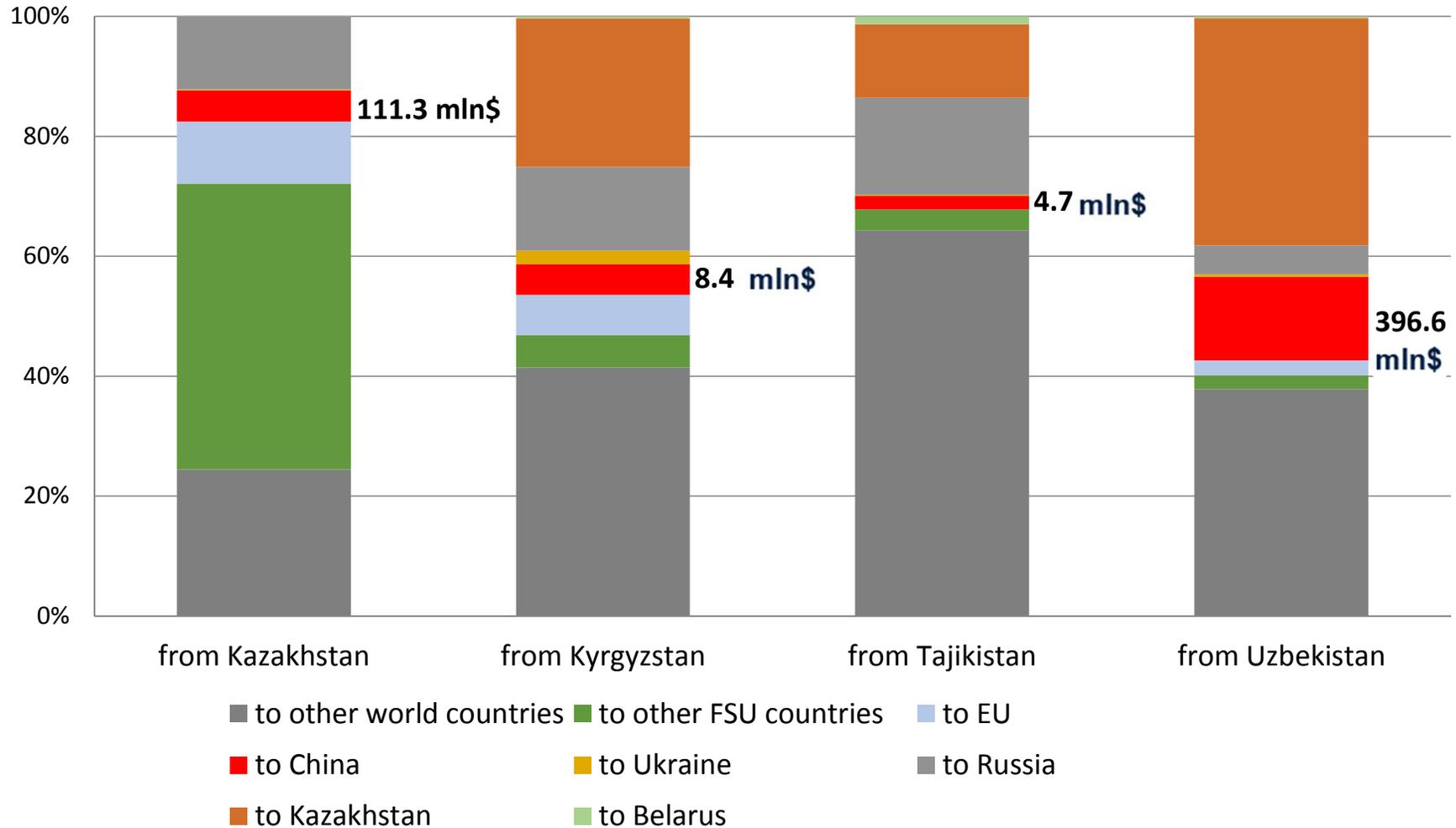
Source: FAO, 2017

Imports, 2015



Total value = 1.7 billion USD

Geography of agricultural trade in Central Asia, 2015



Source: FAO, 2017

PHASE 1: RESULTS



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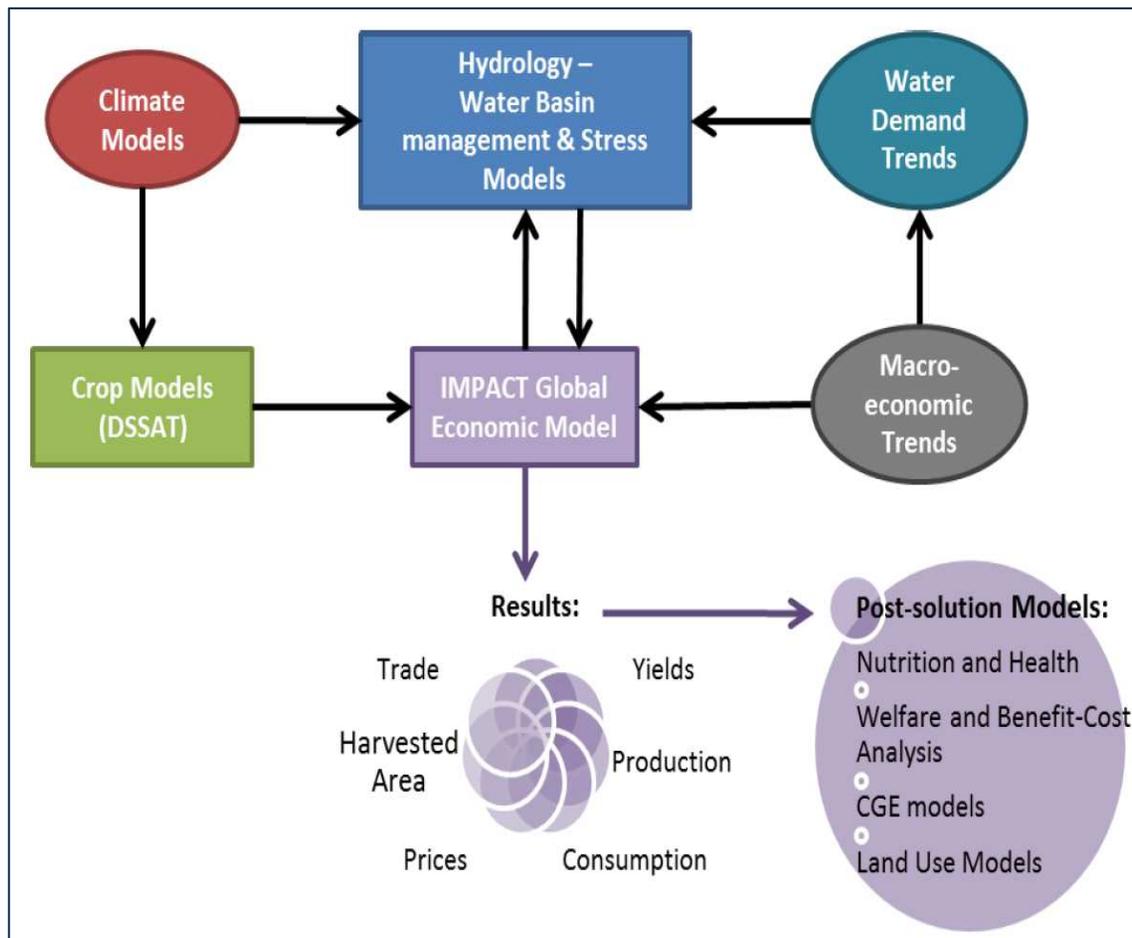
Phase 1

- **Goal:** Use IFPRI IMPACT model to identify agri-food products for which Chinese (and Russian) demand will likely exhibit strong growth until 2050 and provide market opportunities for imports from CA countries.

IFPRI IMPACT model

IMPACT is a partial equilibrium agriculture sector model designed to examine alternative futures for global food supply, demand, trade, prices and food security.

IMPACT 3: Basic Model System



Model coverage:

159 countries

154 water basins

320 food production units

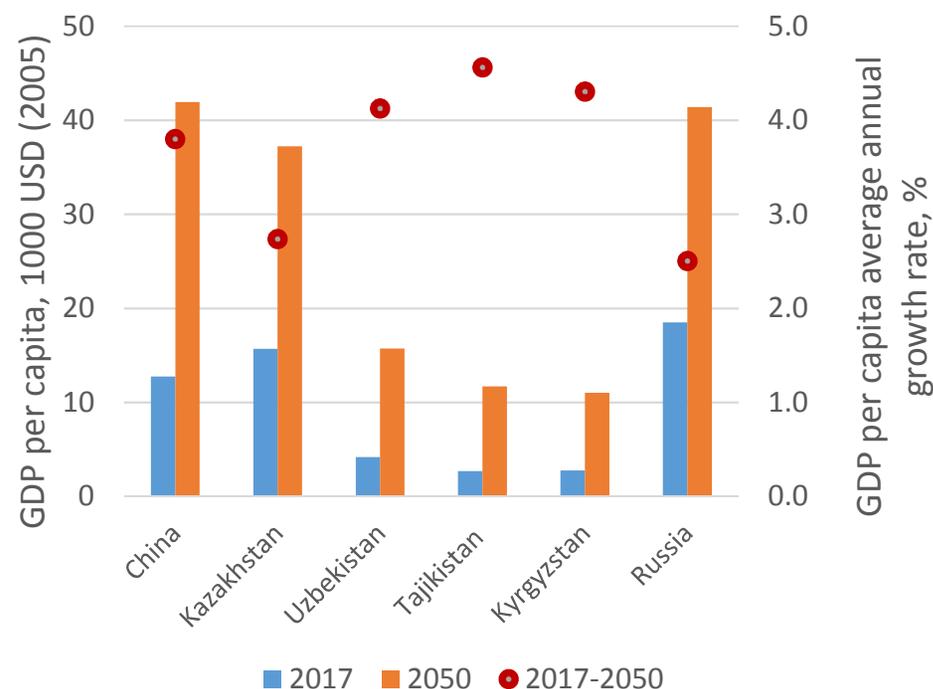
58 agricultural commodities

IMPACT socio-economic assumptions

Projected population growth*

	Population, mln.		Average annual growth rate (% per year)
	2017	2050	2017-2050
	China	1,377.8	1,273.2
Russia	142.4	136.7	-0.1
Central Asia (exc. Turkmenistan)	59.0	68.1	0.4
Uzbekistan	29.4	33.5	0.4
Kazakhstan	17.2	20.2	0.5
Tajikistan	7.4	8.0	0.3
Kyrgyzstan	5.7	6.4	0.4

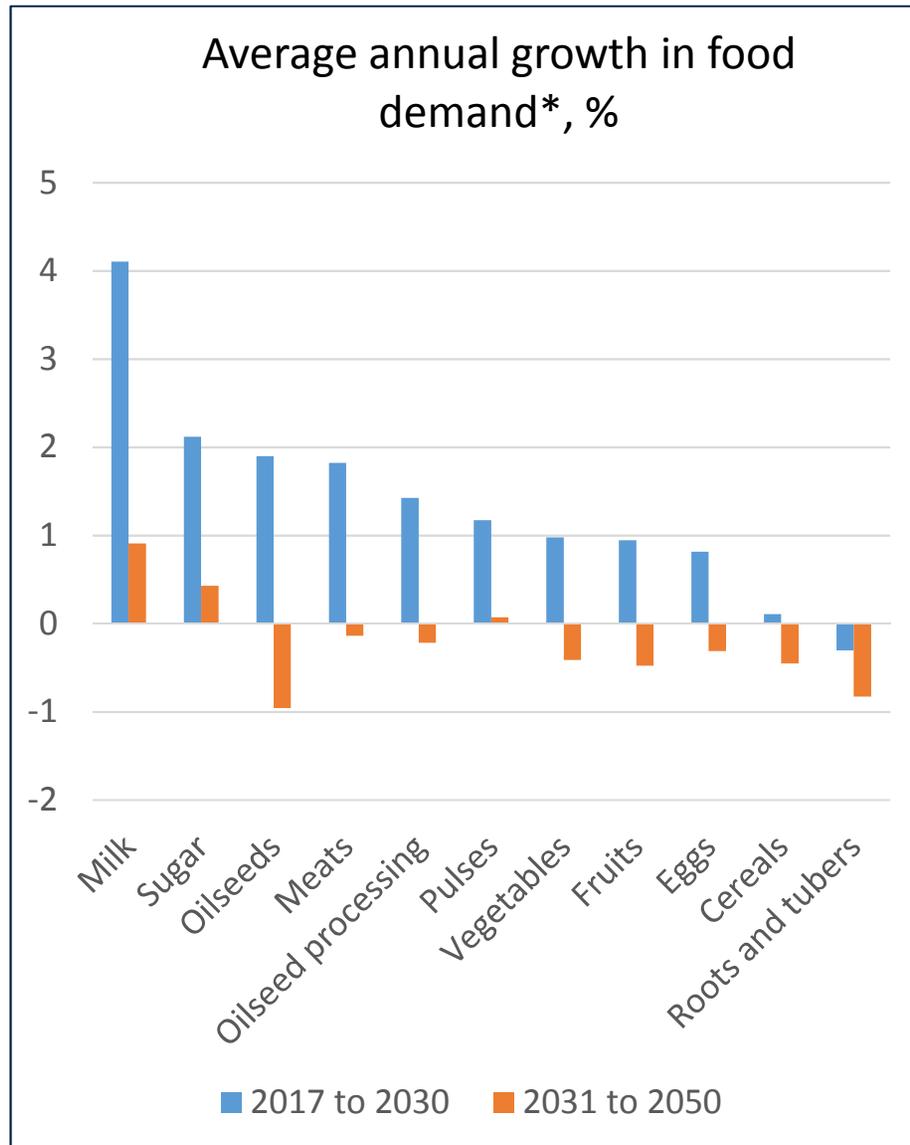
Projected income growth*



* IFPRI baseline SSP2 pathway, no climate change assumption

Source: IFPRI, 2015

Chinese food demand projections (IMPACT model)

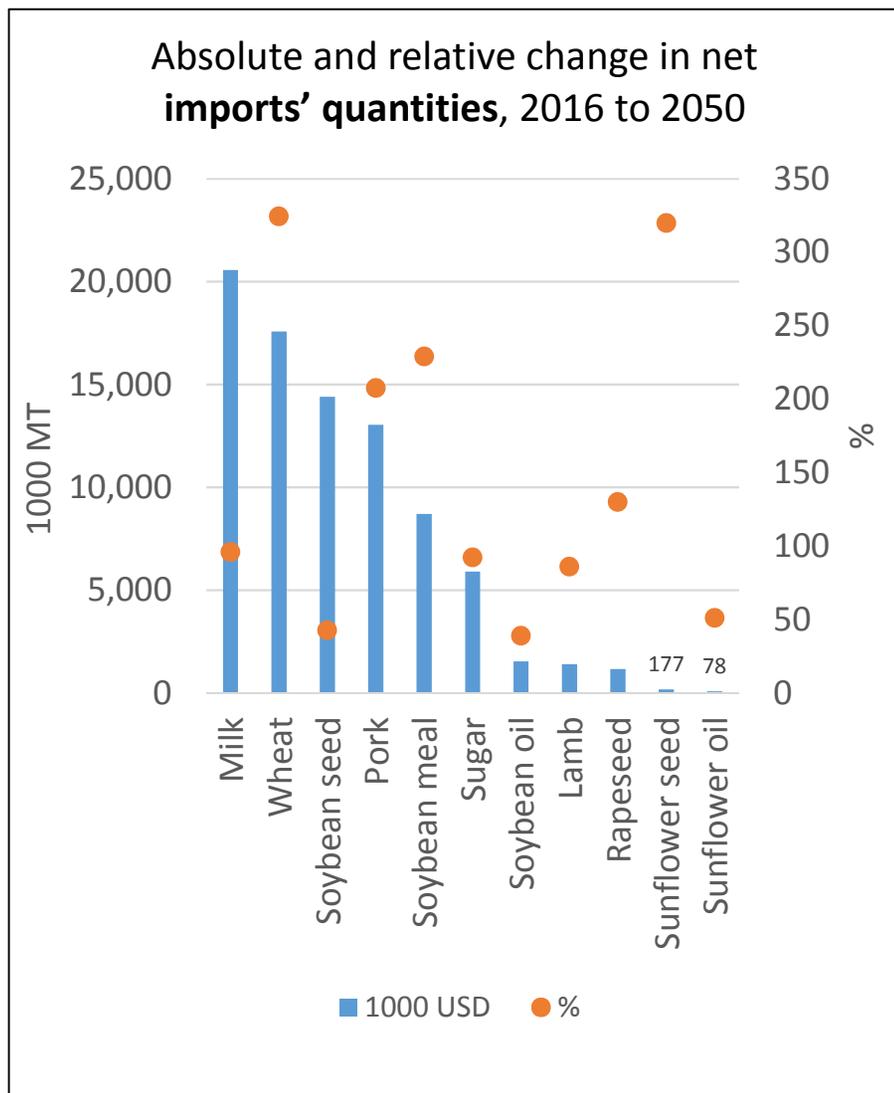


Source: IFPRI, 2015

- Positive population growth (until 2025), coupled with growing incomes and changing diets in China, will result in fast food demand growth for milk, sugar, oilseeds and meats.
- Following the already existing trend, consumption of cereals, roots and tubers will continue to decrease.
- Post-2030, ageing and declining population as well as slowing income growth will largely contribute to declining food demand for all major agri-food categories, except for milk, sugar and pulses.

* SSP2 pathway, no climate change assumption

Chinese agri-food net imports growth



Projected value of the Chinese agri-food imports in 2050

	1000 USD (2005)
Pork	51,478,593
Milk	23,251,078
Soybean seed	18,740,197
Lamb	12,966,640
Wheat	6,116,322
Sugar	5,707,705
Soybean oil	3,938,351
Soybean meal	3,756,247
Rapeseed seed	1,042,018
Sunflower oil	174,355
Sunflower seed	124,268

Current value of **all** agri-food exports (2015 est.) from CA to China is equal **to only 521 million USD.**

Source: IFPRI, 2015

Selection process for horticulture products

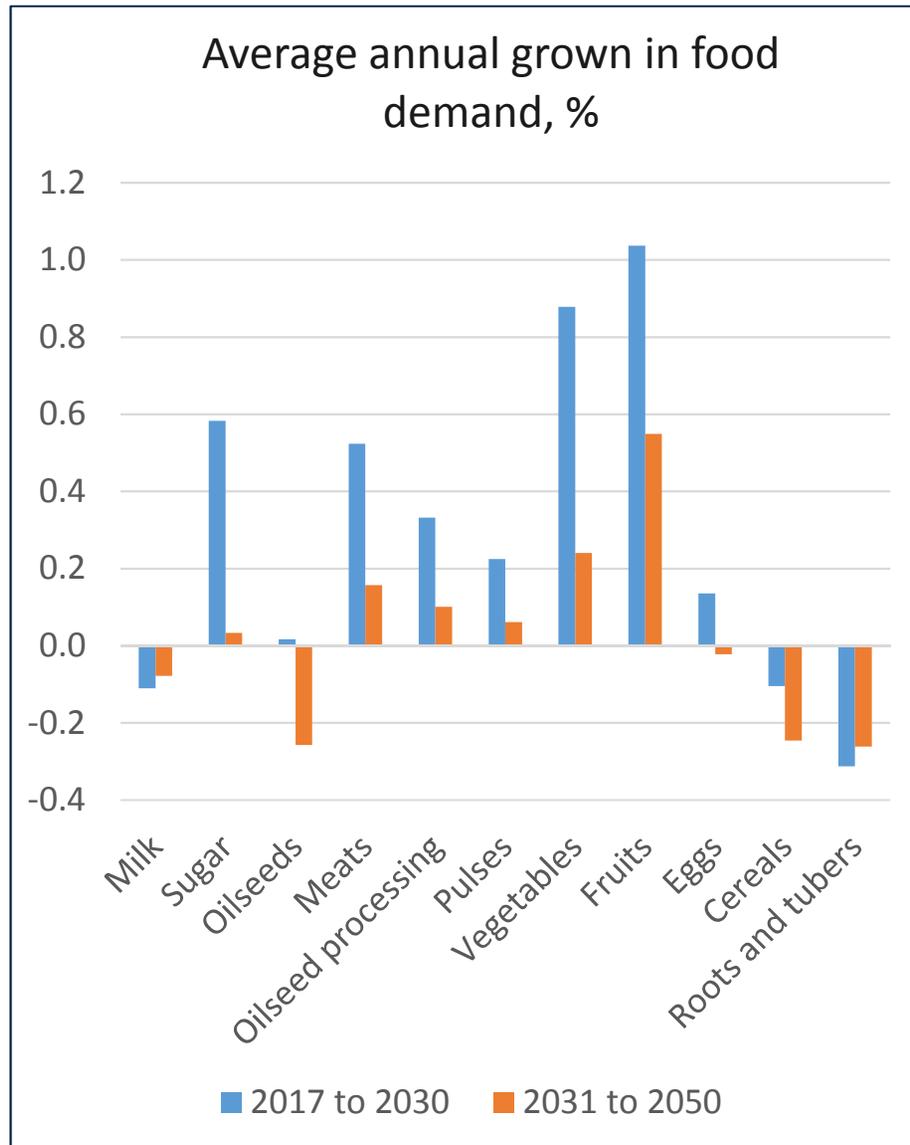
- IFPRI IMPACT model offers projections for fruits and vegetables' aggregates only, and does not offer differentiation across the specific horticulture products
- To pre-select horticulture products for the Stage 2 analysis, FAOSTAT latest historic data was used to examine recent horticulture trade for China and Central Asia
- Based on this analysis, horticulture products for which China is a net importer (2013 est.) were compared to the horticulture products for which Central Asian countries are net exporters (2013 est.)
- The horticulture products at the intersection of these two were selected for the further analysis in the Stage 2 of the project

Preliminary product selection for exports to China

Kazakhstan	Kyrgyzstan	Tajikistan	Uzbekistan
		Wheat	
		Milk	
		Beef*	
		Pork	
		Lamb	
		Sugar	
	Soybean (seed, meal, oil)		
	Sunflower (seed, oil)		
	Rapeseed (seed)		
Horticulture products			
Peas (dry)	Grapes		
	Apricots (fresh)		
	Plums and sloes		
	Apricots (dry)		
	Cherries		Walnuts, with shell
	Walnuts, with shell		Juice, grape
	Plums dried (prunes)		Plums dried (prunes)
	Watermelons		Watermelons
			Cherries

*Chinese net imports of beef are projected to decline by 70 percent between 2016 and 2050; however, due to the projected high food demand for beef, it was included for the analysis in this study.

Russian food demand projections



Source: IFPRI, 2015

- Similarly to the Chinese projections, growing incomes and changing diets in Russia, will result in fast food demand growth for vegetables, fruits, meats and sugar.
- Post-2030, declining population as well as slowing income growth will largely contribute to declining food demand for all major agri-food categories, especially for oilseeds and eggs.

Russian agri-food net imports' growth projections, 2050 (IMPACT model)

	1000 USD (2005)
Temperate Fruit*	5,712,101
Poultry	4,838,763
Milk	3,367,813
Beef	3,006,456
Eggs	1,311,530
Pork	1,208,458
Sugar	549,599
Potato	168,165
Groundnut	140,714
Soybean Meal	75,389

Source: IFPRI, 2015

*IFPRI IMPACT model offers projections for fruits and vegetables' aggregates only, and does not offer differentiation across the specific horticulture products. See slide 20 for the selection process of the horticulture products

Preliminary product selection for exports to Russia

Kazakhstan*	Kyrgyzstan	Tajikistan	Uzbekistan
Poultry			
Milk			
Beef			
Eggs			
Pork			
Sugar			
Potato			
Groundnut			
Soybean meal			
Horticulture products			
Grapes	Grapes		
Strawberries	Apricots (fresh)		
Cherries	Plums (dry)		
Plums	Apricots (dry)		
Peaches	Watermelons	Cherries	Walnuts, with shell
Apricots, fresh			Strawberries
Apricots, dry			Cherries
Watermelons			Plums
Prunes			Watermelons

*Most of the horticulture exports from Kazakhstan to Russia are re-exports from other CA countries (Kyrgyzstan, Tajikistan and Uzbekistan)

PHASE 2 RESULTS



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Phase 2

- ❑ **Goal:** to make a preliminary identification of particular product value chains in which CA countries are likely to be (or could become) competitive in the Chinese markets.

- ❑ **Activities:**
 - Calculation of “revealed comparative advantage” and “domestic resource costs” indicators
 - Consultations with stakeholders

Revealed Comparative Advantage (RCA)

- ❑ Country with a high degree of comparative advantage in product A should be relatively specialized in the production of A, and should be an exporter.
- ❑ Country can be inferred to have real comparative advantage in products of which it is a strong exporter. In other words, this approach uses existing trade/specialization patterns to infer comparative advantage.
- ❑ “Revealed comparative advantage” index is defined as the relative weight of exports of a commodity in a nation’s total exports, relative to the share of that commodity in total world exports (Balassa, 1965).

$$RCA = \frac{X_{ij} / \sum_i X_{ij}}{\sum_j X_{ij} / \sum_{i,j} X_{ij}}$$

where X_{ij} stands for net exports of product j from country i . Thus the numerator of the RCA is the share of product j in the exports of country i , and the denominator is the commodity’s share in all global exports of all products.

- ❑ **When $RCA > 1$, the country has a comparative advantage in that commodity (and the higher the RCA, the stronger the advantage), or a comparative disadvantage when $RCA < 1$.**
- ❑ **A negative value for the RCA indicates that the country is a net importer of the product, which would not be considered a positive indicator of competitiveness. Nonetheless, a low or negative RCA combined with a low DRC could indicate that there is some policy or trade barrier that is artificially lowering the ability to export, and if this is corrected, the country might become competitive on world markets**

Domestic Resource Cost (DRC)

- DRC of a product shows the value of a country's resources used to produce one dollar's worth of that commodity.

$$DRC_{ij} = \frac{c_{ij}^d}{p_{ij} - c_{ij}^f}$$

where c_{ij}^d and c_{ij}^f represent respectively domestic and foreign input costs for country i 's production of good j . The denominator of this fraction is the price of a unit of the output (its undistorted border price, measured in foreign exchange) minus the cost of imported inputs needed to produce it -- the net foreign exchange generated (if the good is an export) or saved (if it is an import substitute) by producing one unit of product j domestically.

- $DRC_{ij} < 1$ is an indication that country i has a “comparative advantage” in producing good j , that is, it costs less to produce a unit of the commodity than it is worth. The smaller the DRC_{ij} is, the greater the advantage would be.
- In DRC methodology all values are “economic” values, that is, the value to society as a whole. Tradable goods prices are adjusted for taxes/ tariffs/ effects of quantitative trade restrictions/ subsidies. Non-tradable goods are adjusted to “shadow prices”. Financial profitability is based on market prices, so will result in a “false” indication.

Problems and Caveats: RCA

- ❑ **RCA is based on actual patterns of trade, which may be strongly affected by a number of factors** related to present or past policies. For example, if production of a good is heavily subsidized by public funding, it may have high exports and RCA, but greater production would make society as a whole worse off. In addition, these policies could be changed in the future.
- ❑ **RCA is “static”**: it does not demonstrate whether or not the current level of specialization is above or below the long run equilibrium optimal level. If the current trade patterns represent an equilibrium, then the fact that a country has a high RCA in a product does not imply that **further** specialization in that product would improve its welfare. Rather, the inference from a high RCA that the country should expand its production of that commodity (relative to the expansion of production in the world at large), requires the assumption that the current trade patterns are not already at some equilibrium state. In the case of countries that are still in a state of transition from previous highly distorted trade environment, such as those in Central Asia, this is probably a reasonable assumption.

Problems and Caveats: DRC

❑ **Empirical difficulties in estimating DRC:**

- ❑ Lack of quality data on input use and production costs, and their variability across different classes of producers. In stage 2 of this study, estimates of the cost of production and its structure were based on a small sample of farmers who were interviewed for this purpose. The group was divided into small and large farmers for each commodity, but it is not possible to verify how representative the sample is of the whole class. In Stage 3 of the study we hope to be able to cross-check these numbers with a larger sample.
- ❑ Hard to estimate shadow prices for non-tradables (labor, capital, land), given absence of some of the required data and other issues.
- ❑ Complications in making empirical adjustments for tradable products. The border prices must be adjusted by transport costs to make them comparable to farmgate prices. Also, for products that are not traded in the same form in which they are produced on the farm, calculating a border price equivalent to compare to the farmgate price requires an adjustment for processing costs.
- ❑ Policies induce shifts in production decisions that affect the coefficients of input use that are used in the empirical calculation of the DRCs. For example, if fertilizer prices are artificially subsidized, farmers adopt more fertilizer intensive production technologies. So these distortions affect the DRC calculations in a way that cannot be fully corrected by simply adjusting the prices.

In recognition of the shortcomings of the objective indicators of comparative advantage and competitiveness, the selection of the short list in stage 2 was also guided by expert opinion from interviews with actual market participants.

PHASE 2 RESULTS: KAZAKHSTAN



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Product selection: Export competitiveness assessment

Summary: Based on the RCA indicators, the products with the most export potential include wheat and sunflower seed. Relatively high RCA for rapeseed seed suggests its competitiveness potential as well. In addition, the results of the DRC indicators point to the competitiveness of rapeseed seed and dry peas. Based on the expert opinions, additional products for consideration include lamb, beef and sunflower oil (these are also supported by the DRC, but not RCA results).

Product	Net exports (2015-2017 average), 1000 USD	RCA (2012-2016 average)	DRC* (2017)	Projected value of the Chinese agri-food imports, 2050 1000 USD (2005)
Wheat	670,988	6.17	0.71	6,116,322
Sunflower seed	50,700	5.38	0.4	124,268
Rapeseed seed	25,118	0.94	0.18	1,042,018
Peas (dry)	5,146	0.72	0.32	335,349**
Lamb	1,167	0.04	0.77	12,966,640
Beef	-31,450	-0.2	0.85	-
Sunflower oil	-60,467	-2.4	0.4	174,355
Soybean oil	4,899	0.22	-	-
Soybean seed	4,966	0.03	-	-
Pork	-2,746	-0	-	-
Soybean meal	-4,632	-0.1	-	-
Milk	-101,073	-1.5	-	-
Sugar	-193,839	-2.8	-	-

Source: UN Comtrade, own calculations

*Here and elsewhere, the list of products for which DRCs were calculated was pre-selected based on the expert opinion

** Chinese net imports (2015-2017 average)

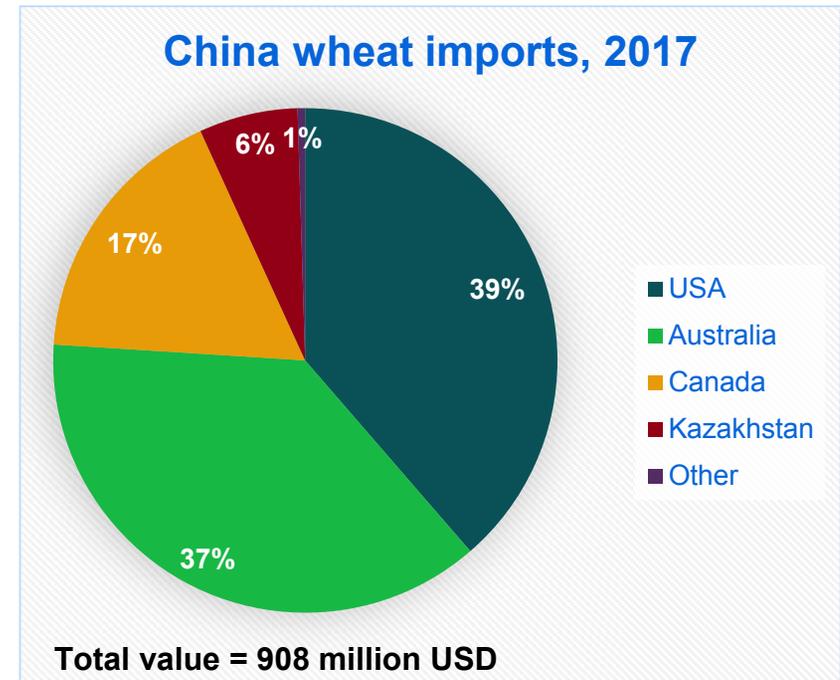
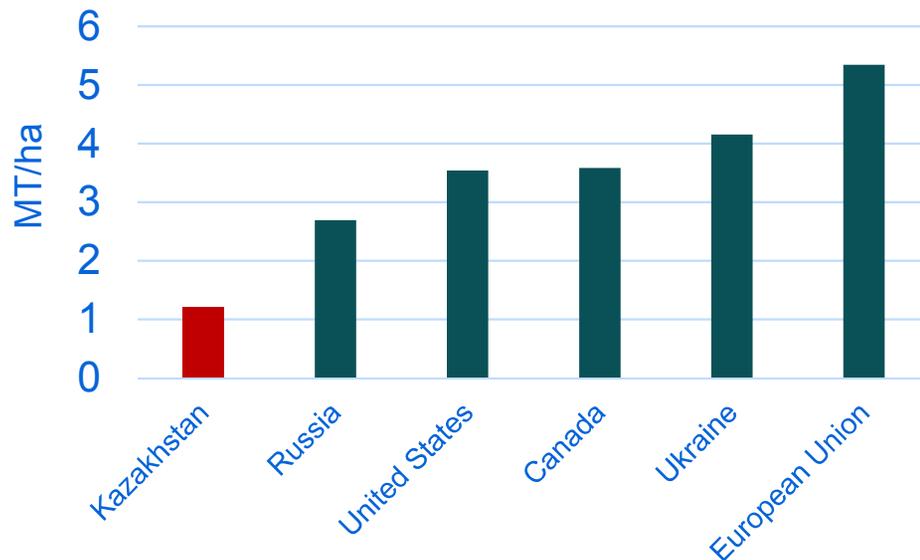
Note: Darker color suggests that the product can be included in the short list based on all three criteria – RCA, DRC and expert opinion; lighter color shades imply that not all the criteria are met.

Kazakhstan has a strong potential to further increase wheat production and exports

- The country has a strong potential in increasing wheat production by increasing its yields.
- Capacity of Dostyk and Khorgos border rail terminals (1,200 and 300 tons per day) are important bottlenecks for wheat exports to China.
- However, Kazakhstan is considering investing in development of additional rail terminals.

- Annual growth of wheat exports to China = 10 percent in 2013-2017.
- China is ready to allocate an even larger amount of quota for wheat imports from Kazakhstan.

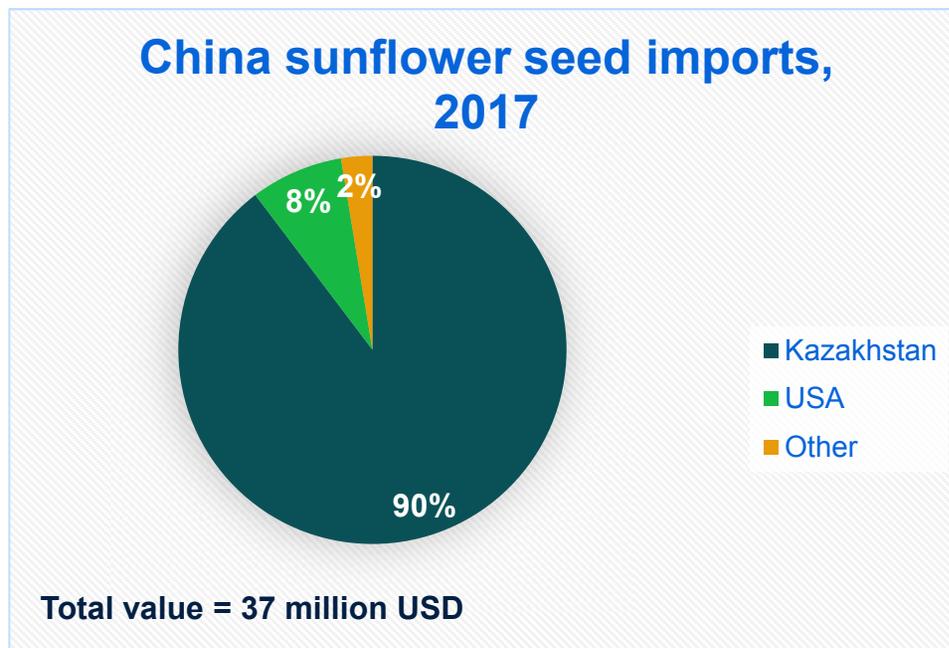
Kazakh wheat yields remain very low



Sources: UN Comtrade, USDA PSD

Similarly, Kazakhstan has a strong potential to further increase sunflower seed production and exports

- Exports to China has been continuously growing from USD 0.37 million in 2013 to 32.88 in 2017.
- Currently, Kazakhstan dominates sunflower seed exports to China.
- Country has a strong potential to increase sunflower seed production. Its average yield reached historical record of 1.02 tons per hectare in 2017, mostly due to new seeds varieties adaptation, increased use of inputs and improved machinery efficiency.

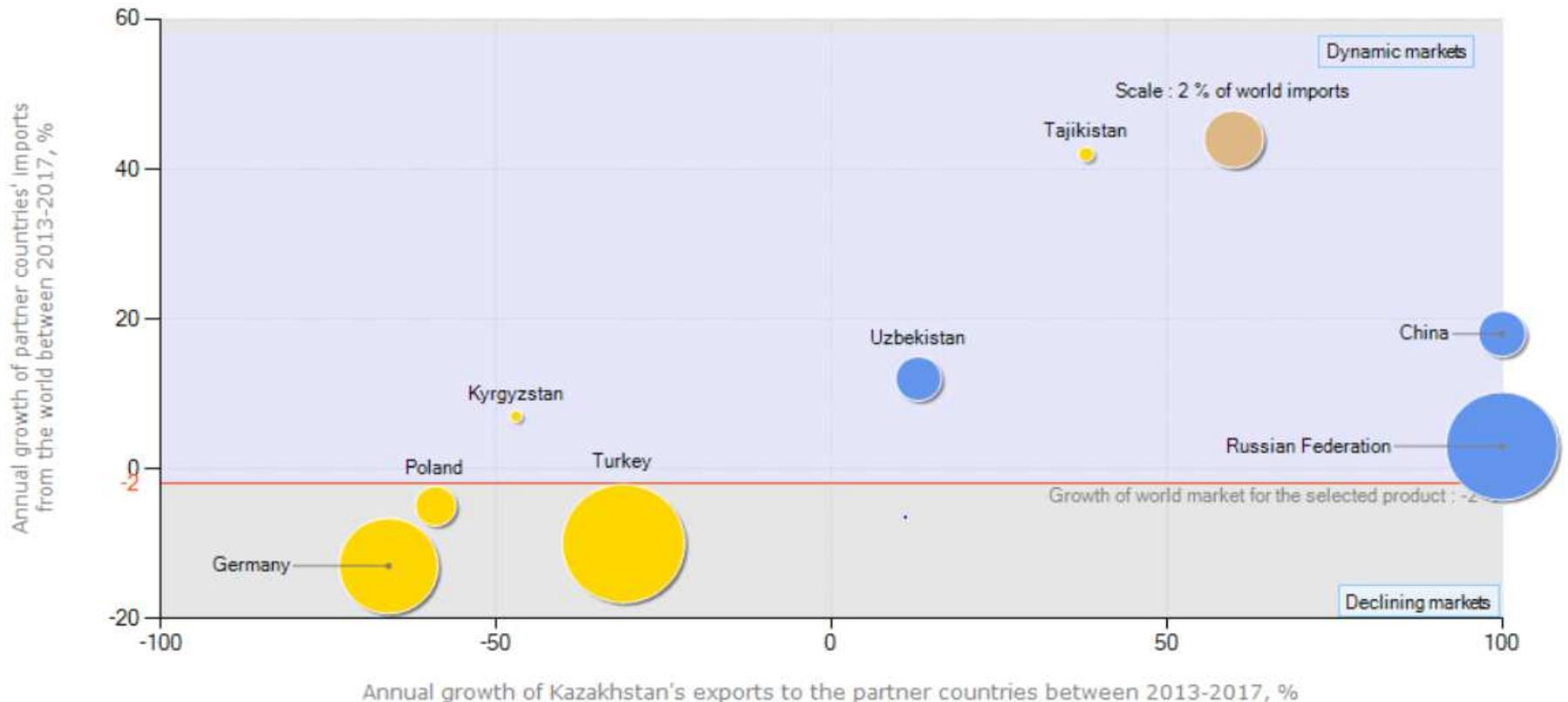


Source: UN Comtrade

- Overall, production of sunflower has increased by 88% during in 2016 compared to 2012, both due to expansion in area (by 18%) and increased yields (by 59%), and may expand further.

Kazakhstan has been capturing sunflower seed exports markets in both China and Russia

Growth in demand for a product exported by Kazakhstan in 2017
Product : 1206 Sunflower seeds, whether or not broken



● Kazakhstan export growth to partner < Partner import growth from the world

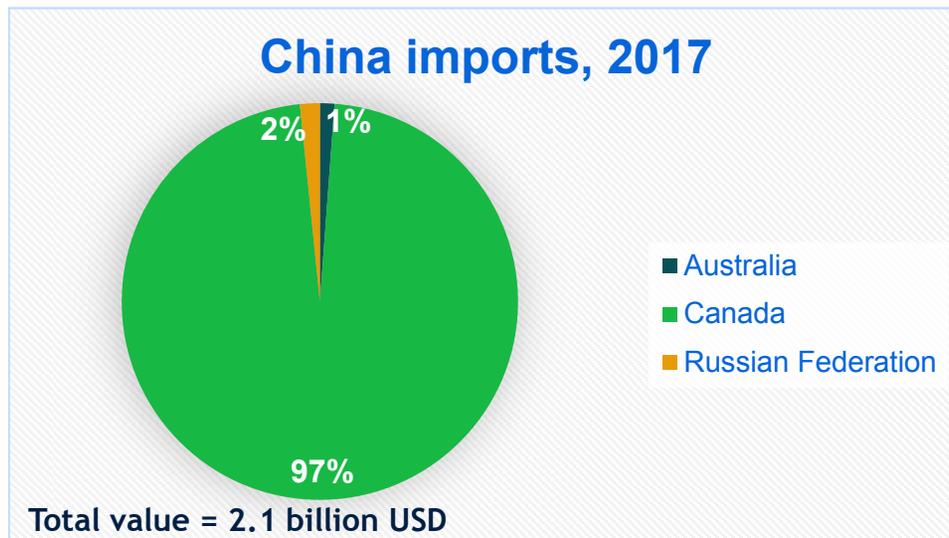
● Kazakhstan export growth to partner > Partner import growth from the world

● Reference bubble
Some bubbles may not be displayed due to lack of growth rate indicators

The bubble size is proportional to the share in world imports of partner countries for the selected product



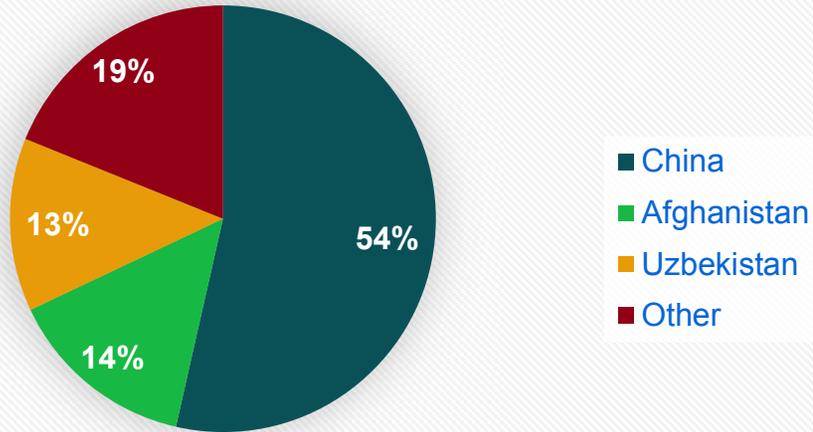
Kazakh rapeseed seed and its products may occupy GM-free niche on Chinese market



- Currently, Kazakhstan can export only rapeseed oil to China. For exporting rapeseed and rapeseed meal, Chinese and Kazakh authorities need to sign phytosanitary agreements and Chinese inspection should certify Kazakh producers. As of March 2018, both countries have developed an action plan to accomplish preparation of agreements.
- However, Kazakh rapeseed seed was actively re-exported to China through Mongolia in 2016 and 2017.
- Canada is a key exporter of rapeseed seed to China. It will be challenging for Kazakhstan to compete with Canadian rapeseed in the Chinese market. First, there is less area in Kazakhstan that suits well for the rapeseed production. Second, most of the Canadian canola is genetically modified to be resistant to the glyphosate herbicide, making it more productive. Nevertheless, Kazakh rapeseed and its products may occupy GM-free niche on Chinese market.

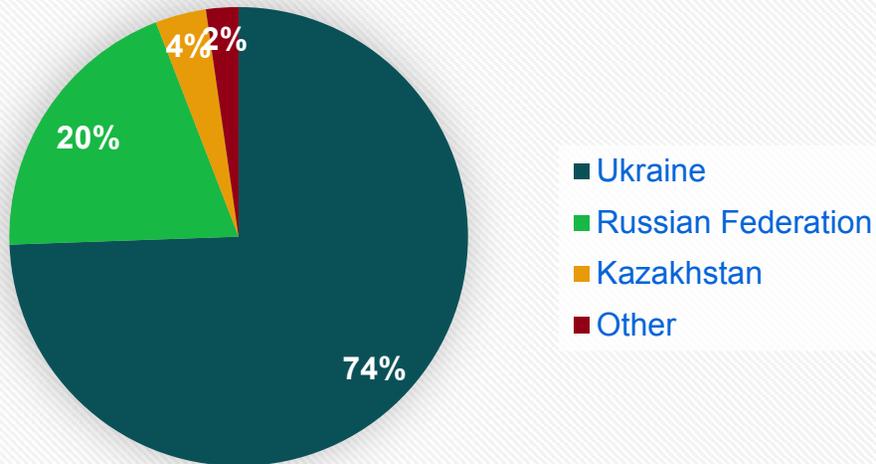
Sunflower oil

Kazakhstan exports, 2017



Total value = 41 million USD

China imports, 2017



Total value = 612 million USD

- RCA indicator for sunflower oil exports from Kazakhstan did not indicate export competitiveness of this product. However, based on both expert opinions and DRC results, sunflower oil can be considered for the short list of products that require further analysis.
- Both overall exports of the Kazakh sunflower oil and exports to China have been increasing since 2013.
- In 2016, China became a main destination, accounting for 43 percent of total sunflower oil exports.
- In 2016 Chinese invested in oil processing facility in North Kazakhstan with projected capacity of 120-150 thousand tons of oil. By comparison, vegetable oil production in the country in 2016 was 312 thousand tons.

Source: UN Comtrade

Share of Kazakh sunflower oil exports to China has been strongly increasing over time

Growth in demand for a product exported by Kazakhstan in 2017
 Product : 151211 Crude sunflower-seed or safflower oil

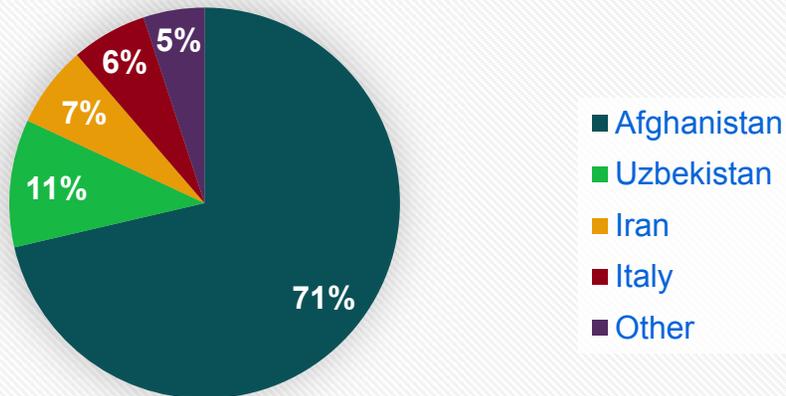


- Kazakhstan export growth to partner < Partner import growth from the world
- Kazakhstan export growth to partner > Partner import growth from the world
- Reference bubble
Some bubbles may not be displayed due to lack of growth rate indicators
- The bubble size is proportional to the share in world imports of partner countries for the selected product



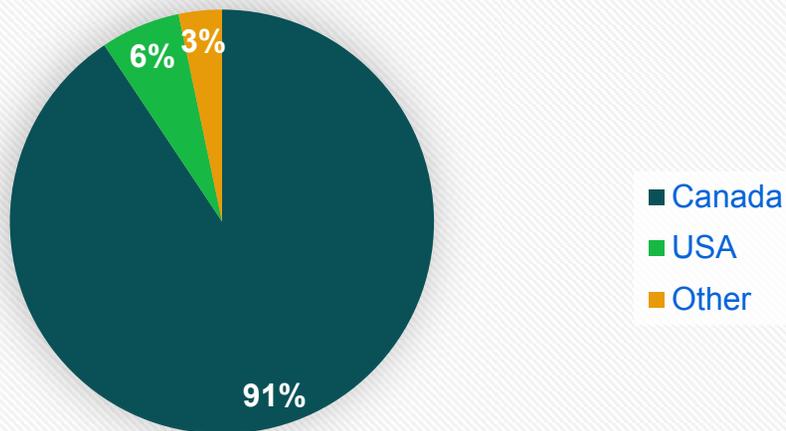
Peas (dry)

Kazakhstan exports, 2017



Total value = 10.5 million USD

China imports, 2017



Total value = 381 million USD

- Kazakhstan has good capacity for production growth (2017 production 131 thousand tons).
- Production and transportation costs are competitive for exports to China.
- China's peas imports come mainly from Canada, where natural conditions are similar to the ones observed in Kazakhstan.
- Currently, due to relatively low prices, peas is less competitive crop than lentils or flax in Kazakhstan. Growers keep producing it for more rotational reasons rather than profit. As peas could be produced in all regions where wheat grows, production could potentially be increased in more than 10 times.

Product selection: Interviews with the stakeholders

The next two slides offer a summary of expert opinions on whether to include the following products in the 'short list'

Milk	<ul style="list-style-type: none">• There are no strong preconditions for milk export development in the short-run, which is reflected in the strong net importer position of Kazakhstan
Beef	<ul style="list-style-type: none">• Kazakhstan may struggle to be price competitive with meat exports to China originating in South America.• However, potentially, Kazakhstan may find a niche on Chinese market, including for natural meat, pasture fed meat, organic meat, etc.• Current efforts of the Kazakh government are targeted towards improving the competitiveness of the sector. For example, veterinary services has been reformed and significant investments were made in livestock identification, labs and vaccination.• In addition, meat union of Kazakhstan has signed a memorandum with CITIC Construction on intentions to invest USD 600 million in livestock production and export infrastructure by 2024.
Pork	<ul style="list-style-type: none">• Local Islamic traditions reject pig meat production and currently population of pigs is declining.
Lamb	<ul style="list-style-type: none">• Kazakh sheep meat has different taste characteristics than Australian or New Zealand one and may find consumer in China.• Four meat processing enterprises passed inspection and permitted to be used for exports of sheep meat to China.• Australian company Cedar meat established a joint venture with Kazakh company Eurasian Agroholding which is investing in abattoir with 10,000-12,000 tons of meat capacity as well as sheep feedlot with 5,000 heads capacity. Facility will be located in Ayagoz city, East Kazakhstan, region bordering with China. Cedar meat is expected to bring knowledge in production and processing of sheep meat as well as its' expertise in marketing in China.
Sugar	<ul style="list-style-type: none">• There are no strong preconditions for export development, which is reflected in the strong net importer position of Kazakhstan

Product selection: Interviews with the stakeholders (cont.)

Soybean seed	<ul style="list-style-type: none">• There is a potential to increase soybeans production in the country both through increased land allocation and improved yields.• But this potential is limited by area of irrigated land, where soybeans compete with higher value crops like vegetables.• For production on rain-fed lands, Kazakhstan is disadvantaged on precipitation and sun radiation, which are required for soybeans.• Local poultry industry most likely will continue to compete for soybeans with exports, limiting their expansion. Poultry population increased by 16% in five years (from 34.2 million heads in 2013 to 39.9 million heads in 2017 (end of year)).
Soybean meal	<ul style="list-style-type: none">• Although products seem to be competitive on Chinese market, domestic demand would likely stay high.• Currently, however, Kazakhstan cannot export soybean meal to China due unsettled phytosanitary agreements• Main consumer of soybean meal is poultry industry, which continue growing (see above).
Soybean oil	<ul style="list-style-type: none">• Although products seem to be competitive on Chinese market, domestic demand would likely stay high.• Export contracts to China require substantial volumes and relatively low prices, which Kazakhstan cannot offer.

PHASE 2 RESULTS: KYRGYZSTAN



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Product selection: Export competitiveness assessment

Summary: Based on the RCA and DRC results, and the interviews with the stakeholders, the products with the most export potential to China include cherries, walnuts, milk, fresh apricots, and plums (fresh and dried). Other products mentioned by stakeholders as possible competitors in the Chinese markets include beef, lamb and honey. Main export destinations for the products of interest are Russia and Kazakhstan. Exports to China remain limited, however, have been increasing for some products (i.e. cherries).

Product	Kyrgyz net exports (2013-2017 average), USD	RCA* (2013-2017 average)	DRC** (2017)	Chinese net imports (2015-2017 average) USD	Russian net imports (2015-2017 average) USD
Apricots (fresh)	2,605,524	78.8	0.77	496,490	66,240,193
Walnuts, with shell	7,331,118	29.0	0.56	25,300,000	18,326,576
Plums (fresh)	637,057	13.4	0.72	99,008,118	102,209,431
Cherries	505,818	7.6	0.17	903,424,257	179,307,051
Plums (dried)	210,043	3.3	0.29	7,557,770	50,631,719
Milk	2,930,699	1.4	0.43	23,251,078***	3,367,813****
Watermelons	79,643	0.95	-	106,480,374	17,381,844

Source: UN Comtrade, own calculations

**The list of products for which DRCs were calculated was pre-selected based on expert opinion

*** Projected value of the Chinese agri-food imports, 2050,1000 USD (2005)

**** Projected value of the Russian agri-food imports, 2050,1000 USD (2005)

Note: Chinese net imports of fresh apricots increased from -1.5 mln. USD mln 2015 to 4.2 mln USD in 2017

Product selection: Export competitiveness assessment (cont.)

Product	Kyrgyz net exports (2015-2017 average), mln USD	RCA (2015-2017 average)	DRC* (2017)
Lamb	-503,668	-1.2	-
Beef	-7,611,935	-2.2	-
Sunflower seed	33,036	0.2	-
Rapeseed seed	-1,276	0.0	-
Soybean seed	-113,492	0.0	-
Soybean oil	-123,746	-0.2	-
Apricots (dry)	122,636	-0.6	-
Soybean meal	-1,462,612	-0.8	-
Grapes	-2,699,179	-3.3	-
Pork	-16,510,645	-6.0	-
Peaches	-1,802,521	-8.4	-
Wheat	-46,194,669	-13.0	-
Sugar	-40,333,505	-18.1	-
Sunflower oil	-41,672,674	-50.3	-

Source: UN Comtrade, own calculations

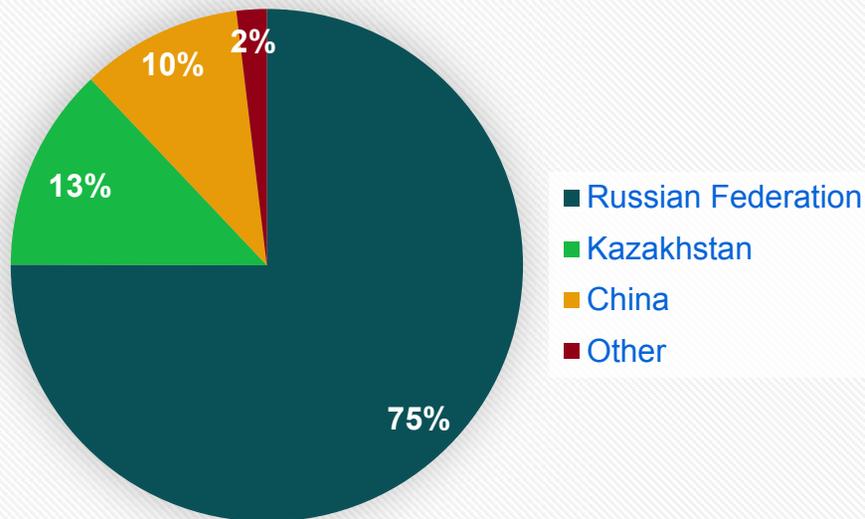
*The list of products for which DRCs were calculated was pre-selected based on the expert opinion

Cherries

Average yields in top exporting countries, 2015-2017

	MT/ha
United States of America	8.4
Turkey	6.4
Chile	5.0
Uzbekistan	8.6
Kyrgyzstan	5.1

Cherries exports' destinations, 2017

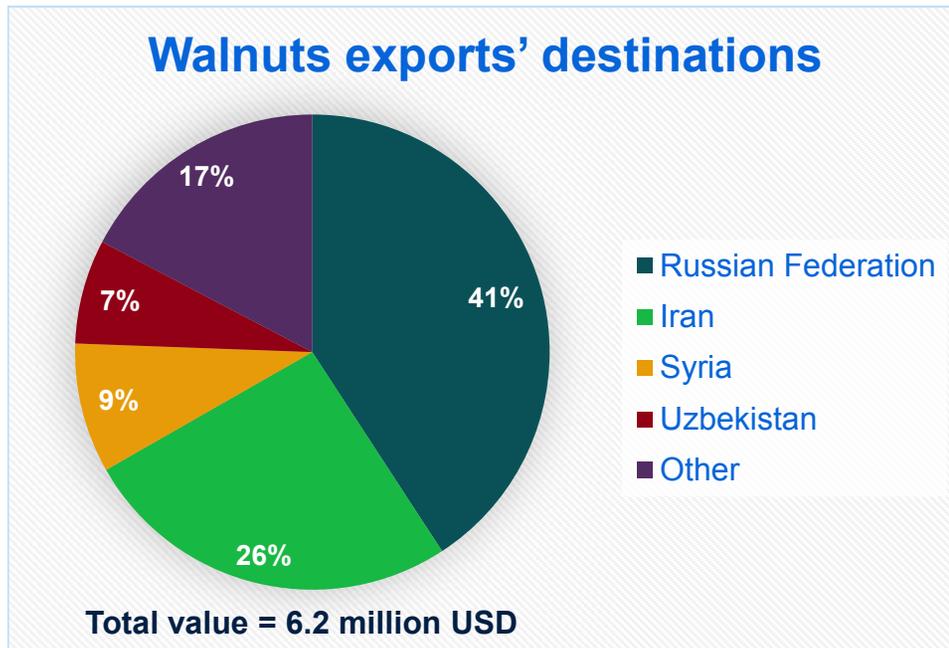


Total value = 1.5 million USD

Source: UN Comtrade

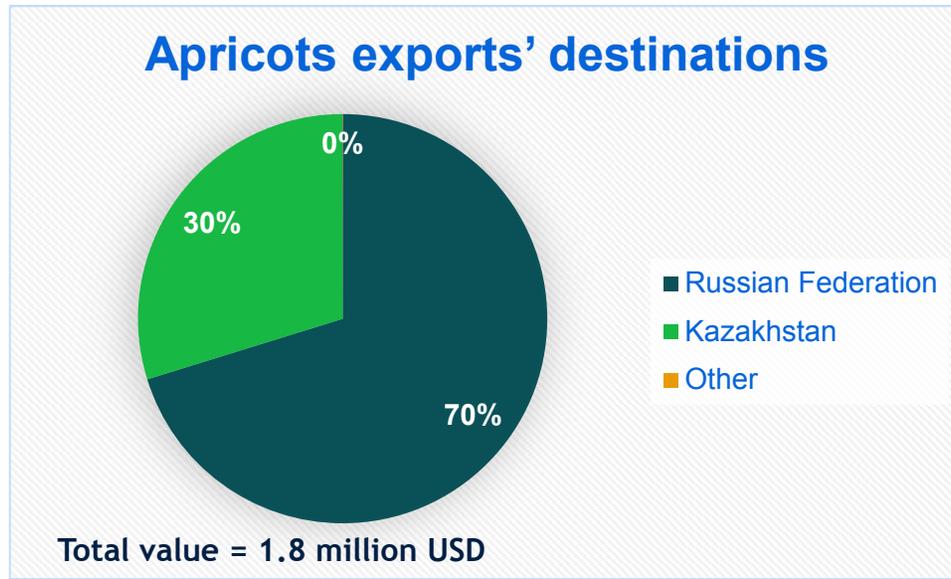
- Cherry yields have been increasing in Kyrgyzstan since 2007, but still lag behind those of the major world exporters. This indicates a potential for further increasing cherry production, and exports, if yields are improved.
- The key destinations of the Kyrgyz cherries are Russia and Kazakhstan.
- However, exports to China have been gradually increasing since 2015. Most cherries from Kyrgyzstan come into China via air freight to Urumqi, the capital of Xinjiang Uyghur Autonomous Region.
- In the last two years, China and Kyrgyzstan have been strengthening their cooperation in the area of SPS requirements, creating a further potential to increase exports of cherries and other horticulture products to China. In 2017, around 10 cherry orchards was inspected by Chinese delegation and received permission for exports to China.
- New marketing channels are also opening with the development of the online delivery services.

Walnuts, with shell



- Kyrgyzstan has the second largest yields of 4.7 MT/ha among the key walnut exporting countries (after neighboring Uzbekistan, which has average yields of 9.2 MT/ha).
- Kyrgyzstan is also one of the largest walnut exporting country in the world.
- Walnuts are exported to a variety of countries, including to China.
- National experts conveyed in the interviews that Kyrgyzstan has a strong potential for further increasing walnuts exports, including to China, under the condition that walnut plantations are expanded.

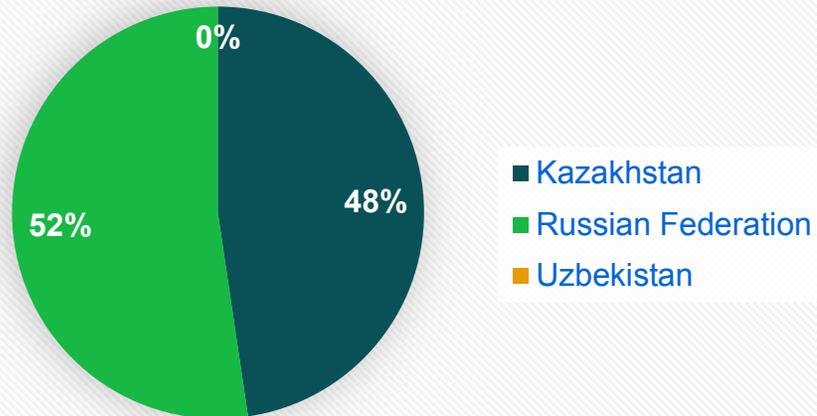
Apricots (fresh)



- Production of fresh apricots in Kyrgyzstan has remained relatively stable since 2010.
- On average the Kyrgyz farmers harvest 3 MT/ha, which is low comparing to other large apricot producers (i.e. Uzbekistan - 11 MT/ha, and France and Italy -12 MT/ha, Spain 7.5 MT/ha, Turkey – 5MT/ha).
- Large demand from Russia creates an important opportunity for Kyrgyzstan to increase its fresh apricots exports.

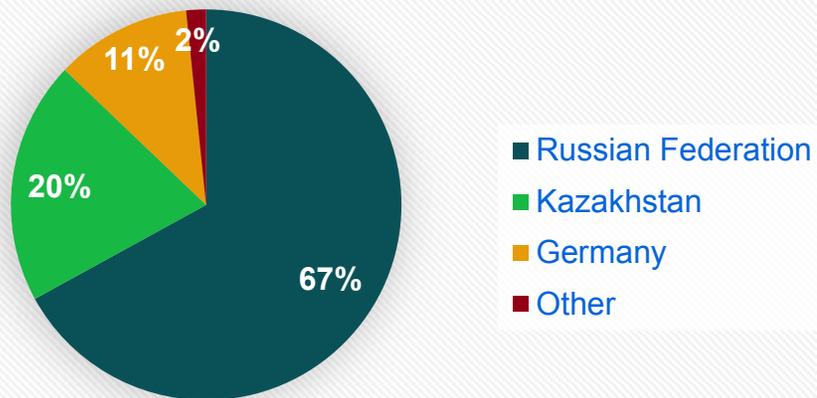
Plums (fresh and dry)

Exports of fresh plums



Total value = 0.9 million USD

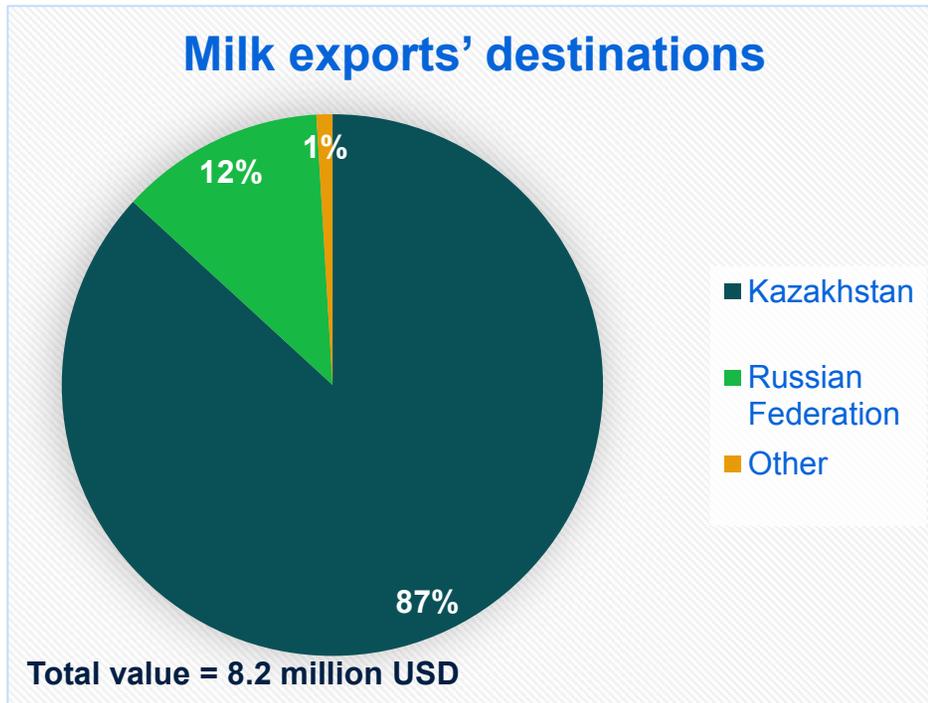
Exports of prunes



Total value = 0.8 million USD

- Production of fresh plums in Kyrgyzstan has remained relatively stable since 2010
- Kyrgyz plum yields are significantly lower (6.2 MT/ha) than those in the largest exporters of plums (i.e. 17 MT/ha in Chile, 16.2 MT/ha in Italy)
- The Kyrgyz fresh plums are mainly exported to Kazakhstan and Russia.
- Geography of prunes exports is much more diversified. Nevertheless, most of the exports still go to Russia and Kazakhstan.
- Overall, the export volumes of plums (fresh and dry) remain very low in comparison to the current demand in both China and Russia.

Milk



- With over 380 thousand dairy farms and 1.5 million tons of raw milk, Kyrgyzstan ranked #65 in global milk production (2015).
- Dairy industry in the country is relatively well developed and has a strong potential to growth further.
- Milk prices are six percent above the world market, while feed prices are 13 percent below, which provides a profit opportunity for milk producers and processors (FAO).

Key challenges: Interviews with the stakeholders

- ❑ The following key constraints were outlined by the Kyrgyz experts with regards to increasing production and exports:
 - ❑ **Cherries:** outdated production technologies, high seasonality of production, few cold storage facilities, and inefficient processing and packing practices;
 - ❑ **Plums:** small scale farming and low production volumes, high seasonality of production, outdated production technologies, few cold storage facilities;
 - ❑ **Apricots:** high seasonality of production, low capacity to comply with phytosanitary and packaging requirements;
 - ❑ **Walnuts:** high seasonality of production, outdated cleaning, drying and storage facilities, old walnut plantations;
 - ❑ **Milk:** low productivity, small scale production, poor veterinary system and problems with animal health.

Other challenges: non-product specific

- Low capacity to comply with with the China rules, regulations and requirements on food, packaging, labeling
- Low efficiency of customs clearance in Kyrgyzstan
- Weak inland transport infrastructure: rail, road, air
- Low production efficiency, including
 - Lack of manpower, especially skilled mid-level professionals
 - Outdated production equipment
 - Poor quality control
- Low export promotion capacity
- Ineffective marketing to target audiences

PHASE 2 RESULTS: UZBEKISTAN



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Product selection: Export competitiveness assessment

Summary: Uzbek exports that exhibit export competitiveness based on the RCA analysis, include cherries, apricots (dry and fresh), plums (fresh), grapes (fresh) and walnuts. Currently, Uzbekistan does not export any of the selected horticulture product to China, however, starting in 2018, Uzbek cherries will be allowed into China. For some products (i.e. cherries, plums and grapes) both China and Russia have large demand that Uzbekistan may strive to meet.

Product	Uzbek net exports (2012-2017 average), USD	RCA (2012-2016 average)	DRC (2017)	Chinese net imports (2015-2017 average) USD	Russian net imports (2015-2017 average) USD
Cherries	44,733,333	172.0	0.20	903,424,257	179,307,051
Apricots (fresh)	20,396,311	109.1	0.17	496,490***	66,240,193
Apricots (dry)	9,594,508	57.1	0.17****	-665,132**	26,998,989
Walnuts	39,208,645	37.5	0.20	25,300,000	18,326,576
Plums (fresh)	10,665,391	28.6	0.41	99,008,118	102,209,431
Grapes, including table	78,195,406	22.1	0.22 (table) 0.65 (wine)	532,000,000	573,936,999
Plums (dried)	11,261,431	7.3	0.41****	7,557,770	50,631,719

Source: UN Comtrade, mirror trade statistics; own calculations

**Chinese net imports of dry apricots increased from -3.5 mln USD in 2015 to 2.6 million USD in 2017

***Net imports of fresh apricots increased from -1.5 mln. USD mln 2015 to 4.2 mln USD in 2017

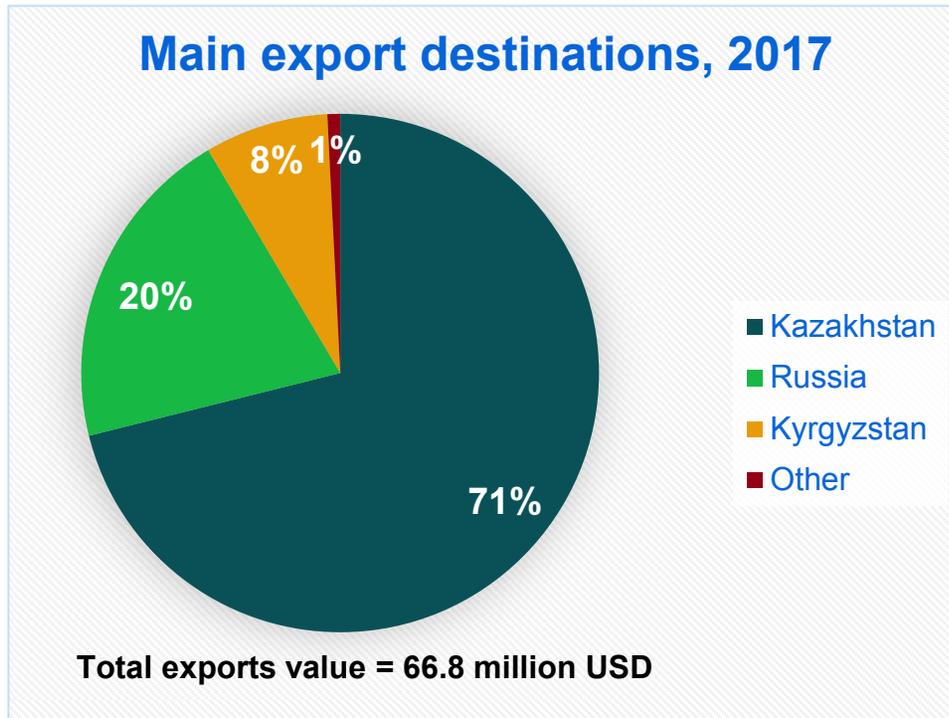
**** DRCs for fresh fruits are used to approximate the DRCs for the corresponding dry fruits

Product selection: Export competitiveness assessment (cont.)

Product	Uzbek net exports (2015-2017 average), USD	RCA (2015-2017 average)	DRC (2017)
Watermelons	54,961	0.1	-
Lamb	-47	0.00	-
Rapeseed seed	-111,376	-0.03	-
Soybean seed	-3,024,822	-0.1	-
Pork	-2,858,085	-0.2	-
Milk	-2,579,232	-0.3	-
Beef	-11,667,407	-0.6	-
Sugar	-27,058,365	-2.3	-
Soybean oil	-12,406,061	-3.9	-
Soybean meal	-49,800,000	-9.8	-
Wheat	-204,658,742	-11.6	-
Sunflower seed	-33,096,062	-22.5	-
Sunflower oil	-105,629,987	-24.1	-

Source: UN Comtrade, mirror trade statistics; own calculations

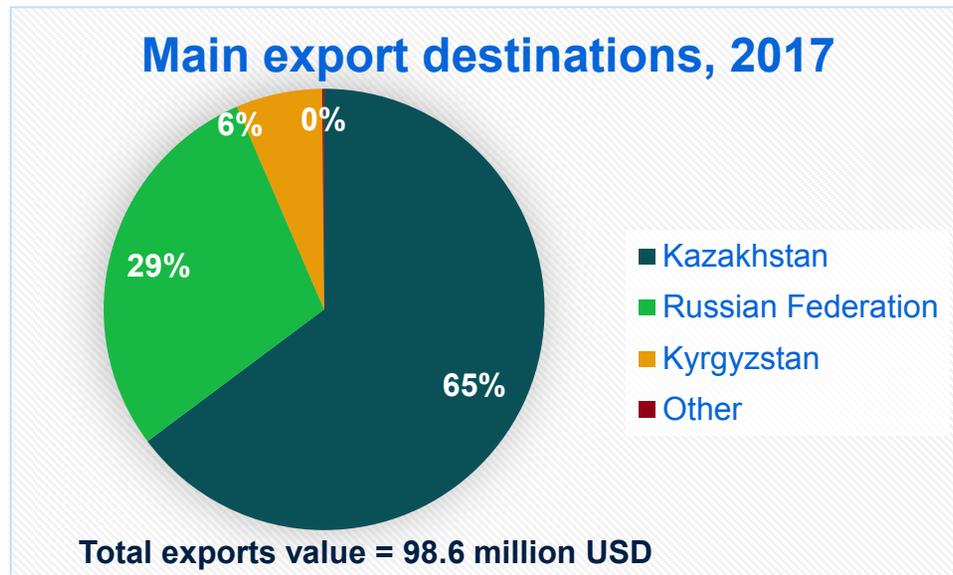
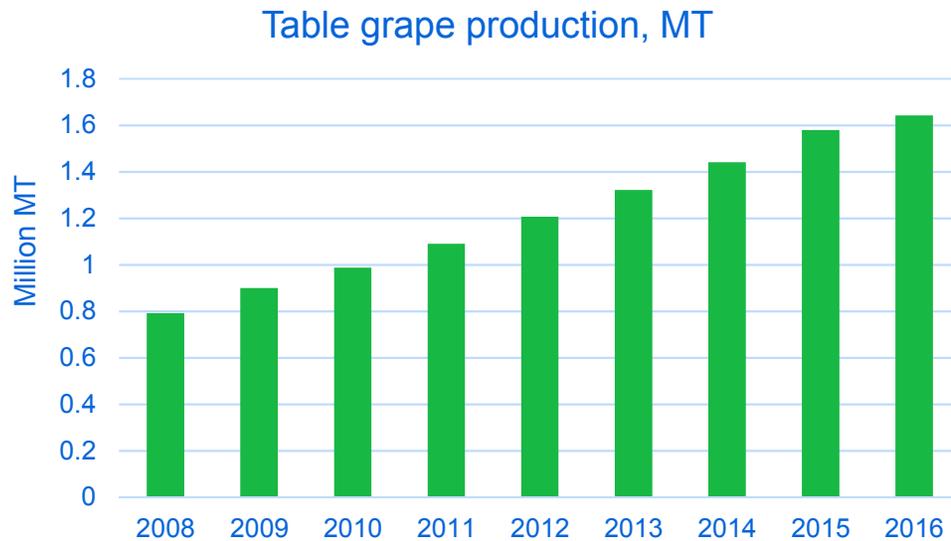
Cherries



- Uzbekistan has strong pre-conditions for the production of cherries due to its good climatic conditions, early crop maturing and inexpensive labor.
- Upgrading cherry production technologies has potential to further boost cherry yields.
- For example, there are opportunities for using technologies to further extend the cherry season to allow for larger harvests.
- Kazakhstan and Russia are the main destination of cherry exports. However, Uzbekistan is also exploring new markets, including recent exports to South Korea.
- Starting in 2018, Uzbek cherries are also allowed into China (previously held quarantine restrictions have been removed).

Source: UN Comtrade, mirror trade statistics

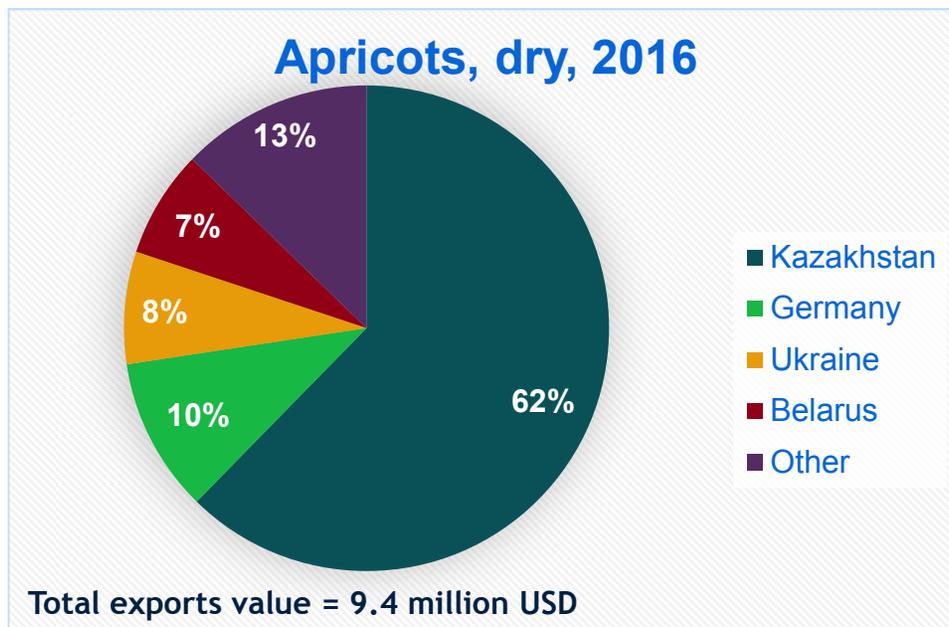
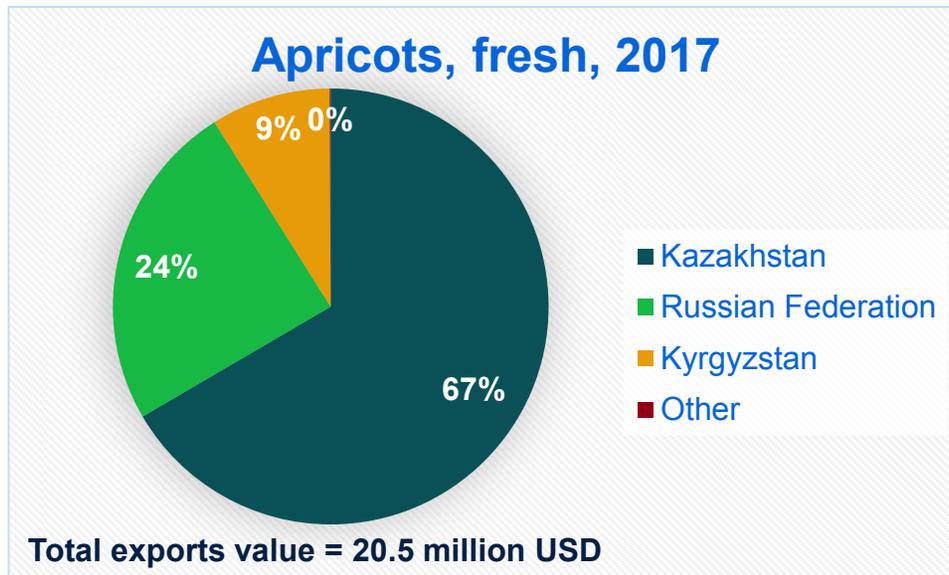
Table grapes



- Table grapes are the number one product from the fresh produce category exported from Uzbekistan.
- Thanks to its climatic conditions, Uzbekistan can export table grapes almost all year round.
- Its production has been steadily increasing since 2008, primarily driven by improved yields.
- Key destinations for the table grapes exports from Uzbekistan include Kazakhstan and Russia.

Source: UN Comtrade, mirror trade statistics

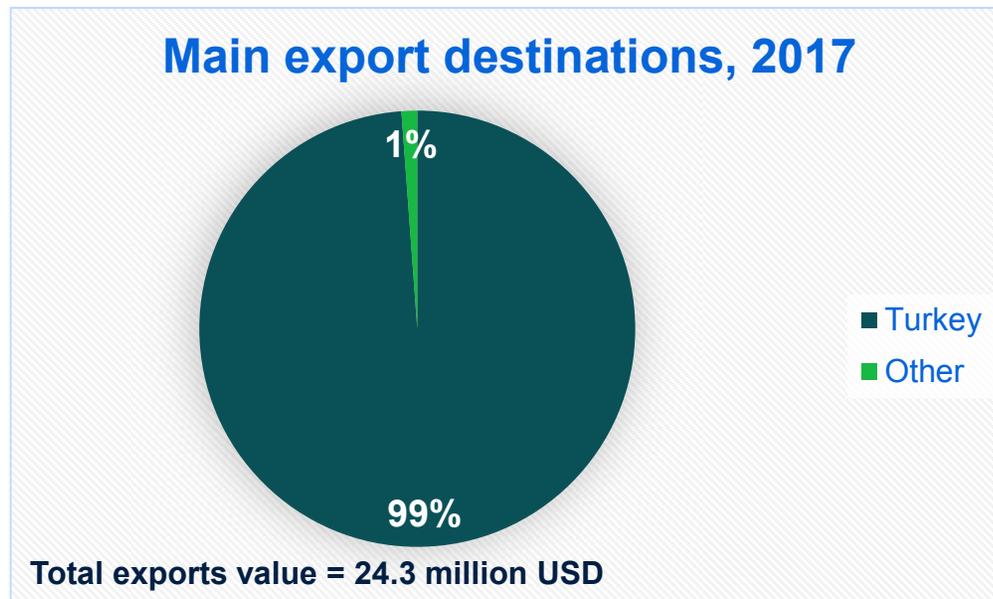
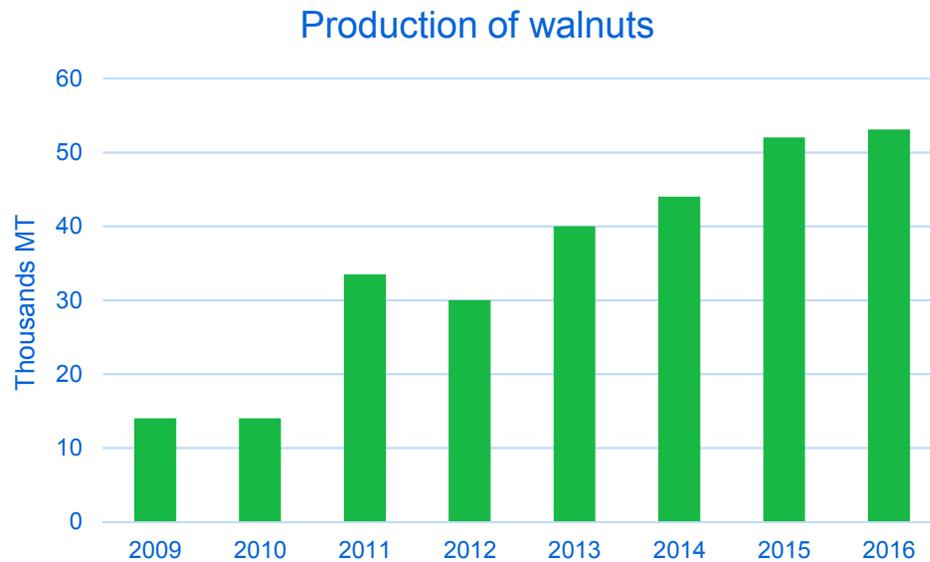
Apricots (fresh and dry)



- The production of apricots has drastically increased since 2000, reaching over 660,000 MT in 2016 (from 68,000 MT in 2000)
- In the last 17 years, Uzbekistan has been among the top three world producers of fresh apricots, behind Turkey and Iran.
- Fresh apricots are mainly exported to Kazakhstan and Russia.
- Geography of dry apricots is much more diversified – in 2017, Uzbekistan exported them to 26 countries

Source: UN Comtrade, mirror trade statistics

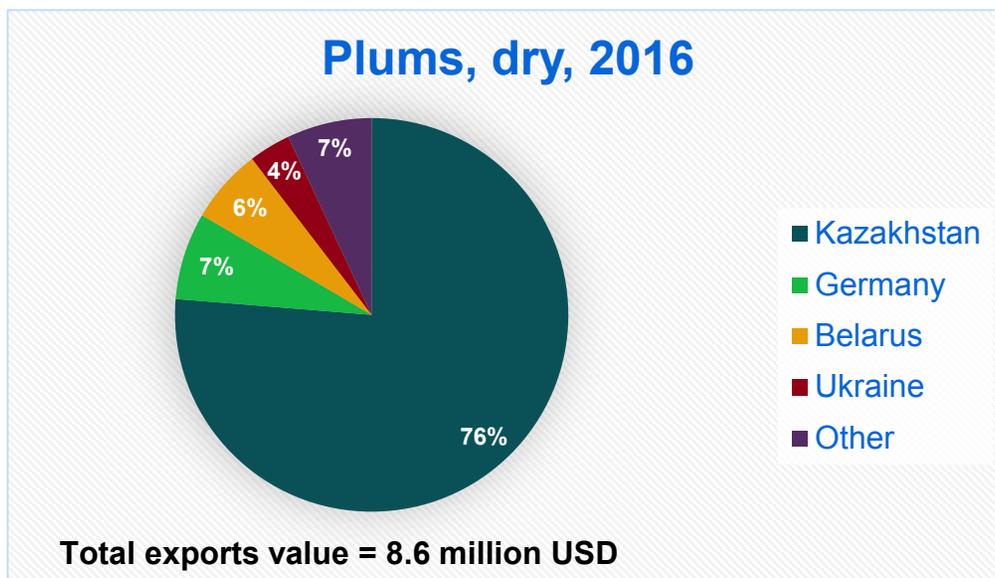
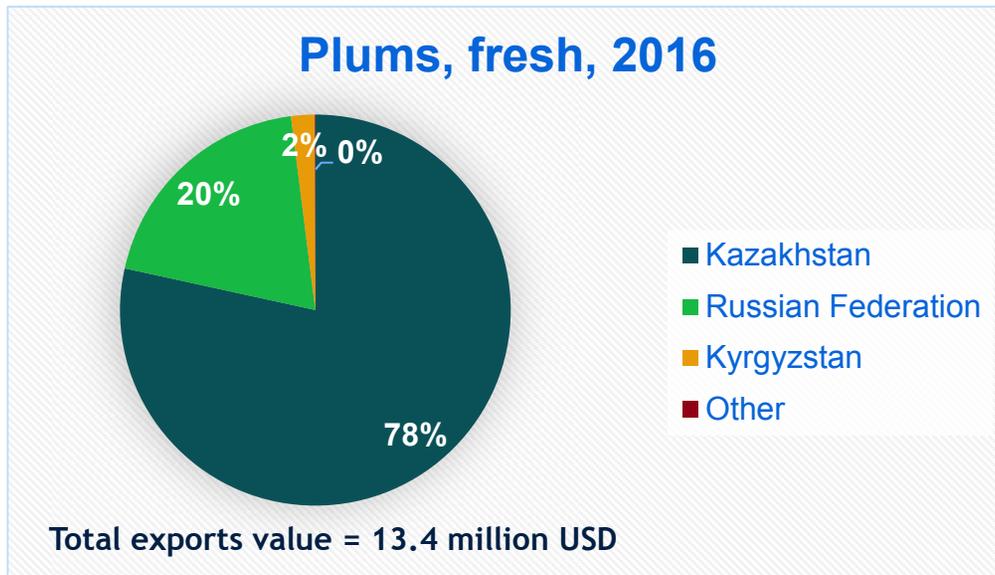
Walnuts, in shell



- Uzbekistan has a strong potential to increase both production and exports of walnuts.
- Production of walnuts has been increasing since 2012 both due increases in area and yields.
- In 2017 the President of Uzbekistan signed a decree "On creation and organization of activities of the Association of producers and exporters of walnuts" that established the Association, and allocated additional 50 mln. USD and 10,000 ha to new walnut plantations.

Source: UN Comtrade, mirror trade statistics

Plums (fresh and dry)



- Similarly to other horticultural products, production of plums has been increasing in Uzbekistan in recent years.
- Exports of fresh plums, however, remained rather volatile in the last five years.
- Exports of prunes saw a sharp increase in 2017, reaching 16.9 mln. USD in value (comparing to 8 million in 2016 and 2015).
- Fresh plums are mainly exported to Kazakhstan and Russia.
- Geography of prunes is much more diversified – in 2017, Uzbekistan exported prunes to 15 countries.

Source: UN Comtrade, mirror trade statistics

Key constraints: interviews with stakeholders

- ❑ All the stakeholders that were interviewed pointed to the potential Uzbekistan has in increasing the production of the selected horticulture products.
- ❑ However, they outlined a number of constraints that prevent Uzbekistan from increasing horticulture exports in general and taking the advantage of the Chinese growing horticulture demand, specifically. These included:
 - ❑ Lack of modern cold storage facilities
 - ❑ Lack of drip irrigation systems
 - ❑ Small production volumes relative to the Chinese import demand
 - ❑ Lack of long-term, well-established relationships between farmers, trading companies and importers
 - ❑ Limited trade networks outside of Russia and Kazakhstan; lack of foreign market knowledge
 - ❑ Lack of certification capacity in the country – national quality infrastructure lacks recognition in importing countries
 - ❑ Mismatch in the quality standards with the international ones
 - ❑ Inability to meet stringent Chinese quarantine requirements
 - ❑ Rewarding the khokims on the value of regional exports creates pre-conditions for corruption, i.e. khokims do not allow trucks with horticulture leave their region

PHASE 2 RESULTS: TAJIKISTAN



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Product selection: Export competitiveness assessment

Summary: Tajik exports that exhibit export competitiveness based on the RCA analysis, include apricots (dry and fresh), plums (fresh) and grapes (fresh). Among the analyzed products, the only one that Tajikistan exports to China is dry apricots, albeit in very small quantities (0.6. percent of total dry apricots' exports' value in 2015-2017).

Product	Tajik net exports (2015-2017 average), USD	RCA (2012-2016 average)	Chinese net imports (2015-2017 average) USD	Russian net imports (2015-2017 average) USD
Apricots (dry)	6,086,562	287.3	-665,132	26,998,989
Apricots (fresh)	833,364	35.6	496,490	66,240,193
Plums (fresh)	889,636	19.6	99,008,118	102,209,431
Grapes	2,655,497	5.8	532,000,000	573,936,999
Pork	-41,404	0.0	-	-
Soybean seed	-491,179	-0.2	-	-

Source: UN Comtrade, mirror trade statistics; own calculations

Note: **Chinese net imports of dry apricots increased from -3.5 mln USD in 2015 to 2.6 million USD in 2017

Net imports of fresh apricots increased from -1.5 mln. USD mln 2015 to 4.2 mln USD in 2017

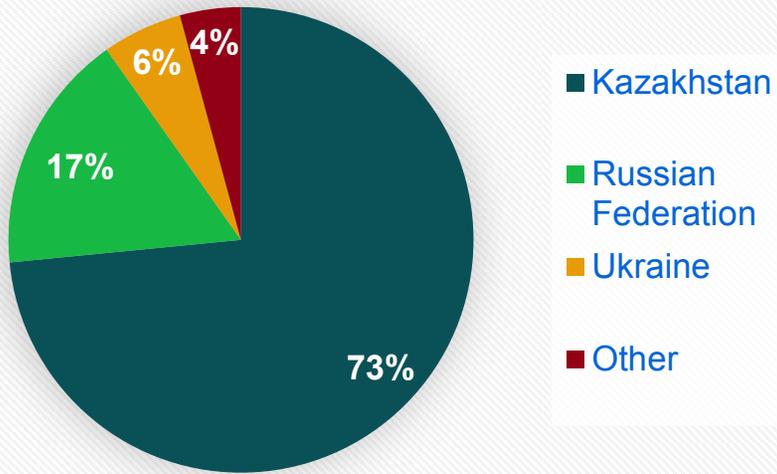
Product selection: Export competitiveness assessment (cont.)

Product	Tajik net exports (2015-2017 average), USD	RCA (2015-2017 average)	Exports to China, % of total (2015-2017 average)
Lamb	-120,800	-0.3	0.0
Rapeseed seed	-409,072	-0.8	0.0
Beef	-7,273,017	-2.6	0.0
Milk	-3,806,826	-2.8	0.0
Soybean oil	-1,557,340	-5.0	0.0
Soybean meal	-4,897,029	-5.5	0.0
Sunflower seed	-1,699,919	-8.9	0.0
Sugar	-21,832,412	-15.3	0.0
Sunflower oil	-33,300,000	-55.6	0.0
Wheat	-171,666,667	-76.4	0.0

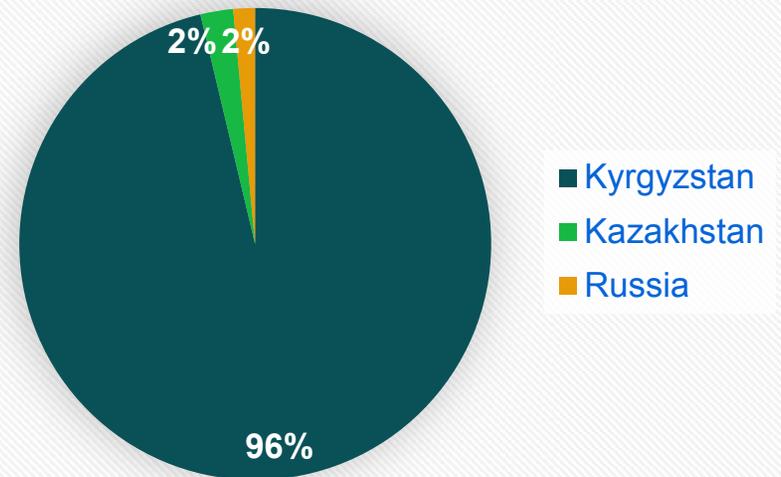
Source: UN Comtrade, mirror trade statistics; own calculations

Kyrgyzstan and Kazakhstan serve as major importers of the Tajik horticulture products of interest.

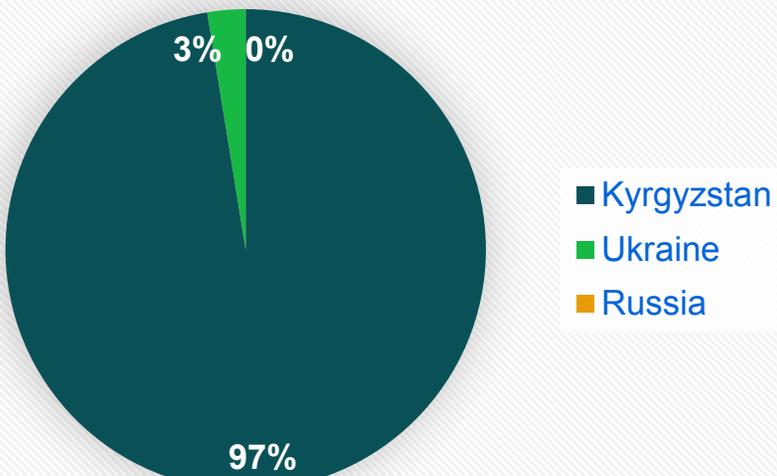
Apricots (dry), 2017



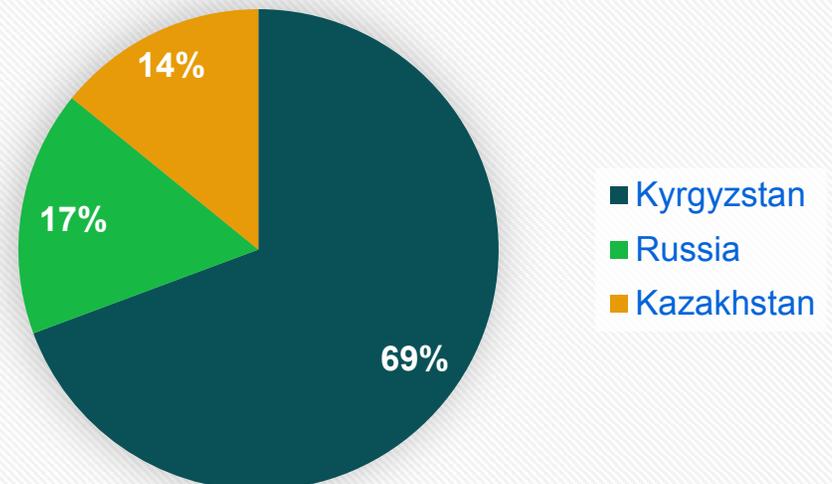
Apricots (fresh), 2017



Plums (fresh), 2017



Grapes (fresh), 2017



Source: UN Comtrade, mirror trade statistics

Key constraints for increased production

- ❑ Historically, Tajikistan was one of the largest producers of fruits in the USSR. However, following the collapse of the Soviet Union and the civil war, the production of stone fruits decreased as many farmers cut down their orchards, and the marketing channels collapsed.
- ❑ Starting 1999, the government of Tajikistan has made an effort to diversify agricultural production by encouraging farmers to produce more fruits.
- ❑ However, in order to make the horticulture sub-sector in Tajikistan more profitable and export-oriented, a number of constraints need to be addressed, including:
 - ❑ Stone fruit production and exports in Tajikistan is highly seasonal due to the lack of cold storage and processing facilities, as well as other logistical issues (i.e. lack of refrigerated trucks, and cumbersome customs procedures)
 - ❑ Access to irrigation water often remains limited
 - ❑ There is lack of high quality seedlings and saplings
 - ❑ There is a need for long-term access to land, plant protection and extension services

Key constraints for trade with China

- ❑ China could become an attractive market for Tajik fresh and dried fruit exports – the two countries share a border and a relatively large share of expatriate ethnic Tajik population lives in Xinjiang region.
- ❑ However, there are several constraints that prevent the exports of the selected products to grow, including:
 - ❑ Tajikistan's Pamir Mountains and China's Taklamakan Desert serve as geographic obstacles for rail and truck shipments, while air transportation remain prohibitively expensive;
 - ❑ Small production volumes relative to the Chinese import demand
 - ❑ Inability to meet the Chinese SPS requirements

GEOGRAPHY OF THE CHINESE HORTICULTURE IMPORTS



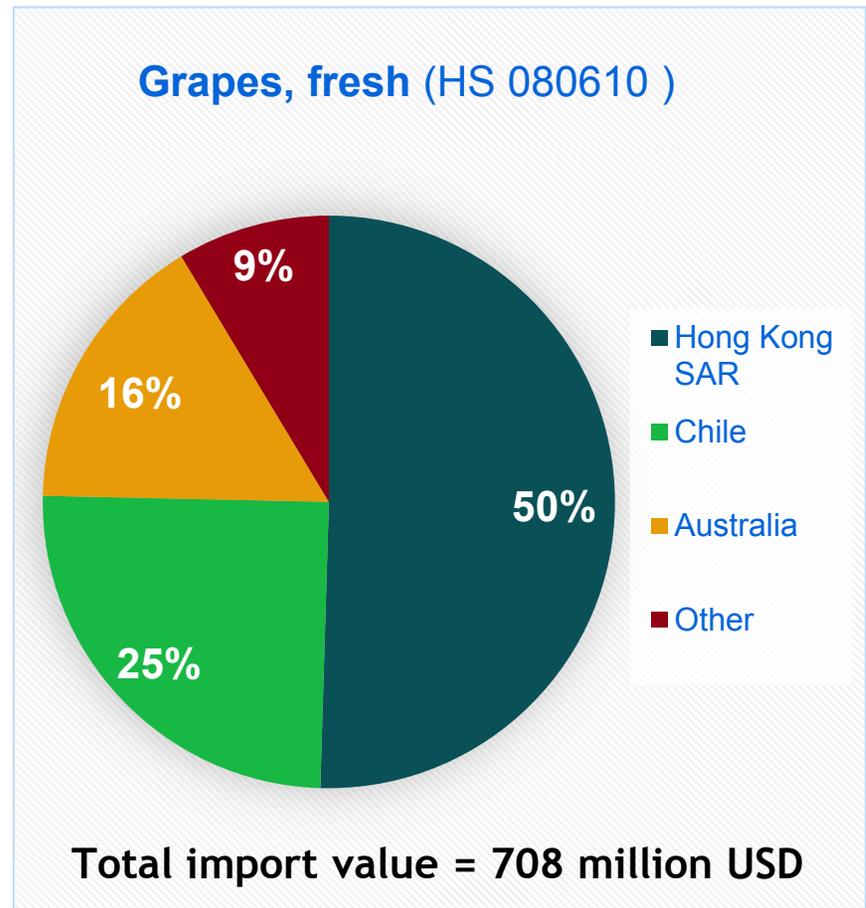
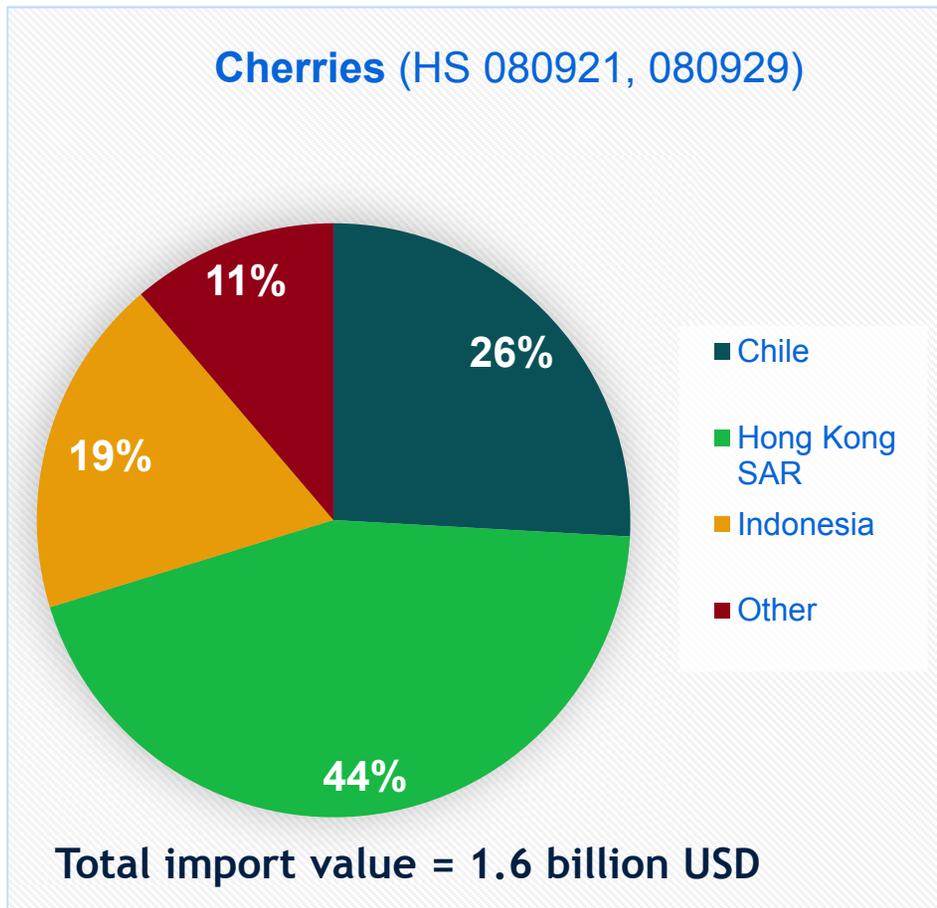
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Summary

- ❑ The purpose of this section is to list key horticulture importers for the Chinese markets that will potentially serve as key competitions for the CA products.
- ❑ Overall, in most cases, China imports horticulture products from a limited number of countries. Among the CA countries, exports to China remain very limited.

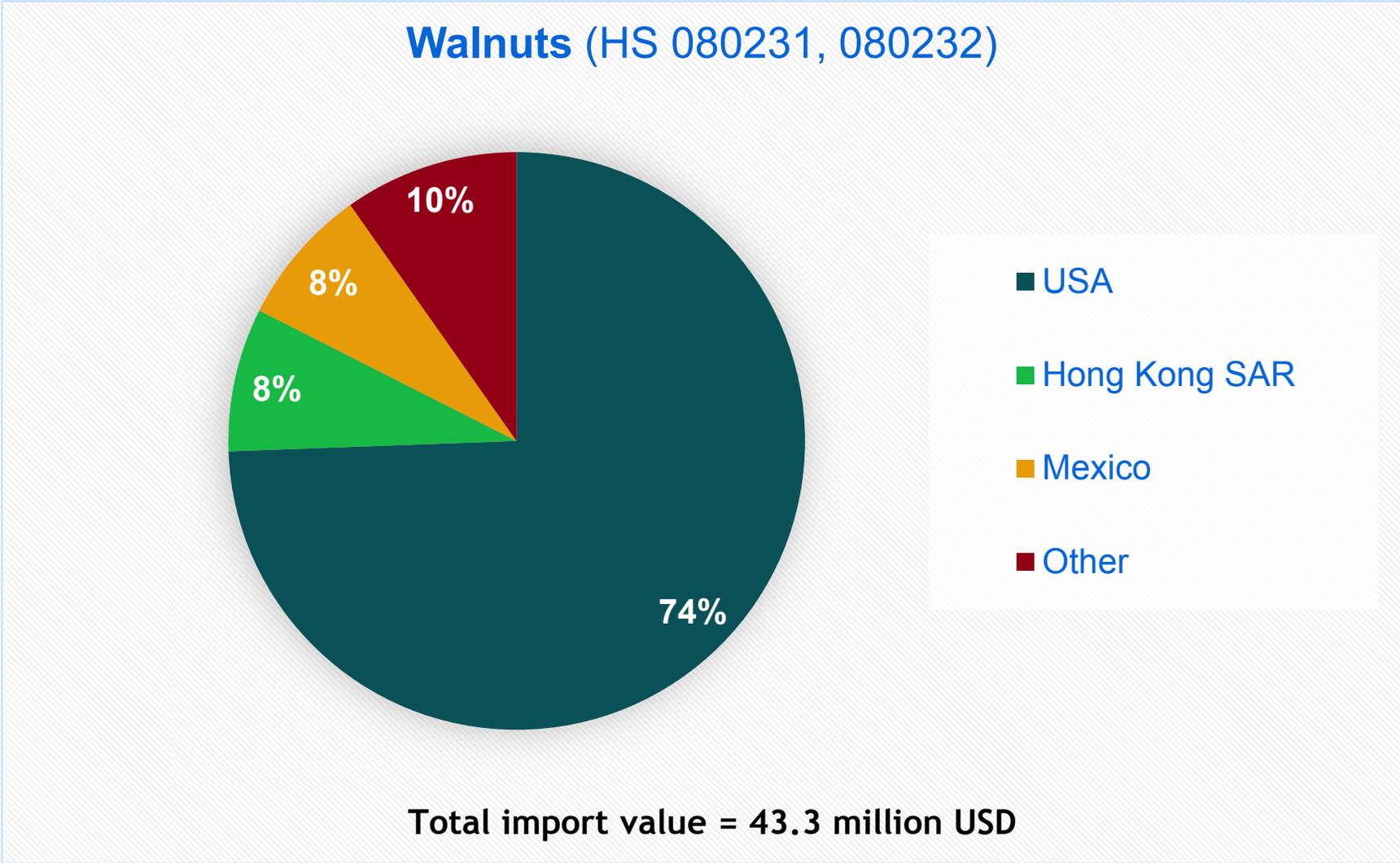
Cherries and grapes imports*



* For many of the horticulture products of interest, a large share of Chinese imports come from Hong Kong, which re-exports its horticulture imports. Key exporters of the horticulture products to Hong Kong include Chile, Australia, and USA.

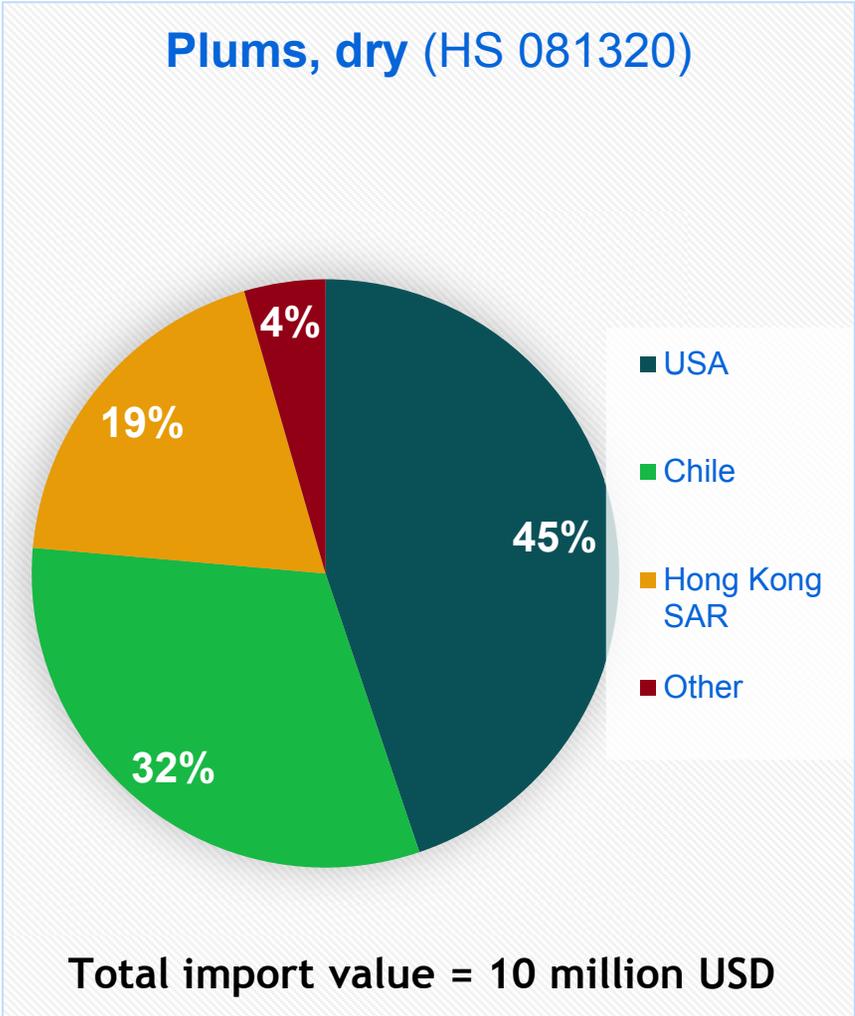
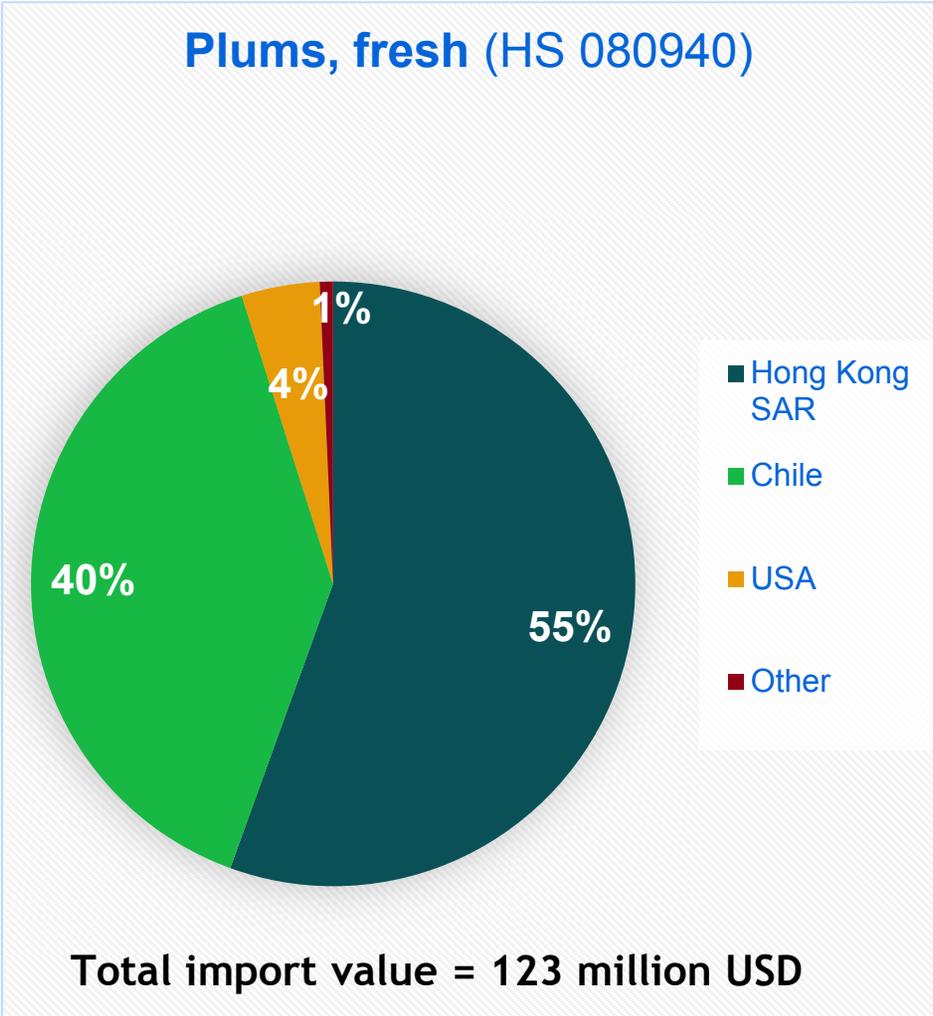
Source: UN Comtrade, 2017

Walnuts imports



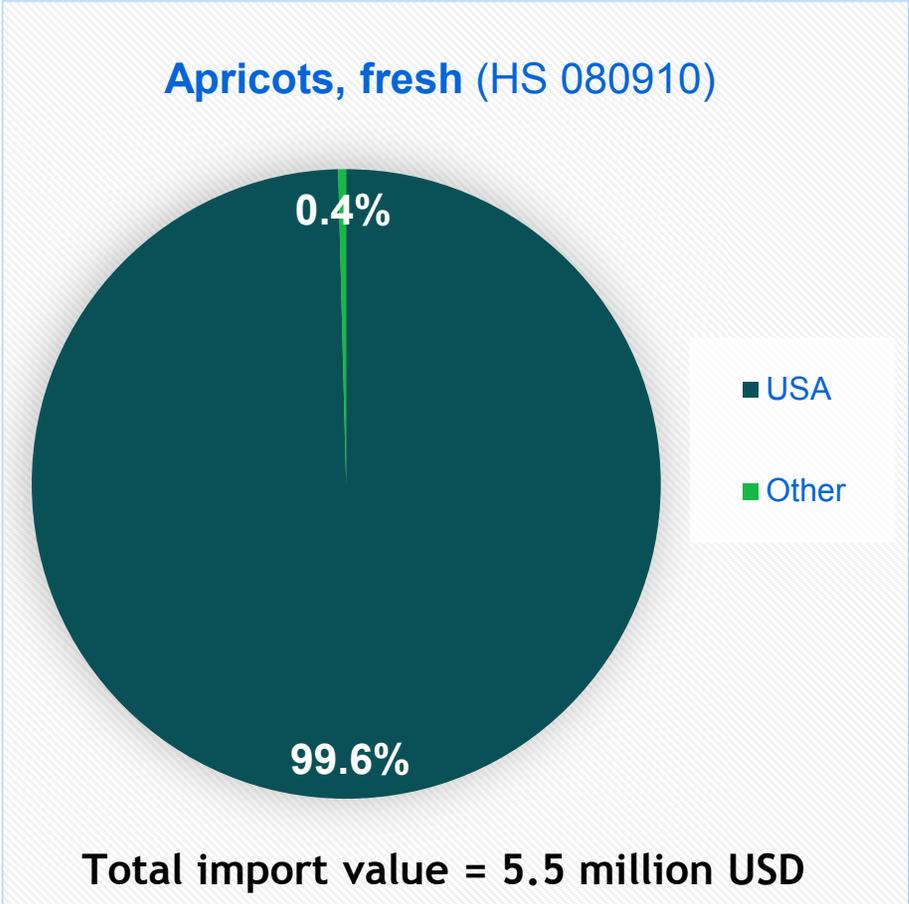
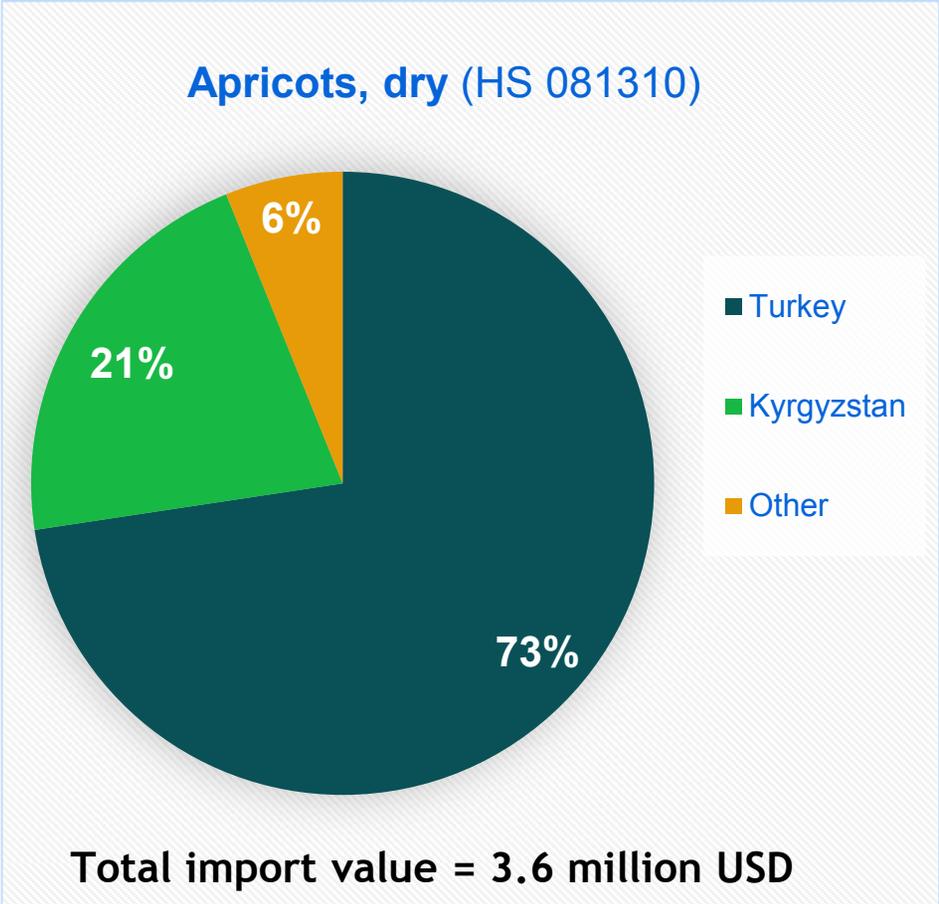
Source: UN Comtrade, 2017

Imports of plums (fresh and dry)



Source: UN Comtrade, 2017

Imports of apricots (fresh and dry)



Source: UN Comtrade, 2017

SUMMARY AND POINTS FOR DISCUSSION



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Preliminary product selection: short list for exports to China*

Kazakhstan	Kyrgyzstan	Tajikistan	Uzbekistan
Wheat	Apricots (fresh)	Apricots (fresh)	Apricots (fresh)
Sunflower seed	Plums (fresh)	Plums (fresh)	Plums (fresh)
Rapeseed seed	Walnuts, with shell	Grapes	Walnuts
	Cherries	Apricots (dry)	Grapes
	Plums (dried)		Cherries
	Milk		Plums (dried)
			Apricots (dry)

*Cells are color-coded to show an overlap in products across the countries.

Additional products for consideration

The following products were suggested by the national experts as the ones with the high potential for the exports to China, and could be considered for further analysis.

Kazakhstan	Kyrgyzstan	Uzbekistan
Lamb	Lamb	Raisins
Beef	Beef	Watermelons
Rapeseed meal	Honey	Melons
Rapeseed oil	Watermelons	
Sunflower oil		
Peas (dry)		

Constraints on exporting to China

Interviews with the country experts and literature review pointed to a set of constraints relevant to all (or most of) the CA countries that hinder their export development, including:

Production/processing level constraints

- Low yields, resulting in low production volumes
- Low quality and/or insufficient quantity of planting materials/inputs
- Insufficient irrigation
- Logistical constraints (cold storage, refrigerated trucks, etc.)
- Inefficient processing and packaging practices

Technical barriers

- Lack of adequate SPS capacities
- Mismatch between national and international quality standards
- Lack of compliance with the China rules, regulations and requirements, including labeling and packaging requirements

Institutional constraints

- Weak inland transport infrastructure
- Lack of export promotion capacity
- Cumbersome customs procedures
- Limited spending on agricultural research and extension

Next steps: Phase 3 (FY19)

Goal: to identify determinants of competitiveness for the selected agri-food value chains in the CA countries and suggest policy reforms and investments that could enhance competitiveness and facilitate expansion of agricultural exports from CA to China (and Russia)

Activities:

- Completion of the export competitiveness analysis for the products relevant to the Russian markets
- A full value chain analysis for the products selected in Phase 2, potentially in collaboration with IFC;
Key questions that the analysis will address:
 - a) what makes growing these products in CA competitive?
 - b) are there important constraints to expanding exports from CA in these products?
 - Quality?
 - Trade Policy?
 - Factors of production?
 - c) what policies and investments (both public and private) at the national level would improve the competitiveness of these products in each of the Central Asian countries and support the expansion of their export to China (and Russia)?
 - d) are there policies or investments that could be enacted at the regional level to facilitate the expansion of agricultural exports from Central Asia to China (and Russia)?
- Development of a report to communicate the findings and recommendations of the analysis
- Presentation and discussion of the findings in each of the CA countries

Thank you!