Final Report

Almaty-Bishkek Economic Corridor

Kyrgyz Republic National Wholesale Market Master Plans and Wholesale Distribution Center Development Strategy

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Acknowledgements

This report was prepared by Steve Allen, assigned by Asian Development Bank as International Wholesale Markets Development Specialist and Team Leader.

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ABBREVIATIONS

BCP = border-crossing point

BCI = border-crossing infrastructure

BRC – British Retail Consortium

OICMR – Officer in Charge of Market Rules

PNAC – Producer Nominal Assistance Co-efficient

WSDC = wholesale distribution center

WDC = wholesale distribution center

WHWM – World Union of Wholesale Markets – should be WUWM

Contents

1. Executive Summary:

The purpose of this Master Planning report is to assist the Kyrgyz Republic government and the Ministry of Agriculture to plan for the development of several new wholesale markets (WSM's) and Wholesale Distribution Centres (WDC's) across the country.

It looks to give the following planning guidance and develop options for:

i. Existing WSMs, their infrastructure, supply chains, trans-logistics and re-export routes
ii. WSM function in the supply chain of fresh produce
iii. Financial and operational management structures
iv. WSM regulatory framework – food safety and traceability
v. Planned WSM investments, agreements and financial models – private and public
vi. WSM value chains in terms of production capacity and throughput and alternative supply chains
vii. Options to achieving full traceability, building export potential, creating access for smaller farmers, maintaining food security

Furthermore, detailed analysis has been undertaken to:

i. define the site options for Kyrgyz Republic.
ii. assess the business case/feasibility of WSMs: the main financial operating conditions;
iii. analyze the regional impact of WSMs within the Almaty-Bishkek Economic Corridor (ABEC);
iv. review PPP models relating to regulatory systems for SPS and animal health certification and devolved service centers;
v. review legal structures for markets/tenants and visitors and the basis of charges levied, gate fees, and rental fees; and
vi. assess the position of WSMs within city development plans.

We observe the following recommendations as fundamental to the modernisation and transition of the Kyrgyz Republic Horticultural Market Systems and the main strategic driver for Transition of the sector.

Recommendations:

1. **Improving WSM function in the fresh food value chains.** Improved Food Security through reduced price fluctuations and food waste by introducing appropriate short and medium-term storage facilities [changing from a daily trading system to a 3-5 days hub and spoke trading system], strong government preference on low and stable prices for some socially relevant commodities. Modern WSMs can benefit downstream supply chains and agricultural producers through pull-effect of increased exports and provides access to markets for producers/collectives.

2. **Involving local governments in the ownership structure of WSMs and WDCs.** Partial public ownership can support the public oversight role to guarantee food security, food safety and minimize price fluctuations. Public stake can also help dilute the ownership structure of the current WSM system and has significant revenue potential for local governments.

3. **Modernization of existing WSMs.** Modern WSM infrastructure can accelerate growth of horticulture exports from Kyrgyz Republic and their safety, quality and export

certification standards through SPS controls, export certification, customs clearance, and aggregation in appropriate cold storage which can be used for exports and imports if close to major consumption points. Certification for exports also reduces border crossing risks for horticulture products and hence reduces costs and risks for exports. The modernized WSMs can accommodate specialized zones for producers and service providers.

4. **Greenfield development for growing consumption points and cross-logistics nodes.** Newly established WSMs and WDCs can lead to diluted ownership and introduce more competition in the agri-trade and across the supply chain, with consideration of the involvement of additional private operators in the supply chain.

5. **Improved and expanded regional integration for supply consistency.** Harnessing specific seasonality supply issues, such as availability from Kyrgyz Republic in July-December and re-export trade to Russia and re-exports for imports for Kyrgyz Republic, through in-transit trade via Kazakhstan January-June. Improving contractual arrangements between WSMs in Almaty and Bishkek for formalized exports due to quality and safety risk of informal trade, in absence of proper SPS and certification (system of trust and relationship). Improving public and private sector commitment to expand production base in ABEC to reduce dependency on Russian imports.

A second set of recommendations below aim to deal with Master Planning and Wholesale Market Development Specifics and their base for implementation. These are also discussed in detail in sections 2 – 10 of the National Master Plan Report.

6. **Master Plan and Wholesale Market Scale**

The analysis of the Market and Systems Food Account for Kyrgyz Republic shows a country largely in balance with its Horticultural production levels, consumption levels and import and export position based on 2017 figures of 2.7m tonnes of production, 131,302 tonnes of Imports and 143,909 tonnes of exports.
We can also see that the split of the 2.7m tonnes of production is transacted as follows:
Through Wholesale Markets – 1.47m tonnes (estimate)
To processing – 1.32m tonnes (estimate)
If we consider consumption we can see that the proposed WSM centres of Bishkek – Dordoi Food and Bishkek – Alamedin transact 785,720 Tonnes, (estimate) 621,000 tonnes (estimate), respectively.
From this we can conclude our scale requirement of the WSM's Dordoi Food – 52,000 sqm (estimate) and Alamedin as 41,400 sqm of buildings.

7. **Proposed Wholesale Market Locations**

Although there may be a preference for a Greenfield site led WSM National Master Plan development, this goes against the evidence that the main Horticulture and Market Systems is already underpinned by the two WSM's in Bishkek, Dordoi Food and Alamedin. This is furthered strengthened by analysis of production aggregation flows and consumption and In-Transit Flows both ABEC and wider Uzbekistan and China. We see Bishkek as a two centre WSM Hub focused very much on the consumption needs of the fast-growing City, and outward trade functions.

However, the recommendation would also be to construct and implement new WSM HUBs in Tokmok and Kara-Balta to ensure unrestricted growth and aggregation at the East and

Western production areas and at the same time to ensure that the food system is not disrupted by differing standards of operation and facilities and maximises opportunities for through trade to Russia.

8. **Wholesale Market Sites and WSM Development Models (including Financial Models)**

It is clear that the WSM Master Plan development success is dependent on site availability and to a certain extent this is compromised by the fact that the existing WSM's occupy the key locations. However, this is also seen as an advantage as existing markets systems can be built on quickly to accelerate the overall WSM Countrywide Master Plan.

Section 6 looks in detail at all the current site locations, options, facilities, functions and master plan developments including new and alternative site developments to the existing WSM's. Alternative supply chain developments are also reviewed in Section 4 of the report to demonstrate how the horticulture sector is beginning to change though the growth of supermarkets and the use of digital trading platforms. There is growing momentum from investors and the private sector operators looking to secure the trading opportunity for Horticulture in Kyrgyz Republic and the ABEC.

The issue of site availability can also influence the regulatory and financial models for the WSM master plan development.

Considerations of a change in the Wholesale Market Trading Law to B2B only have been made within this report as well as setting down a suggested set of definitions for WSM's and this could impact on the ability for the current WSM operators to develop their existing site due to the traditional bazaar style facility and therefore the entanglement and lack of separation between wholesale and retail.

This also impacts on the proposed financial model and its range and scope.

A PPP structure is also considered to meet the Governments objective of a private sector led master plan development and divesting more operational control.

However, the PPP model also provides an important opportunity for the Government to stay in the role as main Strategic Sponsor, Regulator and provider of a function of Public good, either in a transitional period to help subsidise the high investment costs through land or other incentives or as short-term asset holder before exiting to the private sector in say 5 – 7 Years.

9. **As a conclusion we highlight the strength and value of the regional integration with Kazakhstan and in particular the WSM's in Almaty, Altyn Orda.**

If is evident that at least 25% of Kyrgyz Republic's exported produce goes via Kyrgyz Republic WSM's in Bishkek to Almaty, with seasonal produce from Osh of high quality and high levels of demand.

10. **Following on from the presentation of the draft final report to the Kyrgyz Republic, Ministry of Agriculture a further consultation and discussion group meeting was held with the two main WSM Operators, Dordoi Food and Alamedin.**

During that meeting, positive and comprehensive feedback was given from a private sector operator perspective on the Master Plan proposals and in addition a number of alternative suggestions to incorporate.

The detailed feedback is presented in Appendix C and in addition Dordoi Food and Alamedin have committed to make this group meeting and standing arrangement to help progress the Master Plan project for the Kyrgyz Republic.

2. Development Principles

Throughout this process the Government of Kyrgyz Republic and the ministry of Agriculture has sought clear guidance the on WSM Concept and an understanding of the future food systems and WSM requirements.

We summarize the following as the key recommended principles:

2.1 Principles:

1. Food security, food safety, and horticulture exports are high national priorities.
2. Public and Private sector will lead the operation of the WSMs. Public sector should get involved through a public-private partnership involving local governments and/or The Ministry of Finance will play a coordination and oversight role.
3. The existing market infrastructure in Bishkek have good site locations and are established as a key part of the local farmers access to customers to sell their produce. This local produce supply chain is the source of many products and fair pricing. The public sector could capitalize on this existing strength by investment in the sites and infrastructure and promotion of deeper downstream integration and access for small local farmers.
4. The existing market infrastructure is confused by the mix of bulk wholesale storage and trading and retail bazars located within the same zones. This leads to price disruption, congested sites with problems for logistics and site circulation and difficulties with rules and regulations enforcement. A change in the Kyrgyz Republic Law of Trading Activities is recommended to separate Wholesale from Retail activities either by site location or site zoning.
5. The future Development and Financial model should enable control over regulatory and operational management changes e.g. strong link to food security, price stabilizations and waste/import substitution and future production increases and export development
6. The development of the Wholesale Market platform can be the starting point for economic growth of the Horticulture sector. Improved access for the domestic production base to more domestic/regional and International customers and a better understanding of their safety, quality and produce supply volume will lead to a pull through of increased and diversified production. The introduction of better packaging and logistics and storage systems will protect perishable produce and reduce in transit and spoilage waste, increasing the volume for sale. The increased supply will reduce the need for expensive imports and develop a surplus for supply to export markets, leading to economic gains through trade and currency reserves.

3. Wholesale Markets (WSM) and Wholesale Distribution Centres (WDC) Current Situation: Introduction

The following tables are designed to substantiate and provide a planning framework for the proposed and new Wholesale Market System:
The tables are as follows:

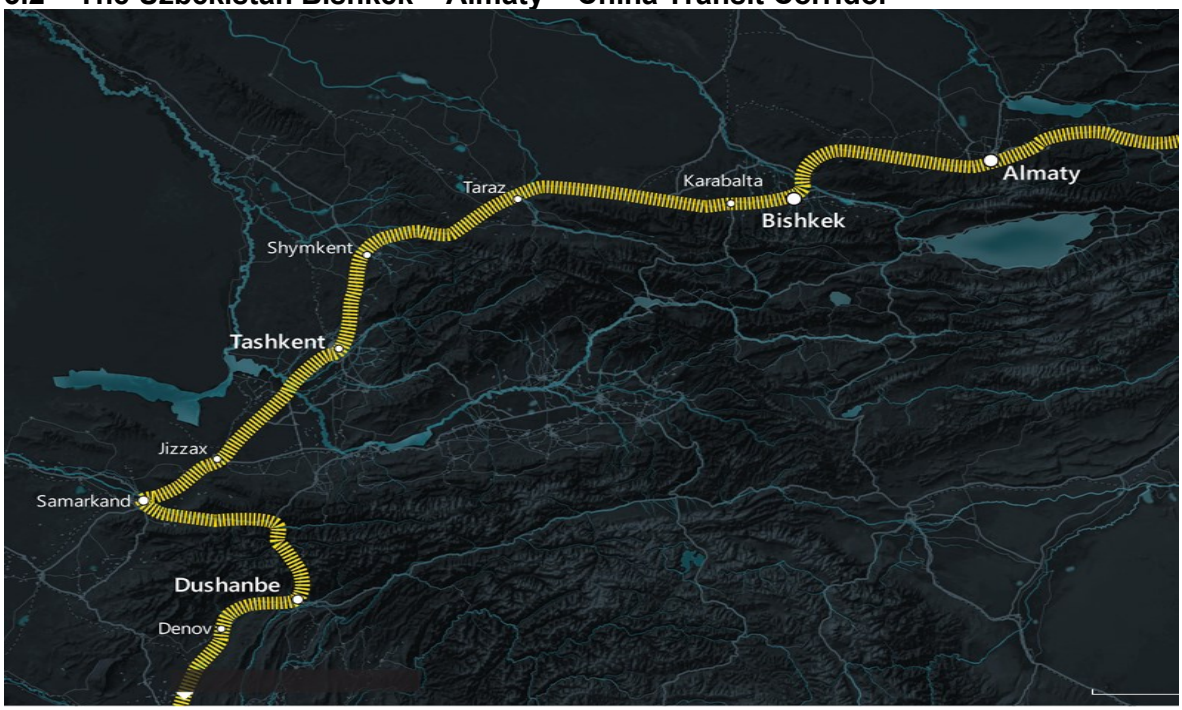
1. Wholesale Markets – As Is Assessment (3.1)
2. The Uzbekistan Bishkek – Almaty – China Transit Corridor (3.2)
3. Wholesale Markets - Locations and Transit Systems (3.3)
4. Domestic Production (Tons), Imports/Exports (Tons), Regional Production Aggregation Points(Tons) (3.4)
5. Consumption/Utilization (Tons) (3.5)

3.1 *Wholesale* Markets – As Is Assessment

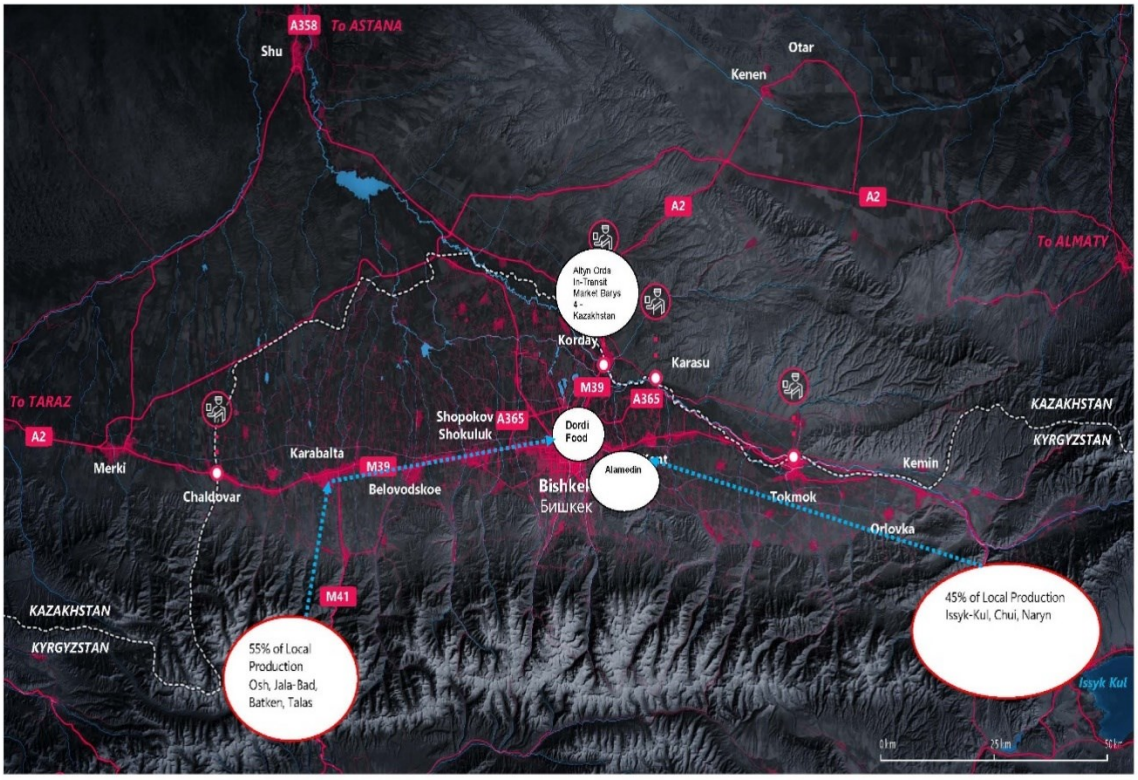
Site Option/ Existing Market Infrastructure	Location and Area and Ownership	Supply Chain Functionality	Expansion Land/Expansion Plans	Regulatory Position	Operational Management Agreement	Tenant Costs	Stakeholder Position/Relationship to City Masterplans/Zoning/Urban Food Systems	Potential Investment Model
Dordoi Food Bishkek	Bishkek – located on main Bishkek to Osh road Private Land and Private Operator	Main partner to Altyn Orda with 250MT per day and 450MT in high season shipped to AO to supply KAZ markets and consumption. This is 80% of the produce in flow and over 20% of the Kyrgyz surplus production e.g. Osh and Uzbek imports. Outflow the remaining 20% goes to Bishkek retail Dordoi Bazaar and Sary-Orzon Bazaar. In flow and outflows from trans logistics and re-export, particularly citrus from Iran and to Russia. Also works closely with KAZ side Altyn Orda Kordai Bazaar 25km	20 hectares with option to reconfigure old buildings to expand site infrastructure	The first and only devolved SPS and Veterinary Inspection Lab outside of the central lab in Bishkek. Infrastructure to be provide under the PPP structures and agreement.	24/7 operation Tenant agreement not provided	Not declared at this stage	Likely to expand as part of joint development of consolidation and customer processing HUB linked to Altyn orda system as described Dordoi Kyrgyz side and Kordoi KAZ side	Acknowledged as priority development option by MOA and PPP development

		from Bishkek and 34 Hectares of aggregation and consolidation facilities for vegetables directed towards the Russian territories. Has modern cross docking and storage facilities.						
Site Option/ Existing Market Infrastructure	**Location and Area and Ownership**	**Supply Chain Functionality**	**Expansion Land/Expansion Plans**	**Regulatory Position**	**Operational Management Agreement**	**Tenant Costs**	**Stakeholder Position/Relationship to City Masterplans/Zoning/Urban Food Systems**	**Potential Investment Model**
Bishkek	Bishkek – Alamedin Bazaar Private Land and private operator Central city 30 hectares	Internal Bishkek City Supply Chain system for restaurants and retail consumption. Wholesale Supply chain functions from 4am and when the restaurateurs have purchased produce the remaining produce goes to the retail customers. Wholesale volume is 120MT per day and 20,000 customers per day. Inflows are from Chu and Issy-Kul Oblasts farmers.	20 hectares site with reorganisation planned for wholesale function. Masterplans developed to create 20,000sqm underground facility and 2 level (floor) trading centres,	SPS and Veterinary inspection lab in evidence for full certifications	Operates 24/7 but tenancy agreements not provided 3000 businesses within the market	$1.5 for wholesale truck parking fee 3 – 10 MT truck gate fees $4 – $9	High quality produce set in a regulated food safe retail and wholesale environment. At 120 MT per day and expanded capacity to 20,000sqm of wholesale it could play a part as an internal WDC alongside other external sites owned by Dordoi.	Owner/operator interested in PPP structure Infrastructure build costs at $400 per sqm
Bishkek	Bishkek – Stepnoye Public Land – Greenfield site 500m from KAZ/KYRG Border	n/a	20 hectares	n/a	n/a	n/a	n/a	Preferred Investment Option of MOA

3.2 The Uzbekistan Bishkek – Almaty – China Transit Corridor



3.3 Wholesale Markets - Locations and Transit Systems



3.4 Domestic Production (Tons), Imports/Exports (Tons), Regional Production Aggregation Points(Tons)

KYRGYSTAN

Wholesale Market, Total Production Value Chain and throughput (Fruit and Vegetables)-Baseline Data

KYR SOMS 68.14

Source:	Source: MOA "national statistics" 2017		Wholesales market prices estimated from 10-15% below retail bazar prices	Prices collected bazar level, Sept. 2018. Add with 1.5 to display	Aggrication prices from 2-15 Soms/kg depending on crops
	KYRG Total pr	KYRG	Kg	Kg	Kg
Type of Produce		% share of F&V	Aver. Wholesale Price	Retail Price	Farm-gate Price
			Price/Kg		
Apples	**138**	**4.67%**	**83**	**98**	**73**
Apricots	53	1.80%	64	75	54
Beetroot	23	0.77%			
Cabbages and Brassicas	147	4.99%	34	38	31
Carrots and Turnips	184	6.23%	34	38	31
Cherries (Cherry)	9	0.30%			
Chillies and Peppers		0.00%	34	38	30
Cucumbers, greenhouses			0	0	0
Cucumbers, open land	**118**	**4.0%**	**41**	**45**	**38**
Egg plant			0	0	0
Garlic	53	1.8%	0	0	0
Grapes		0.0%	102	120	87
Kiwi fruit	0	0.0%	0	0	0
Melons	22	0.7%	41	45	38
Onion	202	6.8%	20	23	17
Peaches and Nectarines	2	0.1%	128	150	113
Pears	133	4.5%	77	90	67
Plums	22	0.7%	38	45	28
Potato	**1,388**	**47.0%**	**20**	**23**	**17**
Tomatoes, greenhouses					
Tomatoes, open land	**229**	**7.8%**	**20**	**23**	**17**
Watermelon	231	7.8%	11	12	9
Total	**2,952**	**100%**	**27.82**	**31.49**	**24.16**
$ conversion Average Basket price MT			408	462	355
As % of Retail Price			88%	100%	77%
% Mark-up			15%	13%	

Regional production

MOA data base devides in fruits, veg. and potato per oblast. With input from seniour advisor from MOA the weight of each product is estimated

Type of Produce	Batken	Jalabad	Issyk Kul	Osh	Chui	Talas	Naryn
Apples	**35**	**23**	**20**	**33**	**13**	**12**	**0**
Apricots	21	3	21	5	3	-	-
Beetroot	-	-	-	-	7	7	-
Cabbages and Brassicas	22	29	-	29	44	-	-
Carrots and Turnips	-	-	50	29	9	37	-
Cherries (Cherry)	-	-	-	-	-	-	-
Chillies and Peppers	-	-	-	-	-	-	-
Cucumbers, greenhouses	-	-	-	-	-	-	-
Cucumbers, open land	**-**	**32**	**-**	**18**	**45**	**-**	**-**
Egg plant	-	-	-	-	-	-	-
Garlic	-	-	-	-	-	-	-
Grapes	-	-	-	-	-	-	-
Kiwi fruit	-	-	-	-	-	-	-
Melons	1	13	-	3	4	-	-
Onion	20	30	-	30	101	-	-
Peaches and Nectarines	-	-	-	-	-	-	-
Pears	34	23	20	32	-	-	-
Plums	-	-	-	-	-	-	-
Potato	**46**	**145**	**380**	**222**	**223**	**272**	**98**
Tomatoes, greenhouses	-	-	-	-	-	-	-
Tomatoes, open land	**13**	**61**	**11**	**35**	**87**	**21**	**2**
Watermelon	-	139	-	35	58	-	-
Total	193	497	502	472	593	349	100
$ conversion Average Basket price MT	7%	18%	19%	17%	22%	13%	4%

Transporter/Wholsaler Trading Account $

Average per tonne price $	354.57
Transport Costs per tonne	19.57
Daily fee for parking and offloading etc	1.47
Other	
Total average net per tonne $	32.68
$ Net Income Generation retailers	53.80

$ Net Income Generation wholesale market

Total Throughput Seasonally adjusted

per day season A@x% of production

per day season B/C@ x of production

Total Throughput (Tonnes) Seasonally adjusted

Estimated Spatial Conversion sqm requirement wholesale structure throughput

	Soms	USD
To rent a 3 tons truck	4000	58.70
Dordoi export sticker		1.00
Trading platform per day, 3 tons truck	100	1.47
Trading platform per day, big truck	500	7.34

3.5 Consumption/Utilization (Tons) (3.5)

	Sources:																		
1	www.Trademap.org												food%	processing%	feed%	seed%	waste%	utilized%	
2	Muktar extract from National statistics (Anders addapted to HS codes)																		
3	Caluculated												23	23	16.1	21.1	16.2	100	
	Source:	1	1		1	1		2			3								
	ALL 2017 numbers	tons	tons		1000 USD	1000 USD		tons	1000 USD		tons		Utilization						
		Import KYR	Export KYR		Import KYR	Export KYR		Produced	Produced		Balance (consumed in country)								
Product code	Product label	Quantity in 2017	Quantity in 2017		Value in 2017	Value in 2017		Volume	Value		Volume		Food	Processing	Feed	Seed	Waste		utilization
'0701	Potatoes, fresh or chilled	7,082	10,791	330.1	2,338	5,449	504.9578	1,388,000	612,108		1,384,291		320,555	320,555	221,700	290,700	223,700	641,109	1,377,209
'0702	Tomatoes, fresh or chilled	8,641	1,016		6,791	900		229,000	100,989		236,625		53,065	53,065	36,700	48,123	37,031		227,984
'0703	Onions, shallots, garlic, leeks and other alliaceous vegetables, fresh or chilled	5,831	19,078		1,587	9,359		254,700	112,323		241,453		54,843	54,843	37,930	49,735	38,272		235,622
'0704	Cabbages, cauliflowers, kohlrabi, kale and similar edible brassicas, fresh or chilled	2,698	5,673		912	1,504		147,200	64,915		144,225		32,941	32,941	22,783	29,873	22,988		141,527
'0705	Lettuce "Lactuca sativa" and chicory "Cichorium spp.", fresh or chilled	11	14		10	30		0	0		-3						0		0
'0706	Carrots, turnips, salad beetroot, salsify, celeriac, radishes and similar edible roots, fresh ...	8,687	6,812		1,509	3,036		183,800	81,056		185,675		41,195	41,195	28,491	37,358	28,748		176,988
'0707	Cucumbers and gherkins, fresh or chilled	5,904	166		3,458	36		118,000	52,038		123,738		27,427	27,427	18,969	24,872	19,140		117,834
'0708	Leguminous vegetables, shelled or unshelled, fresh or chilled	26			7	0		0	0		26								0
'0709	Other vegetables, fresh or chilled (excluding potatoes, tomatoes, alliaceous vegetables, edible ...	2,549	3,257		1,906	2,489		0	0		-708								0
'0710	Vegetables, uncooked or cooked by steaming or boiling in water, frozen	656	46		299	113		0	0		610								0
'0711	Vegetables provisionally preserved, e.g. by sulphur dioxide gas, in brine, in sulphur water ...	125	2,575		71	2,383		0	0		-2,450								0
'0712	not further prepared	192	18		163	259		0	0		174								0
'0713	split	1,679	63,612		736	52,527		0	0		-61,933								0
'0714	artichokes, sweet potatoes and similar ...	1			1	0		22,800	10,055		22,801		5,307	5,307	3,670	4,813	3,703		22,800
		44,082	113,058	330.1	19,788	78,085		2,343,500	1,033,484		2,274,524		535,332	535,332	370,243	485,474	373,583		2,230,442
'0801	or not shelled or peeled	126	1		137	14		0	0		125		125						0
'0802	(excluding coconuts, Brazil nuts ...	2,349	3,360		2,108	7,094		0	0		-1,011		0						0
'0803	Bananas, incl. plantains, fresh or dried	6,009	30		3,286	30		0	0		5,979		5,979						0
'0804	mangosteens, fresh or dried	2,589	92		1,553	205		0	0		2,497		2,497						0
'0805	Citrus fruit, fresh or dried	7,798	7		5,168	8		0	0		7,791		7,791						0
'0806	Grapes, fresh or dried	18,147	3,067		9,870	1,608		0	0		15,080		9,052	1508	0	0	4520		15,080
'0807	Melons, incl. watermelons, and papaws (papayas), fresh	19,095	756	423.4	8,084	196	259.2593	252,600	86,137		270,939		2,622	2,622	176,900	400	69,300		251,844
'0808	Apples, pears and quinces, fresh	8,081	5,652		3,176			270,500	92,241		272,929		132,424	92,697	13,242	15,891	13,242		264,848
'0809	fresh	19,464	5,291		15,462	4,716		85,100	29,019		99,273		39,905	27,933	3,990	4,789	3,990		79,809
'0810	currants, gooseberries and ...	3,021	1,775		2,764	1,898		0	0		1,246		1,246	0	1,400	0	1,500		0
'0811	water, frozen, whether or not ...	39	83		63	40		0	0		-44		0						0
'0812	gas, in brine, in sulphur ...	100	130		123	133		0	0		-30		0						0
'0813	"papayas", tamarinds and other edible ...	402	10,607		259	24,456		0	0		-10,205		0						0
'0814	dried or provisionally preserved ...							0	0		0		0						0
		87,220	30,851		52,053	40,398		608,200	207,396		664,569		201,641	124,760	195,533	21,079	92,553		577,349
	TOTAL	131,302	143,909		71,841	118,483		2,951,700	1,240,880		2,939,093								

4. The Functions and Characteristics of the Value Chain

4.1 Wholesale markets

The wholesalers play a central role in the logistics operations, like packaging, distribution, transportation, and delivery to retailers, supermarkets and consumers. They are also involved in export and import. The wholesale markets are also important for the vertical coordination of food markets while balancing supply with demand and setting prices. In this way, they help reduction of marketing costs while promoting stable markets for local farmers and producers. Ideally the wholesale markets support in agro-food distribution mainly in two ways. Firstly, they contribute to competition by establishing conditions for transparent price policy at relatively low costs. Secondly, they enhance access to market information for different actors. Traders and mediators play a significant role in the marketing of products between wholesalers and consumers.

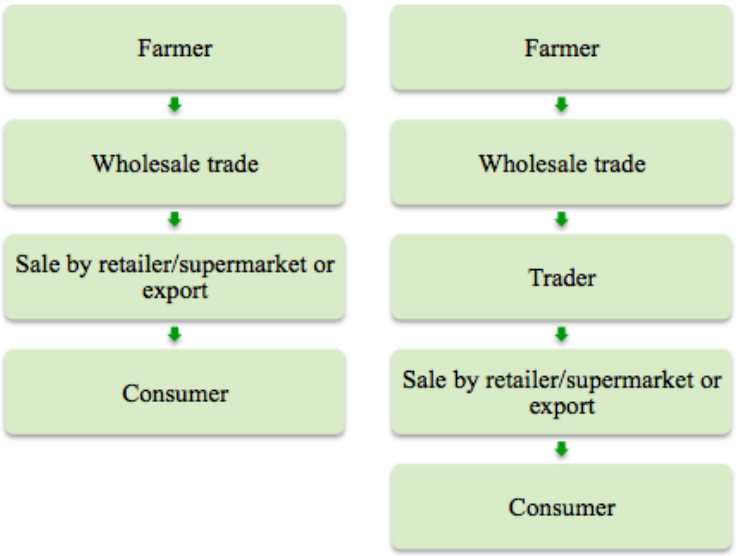


Figure 16. The role of wholesale markets in the agro-food value chain

Six chains are identified in the supply of agricultural products from the farm gate to the consumer. The chains and their share of the total sales is shown in Figure 11.

Small farmers bring their produce direct to the market bazaars (retailer). They sell directly from their cars and small trucks outside the bazaar. This chain handles small volumes amounting to around 5% of the total production.

Small farmers sell their products from the farm gate to traders who will bring the products to the large wholesales' markets. It is estimated that 35% of the production passes by this supply chain.

Around 30% of the production goes to processing industries, which collect directly at all sizes of farms thereby passing the wholesales markets.

Larger farmers will use collectors and truck companies to aggregate their product who sell to wholesalers who then sell to the retailer. This chain handles around 20% of the distributed products.

Large national farms and cooperatives will bypass the wholesale/retail market and transport direct to storages for further export. This chain amounts to around 5% of the product distributed.

Larger national farms use Trade Logistic Centres (TLC) and supermarkets' own logistic centres to reach the supermarkets directly. Estimations show that around 5% of the production goes through this chain.

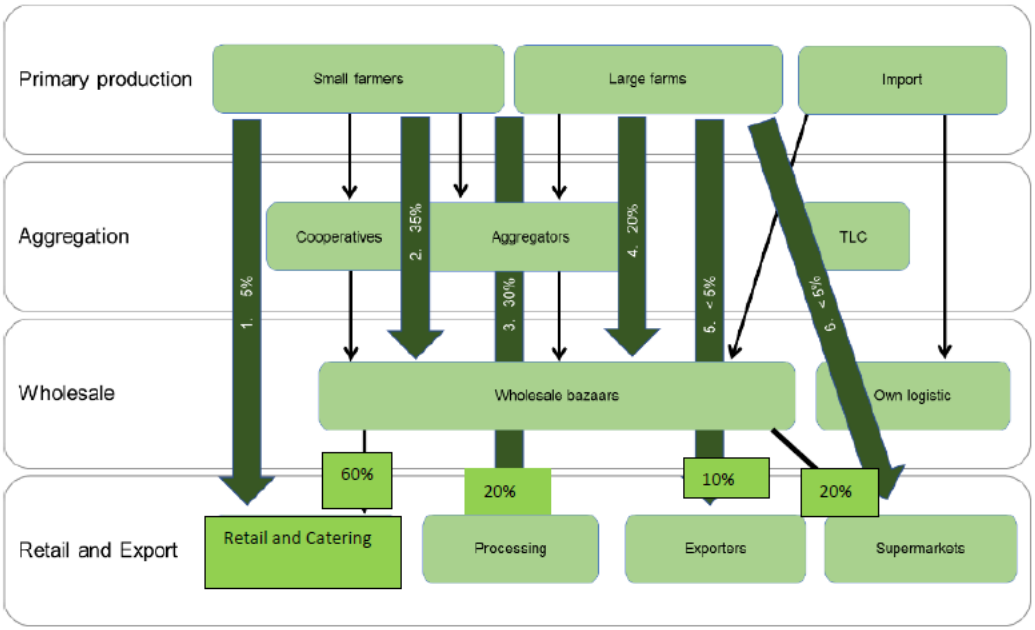


Figure 11. Overview of downstream value chain

Figure 11. Overview of downstream value chain

4.2 Wholesale Development Centres and Trade Logistics Centres

Definitions:

- **Trade Logistics Centre (TLC):** function to take produce from production (field) and process (clean, grade, pack) and store for collection by transport and logistics company to deliver to Wholesale Market (WSM), Supermarket or Processor. Has no front-of-house-sales or buyers-walk-facility. Single entity.
- **Wholesale Distribution Centre (WDC):** Same function as TLC but can be made up of many businesses, usually acting as a co-operative.

In the Kyrgyz Republic TLCs are not well developed and do not play an important role in the distribution. Most of the aggregated products from the farms are loaded from cars to vans to trucks before final transport to the wholesale markets.

Due to the location and scale of the producers there have been several attempts to develop local centres with capacity to collect and store produce. These units differ in size and functions and are often referred to as TLCs. Some structures are left from the Soviet Union where there were local centers to collect the production. A few of these are in working conditions and operated by cooperatives.

New TLC projects have been implemented by private investors with support from donors or impact investors. These are still few in numbers and have problems to get into the business some projects are established with good structures, but they are lacking business opportunities. A third type of TLCs are being established by the supermarket chains. These have a clear target to supply the supermarkets and have thereby easier access to markets.

The Kyrgyz Republic's TLC is small in capacity but appears as a key segment of the transportation sector of Kyrgyz Republic, with a great potential for improvement and expansion. There is a significant need for modern multifunctional and multimodal TLCs based on the regional characteristics of cargo distribution (export, import and transit).

One tool for logistics advancement in the Kyrgyz Republic is the development of logistics infrastructure (logistics centres, logistics parks, logistics areas, distribution centres, warehouses etc.). The Kyrgyz Republic is planning to establish two types of logistic centres, international and regional. The of aim of these is to create a single informational system, to optimize the direction of movement of products, to possibly increase the export of agricultural products, to develop regional and international trade, to control quality of products, form a market for orders and offers and to increase the competitiveness of the Kyrgyz Republic products

4.3 Wholesale market impact

The way that business is conducted at the current wholesale markets has a significant impact on the overall performance and development potential of the agriculture produce sector. Some constraints are related to primary production and other set of factors are linked to marketing and supply conditions. New wholesale markets cannot only alleviate congestion at the existing wholesale markets but also provide new facilities and opportunities for trade and supply, developments and market innovations. New wholesale markets will, however, not be able to resolve all existing constraints and problems but they can contribute to the development and innovation in the sector by introducing new trade standards, facilitating value-adding activities and creating more transparency and efficiency in trade and supply arrangements. The wholesale sector has the potential to become one of the most important agricultural sub-sectors in terms of economic growth, rural employment and income generation.

A problem for all actors in the value chain is the huge amount of food spoilage. FAO estimates that over 40% of root crops, fruits and vegetables are lost wasted, along with 35% of fish, 30% of cereals and 20% of oilseeds, meat and dairy products. Calculated from farm gate and retail prices, total food waste represents an economic value of some USD 1 trillion annually. Significant volumes of food are handled in wholesale markets, but information gaps exist about food waste during the process, including storage and transportation. Important measures needed to be taken to alleviate the damaging effects of food spoilage is to gather detailed information on how much food is lost and wasted at the wholesale level, to improve logistic efficiencies in urban markets and to manage waste across the sector. Developing best practices for designs and operations of wholesale markets and ensure efficient flow of information along the urban food supply chains, will not only cut down on food losses and waste but also enhance producers' access to markets, improve food handling, and enable fresher, safer produce more equally available to city consumers

The main wholesale markets in Bishkek are Dordoi, Sary Ozon and Alamedin Bazaar. Dordoi is a central wholesale market for foods and vegetables in Bishkek, consisting of a 2 thousand m^2 hall with gates on both sides. According to the management the daily throughput is about 600 tons of which only 150 tons is for the local market. The remaining

part goes to Kazakhstan and Russia. The export in Kazakhstan can thus be up to 450 tons per day and about 50% of it goes through the Altyn Orda market in Almaty, which offers a platform for wholesale sellers and buyers.

Farmers and distributors bring their produce to the platform and pay a fee to use the facilities. There is an in-house laboratory and the state inspection of foods has a site at the bazaar. According to the owners the average traders can make a margin of about 15%. Dordoi's manager controls that everything is done correctly and ensure the customers they can get good quality products. In the future Dordoi plans to establish collection centers around the country. The first one will be in Nookat. An IT facility, planned to be launched in August 2018, enables analyse results to be transferred directly from the laboratory to the customer centres. Further, it is planned to enlarge the market and establish more storage facilities. Dordoi also operates Alamedin Bazar, one of the largest retail bazars in the city of Bishkek.

4.4. Aggregation

The analysis of the agricultural value chain in the Kyrgyz Republic recognizes that the current source-to-destination flow of agricultural products, from farm gate to domestic and export markets, is well functioning. Collection from the farm gates is done by a large number of aggregators who use their own trucks or vans to gather the products at the farms. The aggregators bring the products to the wholesale markets or deliver them to local collection spots after which the products are transported to the wholesale markets.

The supply chain to the wholesale market is a non-transparent network of intermediary the domestic aggregation is organized and operated using cash, packaging materials (boxes), cultural and personal relations to keep the trade in a fixed structure– preventing inexperienced players to enter the value chain. All activities are operated by individuals or non-disclosed companies. This study could not identify any specific companies operating in this part of the value chain since they are all working without business names and logos. There are strong indications that the networks are controlled by very few actors and that they function as monopolies without any competition. Some even refer to them as a kind of mafia.

The farmers are financially weak and depend on cash immediately after having harvested their products. When offering their produce for sales they are usually left with only one option offering upfront cash payment. If farmers had stronger financial conditions or credit options, they would have flexibility and options to postpone the sales or pursue alternative sales options.

Attempts to establish local storage and cooling facilities have been performed in Kyrgyz Republic. However, only a few of them have been successful. Failures have been due to above mentioned cash situation preventing farmers from postponing their sales. The present structure, with a large number of small producers with limited knowledge about the market and business, hampers the possibility to establish well-functioning collection centres at the farm level. Efficient local centres must be operated by farmers to have the requested impact. This require that farmers have the needed skills and market understanding. Attempts to establish collection centres as cooperatives have been carried out in Kyrgyz Republic but with very limited success. Cooperatives or sales associations are workable solutions to strengthening producers' position in the value chain – however, in all cases, these initiatives require strong competent farmers.

The present system is working well, regarding the collection of products and payment to the farmers. However, there is no flow of information backwards in the value chain and so the farmers are not aware of grades, quality and prices or which species to produce to maximize

the value created. The insufficient farmer to market connection results in non-optimal behaviour leading to food waste and low quality.

5. The Regulatory Position Recommendations

5.1 General Policy Recommendations

- To enable access to land in a favourable urban location and access to critically important services including SPS and associated food safety facilities, along with access to reliable and low-cost amenities (electricity, water, roads, customs, logistics, communications).
- Encourage WSM Operators, Public or Private to adopt best practice international guidelines (WUWM guide on 'good hygienic practices specific to wholesale market management' - ref: World Union of Wholesale Markets publication 'Community Guide to Good Practice Health and Food safety 2009) and operating rules and regulations that are integrated with both national and local government legislation and regulations.
- Establish real time economic information infrastructure and services to improve efficiency of the wholesale market product price setting. This will help create transparent and efficient fruit and vegetable markets where prices reflect all available information, a basic feature of market efficiency.
- Cooperatives legislation should be modified to encourage structural change and stimulate development of service-oriented cooperatives including conditional relaxation (meaning compliance with all other rules) of minimum member numbers to 2 and adding encouragement for all cooperatives to be active, not inactive.

5.2 WSM Ownership Options

Future Legal and Regulatory Models – Operational Management: We would see an extensive development of both the Legal and operational regulatory environment to facilitate different types of **ownership, investment (e.g. PPP and/or concessionary) and operational management** for example Good Practice for Health and Safety and Food Safety and Joint Management structures of management and ownership and wider ranging regulation linked to securing the quality and traceability of produce and Professional Management Codes for Wholesalers and their relationship to the Producer/Supplier and Customers. It would also consider the way sites are zoned and businesses are located to enable efficiency in logistics and furthermore regulation of the tenant's operations are required to achieve best practice and to differentiate between function such as cross docking, storage and processing and selling and buying areas. Two key components of Operational Regulatory Best Practice relating to Good Practice for Wholesale Market Management – Health and Safety and Food Hygiene (Best Practice World Union of Wholesale Markets) and Updated National Operating Regulations for Wholesale Markets in a PPP and/or Concessionary Agreement Investment structure (case study Food centre, Amsterdam). Furthermore, this can be the basis for the Business and Financial Investment model, where greater wholesaler and market Business participation can be achieved both in terms of Business investment in their own infrastructure and key roles in the design of an agreement of service and facilities management functions. This Joint Management model was successfully implemented in the Amsterdam Food centre development to ensure a balance of risk and control between the Concessionaire (Private Sector Developer/Contractor) and the Wholesale Market Businesses. This model could be applied to wholesale markets in Kyrgyz Republic to achieve the same balance and de-risking

An examination of international wholesale produce markets ownership comparisons are shown in (Appendix A)

5.3 Harmonization and Coordination

The policies and regulations governing WSM require harmonization with the overall development strategies and plans of the national, regional and local governments.

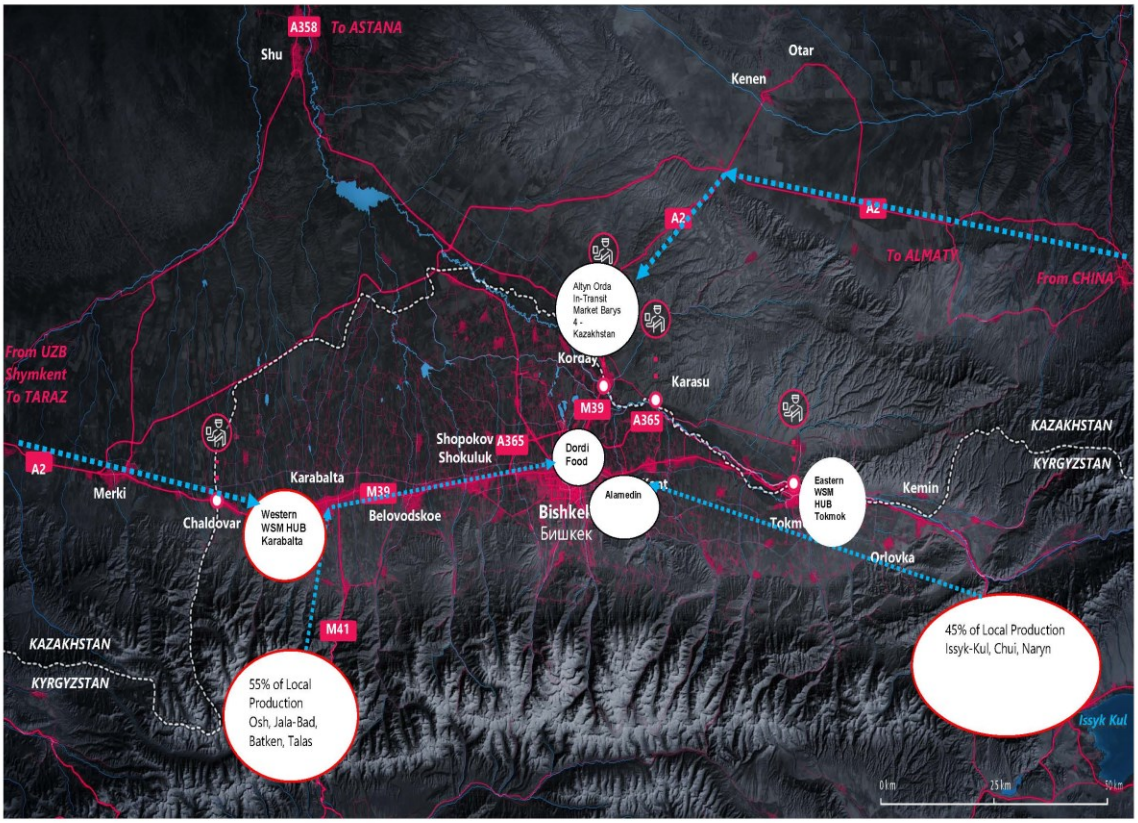
Regulation of All Activities Occurring on the Wholesale Market Land Appendix B

6. Development models for the WSM Infrastructure

In this section we look to provide guidance on the potential structural model for the WSM's, both Definitions of Activity and their Infrastructure requirements. This is led by a City and Site Location based assessment and also reflects the key points of urban consumption and domestic production aggregation. (*see table 3.4 Consumption by Main City and Aggregation Points by Market Section 3*)

6.1 Proposed Locations and Rationale for WSM development:

Specific WSM Master plans and Infrastructure Developments that are already evolving in Kyrgyz Republic and WSM Master plans and Future Development of WSM's and In-Transit Market Systems.



6.2 Proposed Locations and Rationale for WSM development:

6.2.1 Dordoi Food

DORDOI FOOD is an agrifood cluster and the largest wholesale and retail food centre.

“DORDOI FOOD” is a wholesale and retail food centre, a unique complex of a modern format, which has been functioning since 2011. This is an agri-food cluster offering the best products at the most appropriate prices.

The agricultural cluster “DORDOI FOOD” is a unique food supply system for the capital and the regions of Kyrgyz Republic with food products. It is created by analogy with well-known foreign wholesale food markets. Thanks to “DORDOI FOOD”, agricultural producers receive guaranteed sales of their products, and city residents have access to fresh and high-quality goods at an affordable price. In addition, producers of agricultural products, thanks to “DORDOI FOOD”, have the opportunity to sell their products without intermediaries, directly to customers, both wholesale and retail and as Both in Kyrgyz Republic and abroad.

Convenient location of the market within the city, low prices, thoughtful access roads from 4 sides, from 4 different streets, all this is very comfortable for buyers, both on cars and trucks. On the territory of “DORDOI FOOD” there are trade pavilions with a total area of 30,000 square meters and a Cross docks. Also, together with the Ministry of Agriculture of the Kyrgyz Republic and the Department of Plant Quarantine, has been launched and is working the phytosanitary laboratory “DORDOI FOOD”

On the territory was opened and operates the phytosanitary control point “DORDOI FOOD”. Coordinated with the Department of Plant Quarantine at the Ministry of Agriculture of the Kyrgyz Republic, the necessary modern high-precision laboratory equipment was purchased, and the phytosanitary inspection centre has begun operations.

In connection with the entry of Kyrgyz Republic into the EEU, exporters who are supplying products from Kyrgyz Republic to foreign markets must present phytosanitary certificates for products. According to the requirements, all food products of plant origin, which are exported to the EEU, must have a phytosanitary certificate. Concerning to this, phytosanitary inspection centre “DORDOI FOOD “provides following services:

- Inspection, examination of regulated products with sampling;
- Laboratory examination;
- Formalization and issuance of quarantine and phytosanitary certificates;
- Disinfection of regulated products;

And other services for phytosanitary control.

“DORDOI FOOD” is a stable and dynamically developing company that provides professional growth, self-realization and social security to its employees.

The team of the company “DORDOI FOOD” appreciates in itself and others such key qualities as benevolence, discipline, dedication and perseverance.

Agro food cluster "DORDOI FOOD" is constantly improving and working on its development, precisely the development of the export potential of products of the domestic agro-industrial complex and participating in ensuring the food security of the country

Thus, as part of the strategic planning for the development of the agri-food cluster and the wholesale and retail food centre “DORDOI FOOD” defined 3 important points:

1. Construction of an integrated factory for the processing and storage of vegetables and fruits; the production of packaging / containers for fruits and vegetables;

2. Construction and launch of the second Cross-dock (Cross-dock No. 2) to increase the sales area for wholesalers and buyers of agricultural products.

3. Construction and launch of cold storage for 2000 tons of products.

It is expected that the gradual implementation of these programs will strategically contribute to strengthening the agro-industrial complex of Kyrgyz Republic and ensuring the country's agri-food security.

6.2.2 Alamedin

Current territory of Alamedin Bazzar – 4 hectares, Expansion plan (multi-storey) - 2 hectare
Estimated cost of expansion – (30 mln. USD)

Development Brief:

Construction of new facilities - Cross Docks

Expansion of Parking area

Cooling storages

Food processing and packaging, labelling facilities

Building of a new laboratory (SPS)

Employed 3500 persons

Expansions will create 2000 new jobs

Holds 30 % of share of Chui and Bishkek in supplying of Agrofood

Plans to export 10 % agro food produced in Chui and Bishkek to Kazakhstan and Russia after expansion

Bazaar has around 15 collectors in the oblasts with its own trucks

Sell meat and dairy products – 7,5 tonnes per day – 2 700 000 beef kg

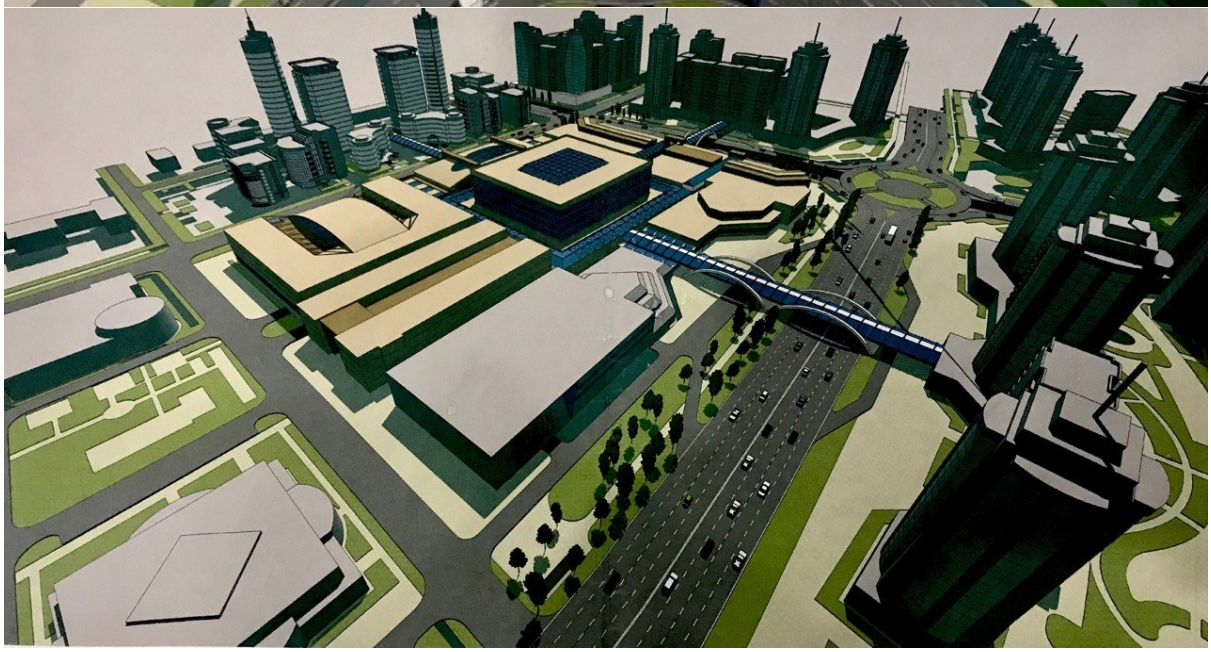
Holds 10 % market of beef in Chui and Bishkek

Sells 60 tons of fruits in Bishkek, Chui and Kazakhstan consumers

Plans to sell 200 tonnes per day of fruits (expansion)

Sells 60 tonnes per day vegetables to Bishkek, Chui and Kazakhstan consumers

Plans to sell 300 tonnes after expansion




Эскиз планировки и застройки по упорядочению района
Аламединского рынка и организация схемы транспортного движения
Экспликация
Условные обозначения
ТЭП:
Площадь застройки - 34.756 м2
Общая площадь - 124.9742 м2
Общая площадь автостоянок - 65.146 м2
Количество машиномест - 4.653 м/мест
Общая площадь торговли - 74.984 м2


Функциональная схема зонирования
строительные материалы
мелкооптовый центр
существующий хозяйственно - вещевой центр "Табылга"
торгово - развлекательный центр
ул. Жибек Жолу
центральный торговый павильон
ул. Курманжан Датка
продуктовые товары
промышленные товары

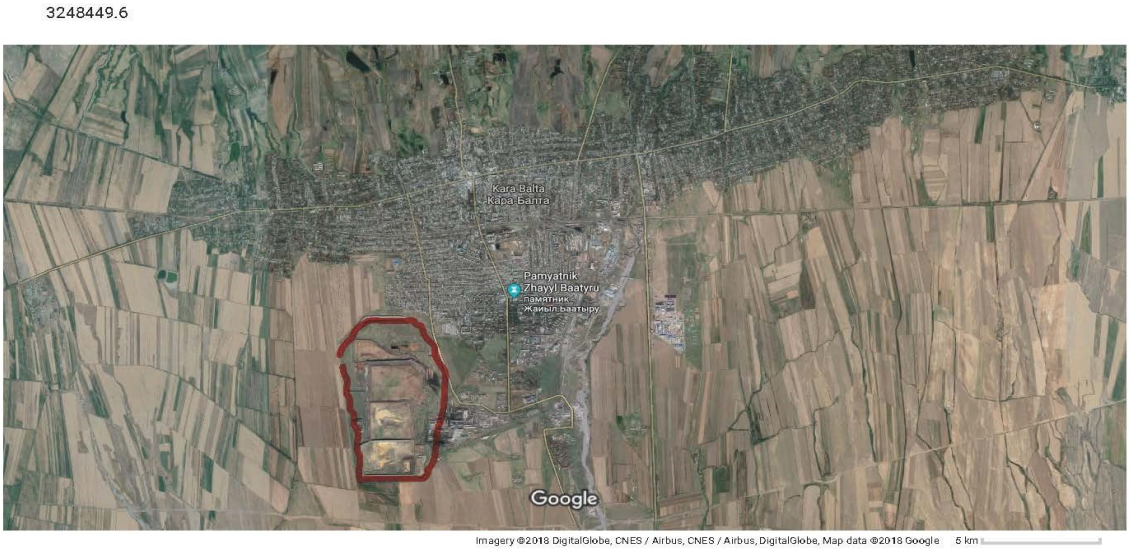
6.2.3 Tokmok

Proposed as an Eastern WSM HUB location for future development of the market and Food System.

No sites have been identified.

6.2.4 Kara-Balta

Proposed as a Western WSM HUB location for future development of the market and food system – The Below site has been identified as a potential In-Transit and WSM HUB location.



6.2.5 Barys II (Kordoy) – close to Bishkek and Kyrgyz Republic Border

Establishing the WSM – Regional and In-Transit Capacity

In order to provide access for agricultural producers to retail sites and to such technological operations as storage, packaging, marketing and transportation of agricultural and food products under the State Program for the Development of the Agro-Industrial Complex, it is planned to establish the WSM's.

The main goal for establishing WSM.s will be to reduce and optimize links between manufacturers and retailers and create the necessary infrastructure, which will ensure transparency in the price formation.

The geographical location of the Barys2 market is the key advantage for the WSM development, since it is in the relative proximity to large markets, which are convenient for logistics: Almaty, Bishkek, Taraz, Shymkent, and Tashkent cities.

In addition, most cargo traffic to the northern regions from the south and back runs along the transport corridor where the Barys2 market is located.

Establishment of a temporary storage warehouse will save the exporters' and importers' time and money for the cargo customs clearance and registration.

Barys2 market is located on the territory of 34 hectares, with additional 15ha of spare area free land for expansion, the territory is fenced and has the infrastructure necessary for functioning of the universal market.

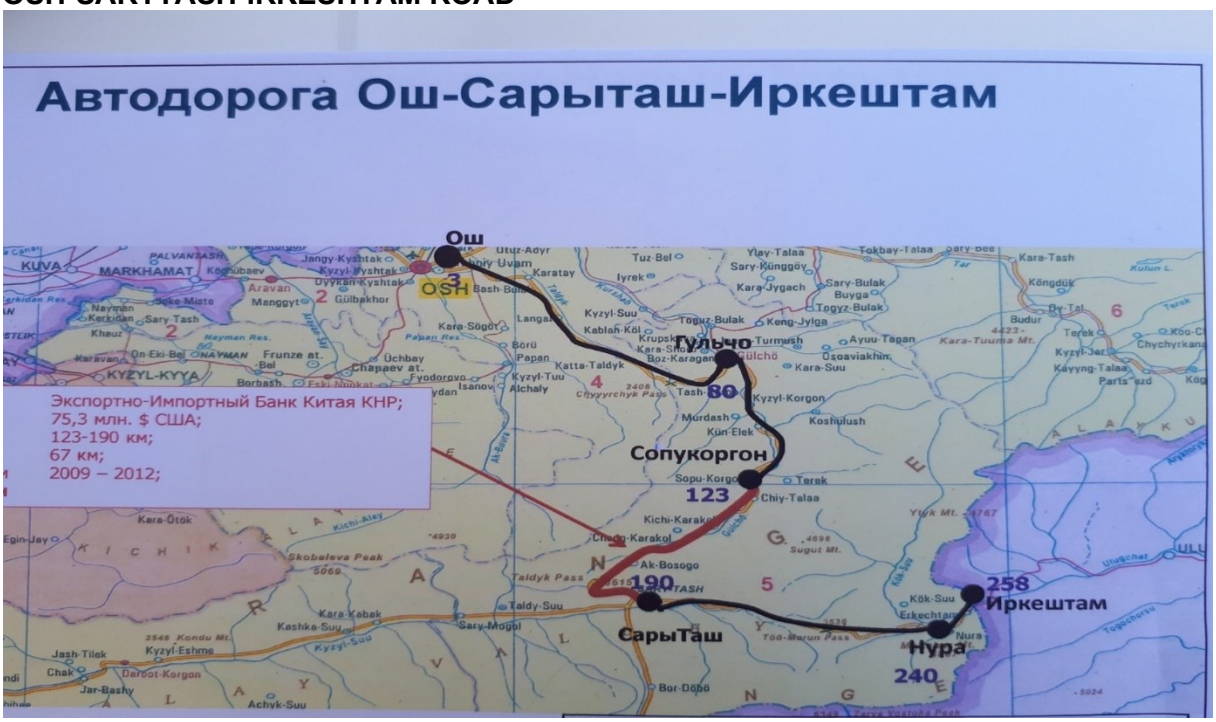
The market territory includes the following:

- warehouses of more than 10,000 sq. m.
- 14 permanent buildings with total area of more than 5,000 sq. m.
- indoor pavilion of more than 8,000 sq. m.
- more than 1,000 roofed outlets
- TSW
- asphalted parking lots

Once the WSDC is developed, the market territory will allow to increase the warehouse and industrial premises area to 250,000 sq. m. and create more than 1,500 jobs and give an impetus to the development of SMEs in the region.

6.3 Changes in Road Systems that could Impact on WSM Master Plan Location Planning

OSH-SARYTASH-IRKESHTAM ROAD



BISHKEK-NARYN-TORUGART ROAD

ROAD OSH-BATKEN-ISFANA- TADJIKISTAN BORDER

AREA №2

ALTERNATIVE ROAD NORTH-SOUTH

Total length- 433 km;

BISHKEK-OSH ROAD

ROAD OSH- BATKEN-ISFANA-TADJIKISTAN BORDER.

SUUSAMYR- TALAS-TARAZ ROAD

Osh-Sarytash-Irkeshtam road CAREC-2	Osh-Sarytash-Irkeshtam road CAREC-3, CAREC-5

6.4 Definitions of Different Functions within the Supply Chain of the WSM

Trade Logistics Centre (TLC) – function to take produce from production (field) and process (clean, grade, pack) and store for collection by transport and logistics company to deliver to Wholesale Market (WSM), Supermarket or Processor. Has No front of house sales or buyers walk facility. Single entity.

Wholesale Distribution Centre (WDC) – same function as above but can be made up of many businesses, usually acting as a co-operative.

Wholesale Market (WSM) – a platform for all food buyers and sellers (Fruit and veg, meat, poultry, fish and seafood, flowers, added value and dry goods) sales (B2B), Distribution, added value processing, storage, cross-docking (where product is broken up into smaller quantities or it just transfers to another logistics/transport system for re-export) and front of house (display based) sales in a 'buyers walk'. Many entities (wholesalers, transporters and logistics companies, processors, Horeca distributors and collective services and some retail and grower markets for public sales) Often has support services for food safety and Quality Inspection/Documentation/export documentation and facilities management. Can include food education and training colleges and office, business centre and hotel functions where logistics companies have to have periods of layover. Has short to long-term storage facilities depending on product requirement e.g. short –term local refrigeration for 1 – 3-day trading of say soft fruit for small wholesaler, 1 week to 1 month for larger wholesale storage and longer term 3 months storage for product such as potatoes, apples and where ripening is needed.

Consumption Points – Urban locations (The Cities) – that have retail markets and Bazaars, kiosks, catering and restaurants and cafe outlets, street sales, and retail food shops.

6.5 WSM Development Objectives

Reflecting the core WSM functions

According to the rules, the WSDC shall have the following functions:

- formation of an electronic database (collection and analysis of data on volumes and prices for food products, information on demand and supply, the dynamics of their change); record sellers and buyers, their registration in the electronic database;
- provision of retail areas to producers of food products, agricultural cooperatives, procurement organizations for the direct sale of food products or their purchase for further implementation;
- search for and creation of sales channels for food products;
- pre-sale preparation of products;
- bundling of consignments;
- storage of food products;
- information support of the WSM participants, analysis of production and movement of food products

Creating New opportunities for agricultural producers

- As known, for lack of capacities to store the products and difficulties to find the alternative buyers (consumers) many producers (especially agricultural producers) have to sell their products within shortest time, despite the market conditions and price levels.
- Availability of sufficient depositories (including refrigeration and technological facilities) to store the manufactured products will enable to store, increase the

storage periods, and to find buyers (consumers)

- The e-tendering system will help the company to sell its products quickly and at a favourable price without search for and personal contact with the buyer or a group of buyers (consumers).
- The electronic site organizer will guarantee the qualitative and quantitative indicators and terms of shipment, and there will be no need for the seller (producer) to demonstrate and prove them to buyers (consumers)

WSM Development Future Centers and Regional Connectivity

Thanks to the WSM functions established by the state, the geographical location and material base, the Barys2 market can further develop and transform into the international logistics center and establish of the Electronic Commodity Exchange.

In the Medium-term and long-term objectives, the plan can be:

- Attraction of investments for the development of the WSDC - at the second stage, it is expected to attract private investors for further development and transformation of the WSDC into an international production and logistics center
- Expansion of the trade geography - since the WSDC establishment, its further development and transformation is planned to achieve the long-term plans, i.e. expansion of the geography for cooperation and trade (Kazakhstan, Uzbekistan, Kyrgyz Republic, Turkmenistan, and Russia)
- Establishment of an e-commerce platform with the mutual settlements function - considering the current trends, with the purpose of raising competitiveness, it is planned from the beginning of activities, to create a website for advertisements, which in the medium term should be transformed into a software application, and in the long run - into the e-commerce platform Electronic Commodity Exchange.
- Preparing and creating conditions for the development of processing and production. Since the establishment, it is planned to create conditions and develop infrastructure for the primary processing of products (washing, filling and packaging), and in the long-term, it is planned to create conditions and facilities for deep processing and producing of new products
- Development of the logistic activity - at the initial stage, it is planned to immediately start creating applications and an electronic database of the logistics and transport companies with the purpose to reduce costs for the producers and buyers.

6.2 Design Concept **– full service – 7- 25-hectare model**

The model above changes the existing Market System – achieving full traceability, creating value addition – building downstream production and export potential - creating access for small farmers and future food security. This model above to show how produce can move through its 1 day, 3 – 5 days. 1 month and 6 – 12 months life cycle and therefore change the system and to make gains from lower post-harvest losses, market price variation and value addition through better quality and traceability. The model does not disrupt the historic nature of bringing produce to market from the field and farmer or the importer, it just allows different points of access for each one and various levels of intervention with the produce. The master plan model also shows a full-service centre environment and expansion to tourism interest which is a common part of European Wholesale Markets model. The concept model below can deliver up to 255,000 sqm of circulation and accommodation space and a range of 2 -3m Metric Tonnes of throughput for the wholesale market, with an estimated capital investment cost of between $50 - $100m per single wholesale market development, dependent on the specification for items such as food safe panelling, floor loadings, internal refrigeration.

The concept model is shown above in Elevation and Built form.

7. Development Options for an Alternative and more competitive Supply Chain to support WSM Sites and Infrastructure

Inspiration can be found in the European Union' system that supports and encourage fruit and vegetable producers to establish producers' organizations (PO). These are getting investment subsidies, advise and credit facilities to be able to form organizations and compete stronger in the value chain. The initiatives by the European Union has been targeted the situation where markets are getting more and more controlled by few large players and farmers are left without negotiation power. The EU interventions are made to increase competition - as reduced competition has not only a negative impact for the farmers, but also for the consumers and for the generation of value in general – and thereby for the welfare of the entire country.

7.1 The regional competitor Uzbekistan - a benchmark analysis

For the horticultural production the main regional competitor is Uzbekistan. This country has a quite centralistic political system, the productivity at farm level is higher than in Kyrgyz Republic indicating that there is a more effective use of production inputs and more knowledge and effectiveness in the agricultural production. In order to address weaknesses and potential for improvements of the agricultural sector in the Kyrgyz Republic a benchmark analysis has been performed using Uzbekistan as the benchmark model.

The study identified several hurdles that Kyrgyz Republic need to overcome to increase productivity in the agricultural sector and food value chain the hurdles include but are not limited to:

- quality and yield of agricultural products
- limited knowledge among farmers concerning both new production technologies and management
- lack of technologies for production, processing and storage of organic products
- limited diversification of agriculture production
- and lack of regulatory frameworks for easy business registration.

However, also Uzbekistan seems to have similar gaps in the value chain concerning productivity at the farm level; price information and quality issues

7.2 Target and growth markets for horticultural products

The market for horticultural products in the region is strengthening its position, thus providing several opportunities for horticultural products the following scenarios for growth are identified:

Maintenance of the domestic market by retainment of the strong supply chain of fresh produce to the major cities.

Gaining a stronger position in the closest market in Russia, targeting the cities of Yekaterinburg, Chelyabinsk, Omsk and Novosibirsk. Quality improvements and increased quantities in the supply chain would enable Kyrgyz Republic to keep up with the markets in the Russian cities. The Russian economy is growing, and it is given that it will affect the market for quality foods. Russian consumers mention health as one of the most important parameters when consuming.

Development of alternative high price markets e.g. by organic produce delivered to the door or through high end shops in the cities with supply directly from farmers.

Development of niche markets for export of high value products to China and the Middle East.

7.3 Alternative Supply Chain Creation - Recommendations

7.3.1 Technical facility building for improved productivity and quality

With the focus of increasing quality, it is suggested to establish local cooling and storage facilities, operated by local business people. These storages should be maintained by special support schemes were capital and knowledge are provided to local entrepreneurs.

Information and communications technology (ICT) solutions have the potential to increase competition, logistics and information about prices in all stages in the value chain. An obstacle for the introduction of digital platforms is the current use of cash in the trade. It is crucial to make efforts to establish digital money transfer platforms. Initially pilot projects could be conducted for the development of suitable systems.

There is currently very limited trust between sellers and buyers in the value chain. Few agreements are made at distance, but often one of the parties are backing out from the agreement. Without payment effectuated it is difficult to enforce. Online payment will have significant impact as valid agreements can be made at distance. Risk position of trading agreements on online system – relationships between buyer and seller.

Implementation of standards for quality and food safety cannot be emphasized enough as it is a key issue for increasing the profitability of the sector and gaining access to the export markets. The initial step would be to standardize grades and qualities for the current domestic markets and thereafter by a step-by-step approach the export markets where higher quality is requested.

7.3.2 Cluster building and contract farming

The establishment of sales associations and cooperatives need to be supported to increase the negotiation power at producers' level. A fundamental request is that members who take part in a producer organization are obligated to sell their produce through the organization. This will ensure the negotiation power and is seen as the key for the success of the organizations. Further, contract farming has the potential to introduce new alternative supply channels and will also contribute to increased competition.

7.3.4 Industry cooperation and marketing

The fundamentals of market economy are that it pushes people and businesses to do what is most profitable – and thereby what creates the maximum value. To do so, businesses must know what is needed at the market and what gives the highest profit. In a well-functioning market, the suppliers learn this by operating in the market.

It is crucial to address and implement actions that stimulate free and open competition from farm-gate to wholesale markets. A commercial system with sound competition will safeguard that adequate knowledge reaches the primary producers and will be a catalyst for development of the whole sector. This study recommends encouraging and supporting new companies operating in the value chain.

7.3.5 Supermarkets

The consumers in the region are slowly turning to self-service stores, losing interest to the unorganized trade. Systematic discounts and promotions play significant role in attracting the buyers to stores and supermarkets. However, the bazar trade plays an important social role and is still providing an attractive price/quality in comparisons with the supermarkets, especially for fruit and vegetable products.

Frunze runs 14 supermarkets in the Kyrgyz Republic and plans to open more 10 this year. It is a mix of hypermarkets and smaller cash & carry shops. They have a five years strategic plan to build their own logistic network. The main challenge for Frunze is to source the products they need. One challenge is that farmers prefer working with cash, a structure not fitting well into the supermarket business. Frunze has provided a lot of training to farmers but claims that they have not received any results from it. Frunze now runs a pilot project on establishing their own supply of onions. Another challenge for the supermarkets is that they must add 14% VAT to their products. If farmers sell directly at the market, there is no VAT. Thus, the competition is not on equal conditions. Frunze has therefor made a request to the ministry to look at this issue.

Frunze has a five years development plan, which includes establishing logistic centres in the major production areas and expands their own primary production, with apple orchards and greenhouses. Included in the plans is also to develop an electronic purchase and control system.

7.3.6 Processing

Around 30% of the production goes to processing industry, directly from all sizes of farms, generally bypassing the wholesales markets. Processors mainly source 3rd quality produce which cannot be used for retail. In fruit juice there are a large number of factories from the Soviet Union, all of which are in very poor conditions. However, some are still operating. They have an important role in buying quantities for fruits that would not have other market alternatives. These factories are all struggling to keep their markets, as they do not comply with production and food safety standards. For high quality produce of food and vegetables there is very limited processing. Some smaller projects concerning export of dry fruits to Europe have been tried in the Kyrgyz Republic.

7.3.7 Exporters

Export procedures are complicated, and simplification is demanded. Inspection ability is poor, testing equipment is lacking at in-house/government laboratories, inspection staff and inspection technology are also missing. A Free Economic Zone (FEZ) was set up for invitation of foreign investment in 1996, but not many food processing businesses have entered so far, and 80% of those who have started to utilize the scheme are engaged in such practices as importing materials, then processing them, and then re-exporting their products: the result being of only small benefit to the Kyrgyz Republic.

7.3.8 Organic Production

Food production is an increasingly vital economic sector in Kyrgyz Republic. Kyrgyz Republic has identified organic agricultural production as a promising means of improving the competitiveness and export potential of domestic products. However, the absence of a certification system and labelling requirements is currently hindering development of both internal and export markets for organic products. The FAO project “Support to development of organic farming and institutional capacity building in Kyrgyz Republic” is now working to strengthen capacities in the sector through improved legislation, institution building and strategic planning. Activities include training for farmers, agricultural specialists and policy-makers on various issues related to organic agriculture (Kyrgyz Republic and FAO).

7.3.9 Potential export markets

The primary markets for export are Russia and China, where forecast shows that China will be the main regional market driver in the future. Unlike the majority of West European countries where consumption of vegetables and fruit has declined recently the consumption in Russia and China is rising.

The transport corridor between Kyrgyz Republic and Republic-China-Pakistan opens for better export possibilities to China as it gives access to the harbour of Karachi in Pakistan. Further there is no language barrier and the cultural and ethical connections between Kyrgyz Republic, and Northeast China are considered good. Kyrgyz Republic also has good relations to Russia and with a high consumption of fresh fruit and vegetables that is increasing it is as well is regarded as a booming market. Russia is, however, putting focus on getting self-sustainable in agricultural production and increased competition from regional competitors such as Uzbekistan and Azerbaijan is expected to During recent five years Russian market of fresh fruit and vegetables demonstrated steady growth. The trend of market volume increase was driven by growing import. The consumption of specifically potatoes has though been decreasing for the past two decades much due to lower food use and decreasing industrial consumption. The overall increased consumption of fresh fruits and vegetables in Russia is directly related to changes in consumer preferences and shift to healthy living standards (foodmarket.spb.ru). Consumption is driven by large urban areas as Moscow and Moscow Region, Krasnodar Territory, Saint Petersburg, Sverdlovsk Region and Rostov Region. The

fresh fruit is among the most important in the consumer basket of Russia. Retail sales also demonstrate positive dynamics. The ascending trend of sales with high growth rates has been seen during the recent decade. In 2012 sales value of fresh fruit/berries increased by 9% and exceeded the amount of RUR 341 billion; in Q1 2013 sales saw 15% growth.

The production volume of fruit in Russia is not enough to satisfy the domestic demand, so import is high and according to estimations, 67% of Russia's planting area of fruit trees and berries is declining and has since 2005 been reduced by more than 15%. On the other hand, the cultivation of greenhouse vegetables is growing steadily, demonstrated by the Russian company, Agriculture, which has started expanding with a 27-ha greenhouse that will be used for the propagation of young plants and the cultivation of cucumbers and tomatoes. Further the Russian Food Security Doctrine has set a target of 95% self-sufficiency in potato production in Russia.

Russia has neither technologies nor facilities for long storage of fruit and berries. That is why apples in Russia are cheap only during harvest time, and the rest of the year consumers have to rely imported products. Import to Russia is driven by 5 fruits: bananas, apples, tangerines, oranges and grapes, which also reflect consumer preferences. Apples are the most popular fruits in Russia and captures alone 20% of the fruit market. Half of demand for apples is satisfied by domestic production, and the rest of supply comes from abroad, mainly from Poland, Moldavia and China (foodmarket.spb.ru). “Tander” CJSC (owner of retail chain “Magnet”) is the largest importer practically of all categories of fruit and berries. Other large importers are “Megafrukt” LLC (Moscow), “GlavProdImport” LLC (Moscow), “Rassvet (Dawn)” LLC (Saint Petersburg) and Some other companies

Export of fruit/berries from Russia is insignificant and is driven by re-export. According to “GRC”, Russia exports only 0.5% of domestically produced fruit/berries and about 80% of this volume is provided by melons.

Forecasts project that the real value of world agri-food demand in 2050 is projected to be 77% higher than in 2007 and that 43% of this future demand is deriving alone from the Chinese market (richardcolbeck.com.au). Chinese customers prefer imported products and in 2017 China imported 4.4 million tons of fresh fruit, with a value of USD 5.59 billion, increasing year-on-year by 12% and 5% respectively. Overall, the composition of the list of top ten fresh fruit exporters to China remained similar to that of 2016. China's fresh fruit exports fell slightly in 2017 where fresh fruit exports came in at a volume of 3.5 million tons and a value of USD 4.89 billion, declining year-on-year by 2% and 4% respectively (producerreport.com). Amid the slight overall slowdown, China's exports of fresh fruit to Indonesia shot up by 57% year-on-year, making Indonesia into the number three market for China's fresh fruit exports. Russia, with its long-shared border with China, was in the number four spot. Exports to the following eight markets accounted for 74% of China's total fresh fruit exports by value in 2017: Thailand, Vietnam, Indonesia, Russia, Hong Kong, the Philippines, Malaysia, Kyrgyz Republic. China's top performing export fruit categories in 2016 largely followed the country's traditional fruit cultivations strengths and included apples, table grapes, citrus and pears (producerreport.com).

In 2015, European countries imported € 31.7 billion worth of fresh fruit and € 18.7 billion worth of fresh vegetables (including intra-EU trade). 50% of the fresh fruit and over 80% of the fresh vegetables that are imported concern re-exported or locally grown products. Germany, the UK and France are the largest final destinations, accounting for around 48% of the product value imported from both within and outside Europe in 2016. The Netherlands and Belgium are responsible for 20% of the import value and re-export to other European markets. Italy and Spain have a 10% share in the European import value of fresh fruit and vegetables, but they are also net exporters because of the large volumes of their own production. Eastern Europe has growth potential; well-known tropical fruits such as pineapples, lemons and limes are

finding their way through western European ports to new, upcoming markets in eastern Europe (cbi.eu).

8. The Suggested Way Forward – National Wholesale Market Masterplans

8.1 Master Plan Development Scenarios: The Suggested Way Forward – Future National Wholesale Market Masterplans

Master plan Development Scenarios:

Existing Markets Infrastructure: We observe that to modernise the **existing wholesale (assembly) market system of Dordoi Food, Alamedin Bazaar and to work with (partner) the Regional Wholesale market Centres of Altyn Orda, Kordoi (Bishkek/Almaty border), and Altyn Orda, Almaty,** would enable an accelerated development of the National wholesale markets masterplan (Kyrgyz Republic) and the modernised supply chain function and that this could be integrated with development of the Trade Logistic Centres (TLC's) in regional centres such as Osh and Chu and Issy-Kul production areas and the trans-logistics and re-export flows from China and Uzbekistan.

The Value and/or Supply Chain Function: We observe that the existing supply chain and markets function within the ABEC is fundamentally integrated by the flow of produce in the existing market system i.e. at least 80% of the Regional Domestic Production Flow (surplus after population consumption) and Imported produce flow within the Uzbek/China corridor is transacted at the centres of Dordoi Food, Altyn Orda, Kordoi (Bishkek/Almaty border mainly trans-logistics and re-export of vegetables directed to Russian Markets) and Alamedin Bazaar as the main Bishkek City internal market, wholesale and retail distribution system. The alternative direct systems from the Trade Logistics Centres (TLC's) and the Frunze type Hypermarket system have only 10% market share (3% Hypermarket and 7% Direct Production supply) of Kyrgyz production and import flows to the end customer.

The Markets Regulatory Status: We observe the existing regulatory position in terms of food safety and traceability within markets operation (particularly Alamedin Bazaar and Dordoi Food) have a good basis for development as a one stop shop environment for all Horticultural, Red Meat and Dairy based food safety assessments and customs certification.

The Regulatory Status – Certifications: We observe that the planned roll out of the devolved SPS and Animal Inspection service centre model, to Osh and Chu/Issy-Kul TLC's and to be implemented in 2018 at Dordoi Food, Bishkek would accelerate the introduction of minimum food safety standards. This model could be expanded to develop standards from for example SPS, which secures the domestic and Eurasian market trade, to build capacity for wider ISO9002 and BRC standards that would enable export of produce to the wider market of the European Union. This model could be underpinned through the adoption of the PPP structure utilised above for Dordi Food – The PPP supports a 5-year agreement for devolved SPS Certification centres and Inspection laboratories at private centre locations 1 in Bishkek and 4 in the Oblasts including Osh and Talas production centres. It is also linked to the E-Government system for digital filing and access to all certifications at each producer transaction point. The PPP provides for government funding for all setup Capital and Lab Equipment needed at the centres, whilst the private centre charges for inspections and

certification. Average Lab and equipment setup costs per Gov budget are $120,000. The devolved centre is also expected to speed up the certification for cross-border exports as certification and documentation will be set up at the same location (e.g. wholesale market) as the producer and importer sells there produce. This model for devolved SPS and Animal Inspection systems seen in Bishkek could be replicated within the proposed new wholesale market masterplan sites.

The Markets Operational Regulatory Status: The Operational regulatory environment within the current market is at a basic level but is consistent with Legal and Regulatory structures in International Markets and law for Tenants within a Landlord and Tenant structure. Its reach at present only extends to regulation of licence, lease and service costs and compliance with basic safety conditions of tenant operation e.g. health and safety and fire risk.

The existing Financial Conditions and the Tenants/Businesses – Costs of Operation: The main financial conditions for Tenants and Market owners seem to be consistent across all markets within Kyrgyz Republic and the ABEC corridor – In Bishkek, whether an assembly wholesale or internal consumption market. Owner and operator revenue is derived from Gate fees at $4 -$9 per vehicle, linked to vehicle size and weight (average 3 – 10 Metric Tonne) and parking fees of $1.5 per day. On this basis future investment viability seems positive particularly with the high volume of trade visits per day, estimated at 20,000 with 3000 Tenancy agreements in place for Alamedin Bazaar for example. However, Tenant affordability will need to be considered to avoid displacement of the smaller traders. This revenue and transaction-based system is consistent with many Asian and African markets and some European markets and would not therefore need to change. However, most EU markets do not charge a gate fee, and this will need to be considered in the light of a desire to increase access for smaller domestic producers, where this could be prohibitive.

Master plan Development Options:

Existing Commercial Development Options: We observe the site Options Appraisal as detailed above show a clear view of the realistic options and their future implementation and delivery structures. It is acknowledged that these options reflect prioritisation towards the existing wholesale market centres, but we state this opinion based on establishing future conditions that would guarantee food security, fair access to the marketing system for small farmers and downstream supply chain developments, greater transparency in and live market price and systems information and co- working/co-location with the developing alternative supply chain infrastructure of supermarkets and the cost efficiencies that can be gained through site location efficiency, larger scale aggregation and their logistics systems.

A Transformational Master Plan Concept: We observe there is a need to develop the future masterplan infrastructure with a clear vison of how added value and produce traceability and produce shelf-life gains will develop as part of the wholesalers and market transactions. We have included this model above to show how produce can move through its 1 day, 3 – 5 days. 1 month and 6 – 12-month life cycle and therefore change the system and to make gains from lower post-harvest losses, market price variation and value addition through better quality and traceability. The model does not disrupt the historic nature of bringing produce to market from the field and farmer or the importer, it just allows different points of access for each one and various levels of intervention with the produce. The master plan model also shows a full-service centre environment and expansion to tourism interest, which is a common part of the European Wholesale Markets model. The concept model can deliver up to 255,000 sqm of circulation and accommodation space for the wholesale market with an estimated capital

investment cost of between $50 - $100m per single wholesale market development, dependent on the specification for items such as food safe panelling, floor loadings, internal refrigeration, integrated docks and office and sales zone construction.

I**ntegration with City Centre Master Plans**: We observe that the wholesale market master plans should not be developed in isolation from its corresponding City centre master plan developments. An integrated and future sustainable Urban City Food System will determine the function of the future wholesale and logistic system. It will also influence how a city evolves its retail, leisure, tourism and community developments, particularly when applied to the offer of retail markets, bazaars, and supermarkets. This is particularly relevant to the core cities connected to the master plan sites in Bishkek. The City Centre Master Plans indicate that retail food bazaars and markets will be reduced or modernised and relocated outside of the City due to the impact of an expanding City and requirement for land for alternative use and resolving congestion issues. The impact on the local internal market food system, both retail, wholesale and catering (restaurant supplies) as provided by Alamedin Bazaar, needs to be integrated into the master plans to avoid disconnected and random food establishments setting up that are not within the desired City Food offer or meet the set food regulation system.

Future Legal and Regulatory Models – Operational Management: We would see an extensive development of both the Legal and operational regulatory environment to facilitate different types of **ownership, investment (e.g. PPP and/or concessionary) and operational management** for example Good Practice for Health and Safety and Food Safety and Joint Management structures of management and ownership and wider ranging regulation linked to securing the quality and traceability of produce and Professional Management Codes for Wholesalers and their relationship to the Producer/Supplier and Customers. It would also consider the way sites are zoned and businesses are located to enable efficiency in logistics and furthermore regulation of the tenant's operations are required to achieve best practice and a differentiate between function such as cross docking, storage and processing and selling and buying areas. Two key components of Operational Regulatory Best Practice relating to Good Practice for Wholesale Market Management – Health and Safety and Food Hygiene (Best Practice World Union of Wholesale Markets) and Updated National Operating Regulations for Wholesale Markets in a PPP and/or Concessionary Agreement Investment structure (case study Food centre, Amsterdam). Furthermore, this can be the basis for the Business and Financial Investment model, where greater wholesaler and market Business participation can be achieved both in terms of Business investment in their own infrastructure and key roles in the design of an agreement of service and facilities management functions. This Joint Management model was successfully implemented in the Amsterdam Food centre development to ensure a balance of risk and control between the Concessionaire (Private Sector Developer/Contractor) and the Wholesale Market Businesses. This model could be applied to wholesale markets in Kyrgyz Republic to achieve the same balance and de-risking.

Alternative Supply Chain Developments – Displacement and Competition Risk: We observe that there is a very low risk in the investment in the modernisation of infrastructure and the supply chain of the existing wholesale market systems and locations. In terms of an alternative developing supply chain we only see the strategies of supermarkets who are trying to address their issues of inconsistency of supply and the lack of production volume. They are trying to address this through backward integration to production and their own land, storage and distribution system (TLC's) and this is demonstrated by the growth Strategy of one of the largest Supermarket chains operating in Kyrgyz Republic, Frunze who have acquired 50 hectares of land for own production in the Issy-Kul production zone. This is also an opportunity for the wholesale markets as they capture the requirements of the supermarkets at their single point of aggregation to guarantee supply. Another alternative supply chain development would

be to strengthen the system of internal wholesale and retail markets (such as Alamedin) who supply most of the local catering and restaurants outlets and facilitate direct from farm to market for Chu and Issy-Kul farmers of up to 120MT per day. Although the tonnage only represents 10% of local production, and the culture is for the chef to come to the market to see and feel the produce and collect from the wholesaler. As City's evolve their restaurant and food service culture, there will be a shift to remote ordering by the chef and larger volumes direct from the production areas that only wholesale market HUBs could manage, however the breaking of larger volumes and distribution for the restaurant will still need to be facilitated within a close location to the city. This is an opportunity to change the internal markets system and influence downstream production levels, through both increased volume and specialisation such as organic production.

The Benefits of Public Sector Investment the Public sector in the form of the Ministry of Agriculture and the Agencies responsible for the development of the Agricultural and Horticultural Sector in Kyrgyz Republic have a limited role in the development and operational management of wholesale markets as the sector is entirely in private sector land and operational ownership. It may be beneficial for the public sector to take a stake in the development and implementation of new and/or wholesale market masterplans and facilities to ensure that the wholesale markets 'Function of Public Good', and the transformation or modernisation of facilities and the subsequent new operational regulatory structures are maintained. Where there are modernisations and transformations like this in other countries it has become important for the public sector to sponsor and/or give guarantees to private investors to ensure that the developments are successful. Public sector sponsoring, or intervention is often in the form of land contribution, or state guarantees, or ensuring that the legal constitution and operating models of the new wholesale markets are based on not for profit distribution to ensure that funds are reinvested in the infrastructure and facility. Furthermore, Public Sector sponsorship can enable the Agricultural development agencies to get closer to the food supply chain activity and understand more of what the sector needs in terms of business support and subsidies, if appropriate.

There are a number of further strategic considerations needed to address the nature of the potential ADB Investment and project Financial Model. The following are discussed to present alternative options but to still create the enabler activity by ADB, for the National Wholesale Markets Master Plan development and their Supply Chains:

Option 1 Accelerated Scale Strategy

For example, if the objective and strategy is to diversify the economy of Kyrgyz Republic through development of the strength of the Agri-Horticultural sector, leading to increased production, reduced transit and post-harvest losses and economic gain through self-sufficiency (import substitution) and export market development. Then we observe this will be best achieved through a development of scale such as the joint development of Dordoi Food, Bishkek, Alamedin Bazaar, Bishkek and the supply, consolidation and aggregation centres (TLC's) within the Osh, Chu and Issy-Kul production areas. It can also integrate the cross-border trans-logistics trade between China and Uzbekistan at the Bishkek/Almaty border site of Dordoi, resolving the problem of border crossing documentation and developing standard platforms for SPS and export certification. This could remove the instability at the Kyrgyz Republic/Kazakhstan border leading to improved consistency of supply and increased trade to the Russian markets. This consolidation of wholesale market approach could also lead to improved connection and understanding of the end customer needs and this is very relevant to the forming of the 7 Regional Collection centres proposed for Chu(3), Issy-Kul(1), Osh (2) and their success,

as this has been shown as a key point of failure in efforts to untie farmer and producers into cooperatives, in addition to costs of operation and skills. Finally, this consolidated wholesale platform could provide services to farmers such as sorting, grading, processing and storage that would increase the quality and value added of their product, making it attractive to other buyers such as the restaurateurs and caterers and supermarket chains that are located outside of the existing wholesale market system.

Option 2 Downstream Production Capacity - Building Aggregation and Specialisation Systems

If the Ministry of Agriculture have a long-term transformational Agenda for the Agri-Food sector then alternatives to this can be developed, for example by setting up regulation around the trading area trading zones of the existing markets Dordoi Food and Alamedin. A new concept or single wholesale market distribution centre could be developed from a greenfield site such as Stepnoye. Alternative supply chain systems could be developed on a direct from farm and farm collection centre basis (TLC's) rather than utilising the existing wholesale markets and smaller producers particularly those with a specialisation e.g. if they were organic, for example could make use of or develop a digital trading platform to sell direct to customers in City Centres for example. This would be particularly relevant to the opportunity to expand distribution to high quality produce to restaurateurs and caterers within the City of Bishkek.

Option 3 Investment as an enabler to changed ownership and operating models for wholesale markets

Of course, all these alternative supply chains systems could co-exist within the Dordoi Food/Alamedin Bazaar structure (independently, given the right structuring of the ownership and regulatory functions as detailed above.) The structuring of ADB financing mechanisms in such a way as to promote Joint Management structures of the new wholesale market facilities and ownership of buildings through direct investment to the Businesses and tenants could change the risk position of the project. We see an investment model whereby loans are granted to the Ministry of Agriculture and this is distributed within a PPP structure to groups of Production (TLC) Businesses and Wholesalers operating within Dordoi Food and Alamedin Bazaar, formed into a formal co-operative structure. This could avoid the issue of the operator charging unsustainable rents and enable investment in a more balanced and proper way, in terms of participation in the ownership and management of the Wholesale Market.

The Do-Nothing Approach given all the above analysis we observe we are in good position to see the impact of a Do Nothing Approach i.e. no activity (as described above) in Kyrgyz Republic and no investment support. We see the following impact of this:

- Kyrgyz Republic is the gateway and corridor to facilitating trade and logistics flows through the ABEC and creating an outreach to an export market in the EU, without investment this will not transform or diversify the Kyrgyz Republic economic situation but furthermore it will not pull through the gains in produce and production capacity of Kyrgyz Republic
- Without the investment and build out of the wholesale market and agri-logisitcs infrastructure in Kyrgyz Republic, to capitalise on the re-export market for produce flows from China for example, Kyrgyz Republic will not enjoy the growth and economic gains associated with this core function of land locked countries.
- Without the opportunity to influence the regulation and ownerships structures on the build out of new wholesale market facilities in Kyrgyz Republic then the risk of leaving it to evolving markets forces, may result in increasing dominance of the

China re-export and import supply chain, which displaces local production and downstream small producer initiatives with a correspondent impact on the Kyrgyz Republic economy.

- Furthermore, if there is no investment and supporting strategy then the development of alternative supply chains in the form of production specialisation and for example organic production for export markets in the EU is unlikely to happen.
- In summary given the potential impact of a Do Nothing Approach we observe that the Strategy and progress of the ABEC Corridor will be significantly undermined.

Regional Influence

We observe that the consideration of expansion and growth of the infrastructure at the Kyrgyz Republic locations could also include the development of the Bishkek/Almaty Oblast Border Trans Logistics/re-export and consolidation site at Kordoi on the Bishkek/Almaty border (part of the Altyn Orda owned markets operation with a rail link to Shymkent and direct flow to Russian consumer markets). There are two key drivers for the integrated supply chain relationship with the above locations at or near the Kyrgyz border and these are the inflows and outflow within the Uzbekistan and China corridor and the cross-border influence of the Fergana Valley rich production zone. There is a correspondent ADB workstream currently being finalised on the impact of the Fergana Valley and potential alternative supply chain consolidation and aggregation structures at or close to the field or production point. These will be detailed further in the full draft master plan concept report.

9. Financial Models, Project Structure and Delivery Options

9.1 Revenue and Development Costs:

- Revenue is derived from gate and/or entry fee and parking fee for trucks using and average 20mt truck entry fee is $3 - 10 and parking fee is $4-9 a day.
- Rental costs for a warehouse are $2.6 per sqm per month with 100,000 sqm of warehouse.
- The average construction/reconstruction budget for the development sites such as Alamedin and Dordoi Food is $30 - $50m.

9.2 Suggested Financing Model - the financing model may contain the elements below as key enablers

Public sector provides land and infrastructure for possibly 7 – 10 years(short-term) then exits to private sector operation in full or in part.

A PPP structure is used – to acquire land from the public or private sector owner e.g. where it is deemed the in the interests of food security. This land could form the public-sector investment of the PPP as equity or be retained and leased to a private sector operator.

It is possible that the private sector operator can also act as anchor tenant and possible future exit investor or this may come from other smaller wholesalers investing and funded as group.

There may also be opportunities from External Investors on a co-financing basis, e.g. those linked to supermarket or processing and packaging businesses.

9.3 Investment benefits

- Ensures modernised WSM infrastructure at Dordoi Food and Alamedin.
- Reduced border closure risks at Almaty/Bishkek border and improved food security supply as storage creates 'stock holding' to ensure continuity of supply
- Improved regulatory systems SPS and customs certification at Almaty/Bishkek border
- Ensures utilisation of existing WSM assets.

10. The Regional Context – Bishkek - Kyrgyz Republic

ABEC Border HUB's – Bishkek – Dordoi Food 25 Hectare site and site to East of Bishkek near to production areas of Kant and Tokmak. **Regional Influence – Bishkek**

Two existing market centres form the basis of trade flows between Bishkek and Almaty and wider (e.g. to Astana) that is Alamedin and Dordoi Food.

Alamedin is the internal market system (and daily produce system) serving the Bishkek population consumption needs and Dordi Food is the export centre for production from Tokmak/Issy-kul/Kant and Osh going to Almaty (to be aggregated at Altyn Orda. Almaty) and 50% of that 250 tonnes per day goes to Kazakhstan and 250 Tonnes per day is distributed onward to Russia (Food City).

A further site on the KAZ side at Kordoy is being promoted as a solution to the risks of border closure, a basis for improvements in customs certification, SPS safety and quality controls and customs control and as a storage centre to hold buffer stock in the event of border issues. It is also promoted as a holding point and monitoring point to control the elevated levels of unregulated trade and for in transit trade between China and Russia (particularly vegetables) and re-exports from Uzbekistan

We observe that the consideration of expansion and growth of the infrastructure at the Kyrgyz Republic locations could also include the development of the internal consumption and Trans Ag-Logistics centres at Bishkek, Alamedin Bazaar, and the Greenfield site option at Stepnoye and the Almaty Oblast/Bishkek border Trans-Ag-Logistics and consolidation site at Kordoy on the Almaty/Bishkek border (part of the Prime Capital, Altyn Orda owned markets operation with a rail link to Shymkent). There are two key drivers for the integrated supply chain relationship with the above locations at or near the Kyrgyz border and these are the inflows and outflow within the Uzbekistan and China corridor and the cross-border influence of the Fergana Valley rich production zone. There is a correspondent ADB workstream currently being finalised on the impact of the Fergana Valley and potential alternative supply chain consolidation and aggregation structures at or close to the field or production point. These will be detailed further in the full draft master plan concept report.

APPENDICES

Appendix A

Table 1: Legislation & Regulations Characteristics Matrix: Wholesale Markets: ABEC & Selected Countries					
Characteristic	**Kazakhstan (e.g. Altyn Orda, Almaty)**	**Kyrgyz Republic (e.g. Dor Doi, Bishkek)**	**Netherlands (Amsterdam)**	**France (Lyon MIN Baseline Template)**	**Spain (Mercasa)**
					www.mercasa.es
Objectives	Directed at food security and competition in sale, trade & distribution	Reliable supply & distribution of fresh produce through WSM or retail or processing	Sale, trade and distribution of potatoes, vegetables, fruit, meat, fish and beverages	Reduce costs, improve quality and make transactions transparent	Support, promotion & modernization of markets; improve supply & distribution
Legislative & Regulatory Support	Mixture of regional, municipality & private companies. EAEU rule compliance. Import tariffs relatively low. SPS rules enforced. Some traceability but not to EU standards. PPP legislation	Mixture of regional, municipality & private. EAEU rule compliance. Import tariffs relatively low. SPS rules enforced. Some traceability but not to EU standards. PPP Legislation not complete	Municipality driven. Decentralized, not a food business but EU laws on food safety apply; municipal rules for registration etc. Food businesses responsible. EU traceability	Markets of National Interest (MIN). Regulations enable creation of market in consultation with Municipality. EU traceability	State owned enterprise. Shareholders: Ministry Agriculture; Ministry Finance; Municipality. EU traceability
Administration	Ministry of Agriculture, Private Boards incl. Altyn Orda and Prime Capital	Ministry of Agriculture, Private Boards incl. conglomerate styled DorDoi Association	Cooperative Food Centres	Ministry of Agriculture; Ministry of Trade	State Owner & manager of 23 wholesale food markets covering 7.7mm^{2,} 50% share of fresh market
Board Structure	Varies according to administratio	Varies according to administratio	4-25 members drawn from	4-25 members of Technical	Drawn from Ministry Shareholders

	n owner, private or public municipality	n owner, private or public	Food Centre operators. Elected Chairperson & Appointed Director	Advisory Committee drawn from government, producers, market operators & other users	
Operations	Infrastructure & service provider. Doesn't buy or sell produce.	Infrastructure & service provider. Doesn't buy or sell produce.	Infrastructure & service provider. Doesn't buy or sell produce.	Infrastructure & service provider. Doesn't buy or sell produce.	Infrastructure & service provider. Doesn't buy or sell produce
Organization	Wholesale markets; complementa ry activities (e.g. grading, SPS food safety	Wholesale markets; complementa ry activities (e.g. SPS food safety PPP)	Wholesale markets and complementar y value adding activities	Wholesale markets; exclusive areas for complementa ry activities	Wholesale markets; complementary activities (e.g. cold storage) & land
Hygienic Management	WTO & EAEU compliant	WTO & EAEU compliant	EU & WHWM compliant	EU & WHWM compliant	EU & WHWM compliant
Market Information	Limited but some availability & not distributed to users	Limited & not distributed to users	Not evident	Not evident	Not evident
National Sustainable Urban Plan Influence	Not evident	Not evident	Must comply	Must comply	Must comply
Anti-trust	National anti-monopoly enforced, especially on vertical integration	National anti-monopoly but no enforcement evidence	Not evident but have to comply with specific anti-monopoly general rules including EU	Mix of exclusive & non-exclusive rules & comply with EU anti-monopoly	Not evident but have to comply with specific anti-monopoly EU general rules
'One-stop-shop'	One-stop-shop legislation in place	SPS laboratory & collection test facilities	In-part but not categorized as 'one-stop-shop'	Not evident	In-part but not categorized as 'one-stop-shop'
Users	Producers, traders, retailers, processors	Producers, traders, retailers, processors	Operators (Entrepreneur s) & Customers.	Producers, sellers, brokers, groups,	Over 3,000 companies including

			Others: Suppliers	professional buyers	farmers as sellers
Subsidies	Yes, but relatively low for agriculture at PNAC of 1.04	Not available but understood to be very low, less than 4%	Yes. PNAC of 1.22, EU average	Yes. PNAC of 1.22, EU average	Yes. Yes. PNAC of 1.22, EU average
Import tariffs	6.9% for fruit & vegetables	6.9% for fruit & vegetables	10.5% for fruit & vegetables	10.5% for fruit & vegetables	10.5% for fruit & vegetables
Acceptance into WSM	Based on legal entity and satisfactory quality	Legal entity & satisfactory quality	Legal entity and satisfactory quality	Legal entity & satisfactory quality	Legal entity and satisfactory quality
Location & Construction	Proximity to city and complies with construction, maintenance & food safety	Close to city central & complies with construction, maintenance & food safety	Strategic location & complies with construction, maintenance & food safety	C Strategic location & complies with construction, maintenance & food safety	Strategic location & complies with construction, maintenance & food safety
Occupancy Legal Obligations	Lease	Lease	Lease, information, safety, labour & employment	Lease, information, safety, labour & employment	Lease, information, safety, labour & employment
Functioning	Days & hours set by Municipality	Days & hours set by Municipality	Days & hours set by Municipality	Days & hours set by Municipality	Days & hours set by Municipality
Access & Circulation	Maybe part open to public. National road rules & more	Maybe part open to public. National road rules & more	Not open to public. National road rules & more	Not open to public. National road rules & more	Not open to public. National road rules & more
Lease, service charges & entry fees	Negotiate with WSM director	Negotiate with WSM director	Set by negotiation with Director, annual review	Negotiate with WSM director	Negotiate with WSM director
Services	Admin, water, electricity, roads, parking, security, cleaning, waste etc.	Admin, water, electricity, roads, parking, security, cleaning, waste etc.	Admin, water, electricity, roads, parking, security, cleaning, waste etc.	Admin, water, electricity, roads, parking, security, cleaning, waste etc.	Admin, water, electricity, roads, parking, security, cleaning, waste etc.
General laws & rules cover	All practices	All practices	All practices	All practices	All practices

Compliance	WSM manager enforces	All practices	Warnings, penalties, fines, suspension etc.	Market manager enforces all rules	Market manager enforces all rules
Unique features	Significant investor	Large conglomerate	Cooperative structure	National interest tests	Large national International technical assistance

Appendix B Regulation of All Activities Occurring on the Wholesale Market Land

Definitions.

- Wholesale Market Rules (WSMR) means the agreed standards and procedures adopted by a Wholesale Market to meet its objectives and strategies in a way that's consistent with legislation, regulations, policies and codes of conduct.
- Wholesale Market Board (WSMB) refers to the governing Board of the Wholesale Market Legal Organization.
- Wholesale Market Legal Organization. The WSM will be managed by a legal registered organization.
- Wholesale Market Land (WSML) refers to the land on which the wholesale market is located and under control of the WSMB.
- Compliance Officer refers to the Compliance Office appointed by the WMB to encourage and enforce compliance with the WSMR.
- Tribunal refers to the organisation established by WSMB to receive complaints, inquire into and settle Wholesale Market Disputes.

2. All agreements made between WSMB and any person or organization or institution which creates a proprietary interest in land or buildings or activities taking place on the said land or buildings is and will be subject to these WSMR and contain clauses in all agreements stating that they are subject to the WSMR.
3. The WSMB has authority to make WSMR with respect to all activities undertaken on the said land or within the said buildings.
4. Any WSMR currently in force will remain in force unless repealed, varied or amended by the WSMB.
5. The WSMR will be applied to any new wholesale market development.
6. The WSMB shall have power to prescribe sanctions or penalties against persons or organizations located on the WSML and in breach of WSMR. These penalties may include fees, charges and termination of agreements or licenses.

The Enforcement of Wholesale Market Rules

- The WSMB shall appoint a permanent Officer-in-Charge of Market Rules (OICMR).
- The OICMR shall have the power and authority to issue written notices of breaches of rules to persons/organizations in breach of rules.
- The notice of a breach rules shall state:

1. The market rules breached
2. The date and time of the breach
3. The person(s) and organization(s) involved with the breach including sub-contractors
4. The sanctions imposed for the breach including costs and time and penalties for non-compliance or delayed compliance

5. In the event of non-compliance or delayed compliance with a sanction for a breach the OICMR may enforce and give notice of termination of a license to occupy land or buildings on the WSML
6. In the event of delayed compliance with sanctions the OICMR may revive/restore the license to occupy land or buildings on the WSML.

– The OICMR shall provide to the WSMB detailed monthly reports of compliance with WSMR and breaches and sanctions applied if any including restorations.

Dispute Resolution Procedures

1. The WSMB will appoint a 3-person Tribunal to hear and consider grievances/disputes in relation to sanctions and license terminations and related matters.
2. The WSMB will have the authority to remove and reappoint Tribunal members.
3. The time limit for lodging a grievance/dispute shall be within 30 calendar days from the time of the notice of the event by the OIMR causing a sanction or termination of license.
4. Grievances are to be lodged with the General Manager of the Wholesale Market.
5. The cost of lodging a grievance will be zero unless determined otherwise at the discretion of the General Manager.
6. Hearings of disputes will be received by the 3-person Tribunal which will not comprise any members with a conflict of interest in the dispute. Where a conflict of interest exists with a Tribunal member then an alternative member may be appointed.
7. The OICMR will prepare within 7 days for the Tribunal a detailed but brief report of the circumstances causing the breach of WMR and justification for the penalties applied.
8. The Tribunal shall select a time and place to hear the grievance within 14 days of lodgement of the dispute.
9. The Tribunal will have full regard to the WSMR.
10. Tribunal hearings will not be open to the public or to legal representatives of either parties. Witnesses may be called by OICMR or the disputing party.

Table 2: Basic List of Rules & Regulations for Functioning WSM		
1	General Provisions & Definitions	Purpose, responsibilities, accountability, transparency, health & hygiene, scope, management, ownership, Internet trading etc.
2	Administration of the WSM	Registered organization and ownership, powers of enforcement, governing laws, management, WSM promotion

3	Board	Member numbers & eligibility (including from tenants and investors), chairperson, terms
4	Operations	Secretariat, authorities, market conduct, competitive behaviour, powers of enforcement, accountabilities, scope, site access, market times & hours, loading & unloading, parking & traffic control, waste management, cleanliness & hygiene, biosecurity, identifications and security
5	Trading Produce & Products	Eligible produce, packaging
6	Users	Traders, producers, processors, retailers, customers, services, sub-contractors
7	Communication & Consultation	Communication & consultation with users & key stakeholders including local government
8	Applications & Acceptance	Procedure & application forms, tenant categories, occupancy, legality, quality commitment, renewal
9	Temporary Users	Seasonal occupiers, special conditions
10	Locations, Leaseholders, Permanent Users	Terms of occupation, rules for breaches, fees and services, 3rd parties, rights & entitlement, development plans, inspections & compliance, food safety etc
11	Legal Obligations	Provide information, food safety, labour compliance, fire safety, electrical safety, hazards & incidents reporting, general regulations
12	Functionality	Days/hours, amendments, supply, sales, 'one-stop-shop',
13	Traffic rules	Movements, general traffic rules, not open to public
14	Lease, service charges & entry fees	All fees and charges and amendments
15	Services	Water, lighting, parking, waste, cleaning, maintenance, amenities, security, training
16	General Rules	Cleaning, presentation, standards, certifications, Frequently Asked Questions
17	Disciplines	Penalties, sanctions, Regulatory Impact Assessments etc
18	Specific Regulations	Traffic, parking, logistics, waste management, food safety & hygiene, quality control, skills development & training, imports & exports, EAEU, anti-monopoly etc

Appendix C – Feedback from Dordoi Food and Alamedin WSM's on the proposals of the Draft Master Plan

Comments and proposals to the draft Kyrgyz Republic WSM master plan provided

Dordoi Food: Comments from Agro food cluster "Dordoi food":

In the framework of the productive discussion on plans and strategies for the development of wholesale distribution centres in the Kyrgyz Republic, ADB, the agro-food cluster DORDOI FOOD and the Alamedin bazaar exchanged views after the report presented by ADB specialists.

In our opinion, the western hub of the Kara-Balta wholesale market will be inconvenient, for its construction, as in the western part there are many owned vegetable storehouses. In addition, farmers have financial difficulties for placing products in vegetable storehouses. A good example is the Sokuluk refrigerator.

Therefore, instead of concentrating the hubs of the Wholesale Market near Bishkek, "Dordoi food" proposed the creation of a southern hub — a wholesale distribution center (Nookat, Kyzyl-Kiya, Batken), connected by a single information message to "Dordoi food" in Bishkek. As the most appropriate model in the realities of the existing fruit and vegetable market.

A large flow of fruits and vegetables goes to Bishkek and for export from the southern region of the Republic.

In order to regulate and streamline supplies and prices from the southern region, from where there is a large and constant flow of products to Bishkek and through Bishkek to Kazakhstan and Russia, it is necessary to create an organized wholesale market on the spot in the southern region of the country. With an informatization system to facilitate the sending and selling and implementation of analytics on a long-term basis. Especially important is the aspect of informatization and the creation on-site operational online database on the volume and date / time of dispatch (current and planned), for the fastest sales of products and reduce the risks of product loss and price dumping due to market glut.

In addition, it is economically feasible and necessary to prepare and create conditions for the packaging of fruits and vegetables at the gathering place. Container labelled "Made in Kyrgyz Republic" in accordance with the requirements and marking of the EAEU.

On the basis of “Dordoi food” in Bishkek, it is planned to expand and increase the volumes of fruits and vegetables.

Thus, as part of the strategic planning for the development of the agro-food cluster and the wholesale and retail food center “Dordoi food” with the aim of improving the quality, the creation and launch of a refrigeration room (cold storage for 2000 tons of products) is determined as necessary. In addition, in order to increase the volume of wholesale trade and the throughput capacity of the Cross-dock wholesale site, it is necessary to build and launch a second Cross-dock (Cross-dock No. 2).

It is planned to build a full complex for the processing and storage of vegetables and fruits; packaging for vegetables and fruits on the basis of “Dordoi food”, which will allow to quickly resolve the issue of packaging products in containers / boxes labelled: “Made in Kyrgyz Republic”. And to transport goods in an authentic container, without the process of repacking in Kazakhstan, which is happening at the moment.

Currently, agricultural products from Kyrgyz Republic are inadequate packaging, repacked in boxes “Made in Kazakhstan”, which causes indirect damage to the image of Kyrgyz Republic as a producer of high-quality agricultural products.

In addition, as part of strategic planning, “Dordoi food” aims to expand the range of services offered by the PPP phytosanitary laboratory “Dordoi food”. Namely - to expand the number of studies conducted on the basis of the laboratory with the issuance of the necessary conclusions (currently carried out: helminthological, entomological and herbological expertise).

This requires the purchase of additional laboratory equipment and training of relevant specialists for further work in the PPP phytosanitary laboratory.

It is planned that the gradual implementation of these programs, with a combination of a commercial and social approach, so that it benefits all: farmers, wholesalers and exporters, will strategically contribute to strengthening the agro-industrial complex of Kyrgyz Republic and ensuring the country's food and agricultural security.

Alamedin Bazaar: Comments Proposals for the creation of the Eastern Wholesale Market hub:

The creation of a single distribution center of the wholesale market in the eastern part of the Chui region will allow us to expand our market operations (facilities for processing and packaging), as well as to increase the supply for the catering sector in a highly competitive environment, along with supermarkets. Comparing with the best world practice, at the current stage this type of economic activity in the Kyrgyz Republic is practically absent.
The most important criterion for the competitiveness of the logistics center is its cargo base. Whether the load will flow to a new center or it depends on many factors.
Therefore, our proposal is to locate such a center in the eastern part of the Chui region - close to the passage of the Bishkek-Torugart highway, in the area of the cattle market of Tokmok. The proximity to the city of Bishkek, the possibility of delivery of goods from Issyk-Kul, Naryn and Chui regions. And the possibility of further shipment of goods by local entrepreneurs to the Republic of Kazakhstan and the Russian Federation, since The border post of the neighbouring state is located in this area.

This will be a strategic step, because it is important to choice the location of the logistics terminal in the area of high cargo generation, in places of developed transport infrastructure, in engineering areas with good relief of the site. And also an important factor is the presence of the multimodality function of the logistics center:

- creation of an opportunity to organize a chain of movement of goods with the involvement of different types of transport.
- When working with sales companies it is required to provide services for responsible storage, distribution and order picking.
- It is necessary to align the services offered and the technical equipment of the logistics center, as well as to use successful construction solutions. In logistics, the organization of a system for the movement of goods, a well-thought financial scheme is of paramount importance.

As part of the construction of the HUB, it is proposed to divide the territory of the complex into three zones:

1. Logistic zone
2. Trading area
3. Industrial zone

Logistic zone - a complex of specialized terminals and warehouses. The use of logistics complexes in the implementation of multi-modal or direct transport saves 12-15% of the cost of delivery, since the distance from Bishkek to Issyk-Kul and Naryn oblasts is 100-500 kilometers, while from Bishkek to Tokmok will be 60 kilometers. Most often, such functions as warehousing, external transportation with customs clearance, internal transportation, consolidation and separation of goods are outsourced to logistics complexes.
The estimated area for the logistics zone is from 30 hectares of land.

A wholesale and retail trade center, catering facilities, a sanitary and quarantine station, specialized automated warehouses, storage rooms for goods, a certification center, freight forwarding and brokerage firms, insurance companies, travel companies, etc. are planned to be located on the trade zone territory. The area of the trade zone will be from 20 hectares.

The industrial zone will be a complex of industrial enterprises for various activities. The industrial zone will be interesting for investors who want to locate export-oriented enterprises in the border zone. Also on the territory of the proposed placement of veterinary, phytosanitary, border, customs services and other agents for export-import procedures, as well as other supporting facilities.