Why Fruit and Vegetable Production is Not Fruitful for Uzbek Farmers?

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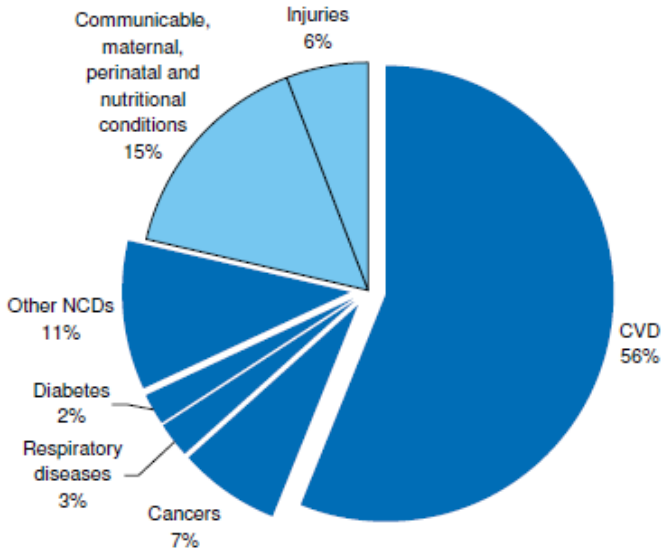
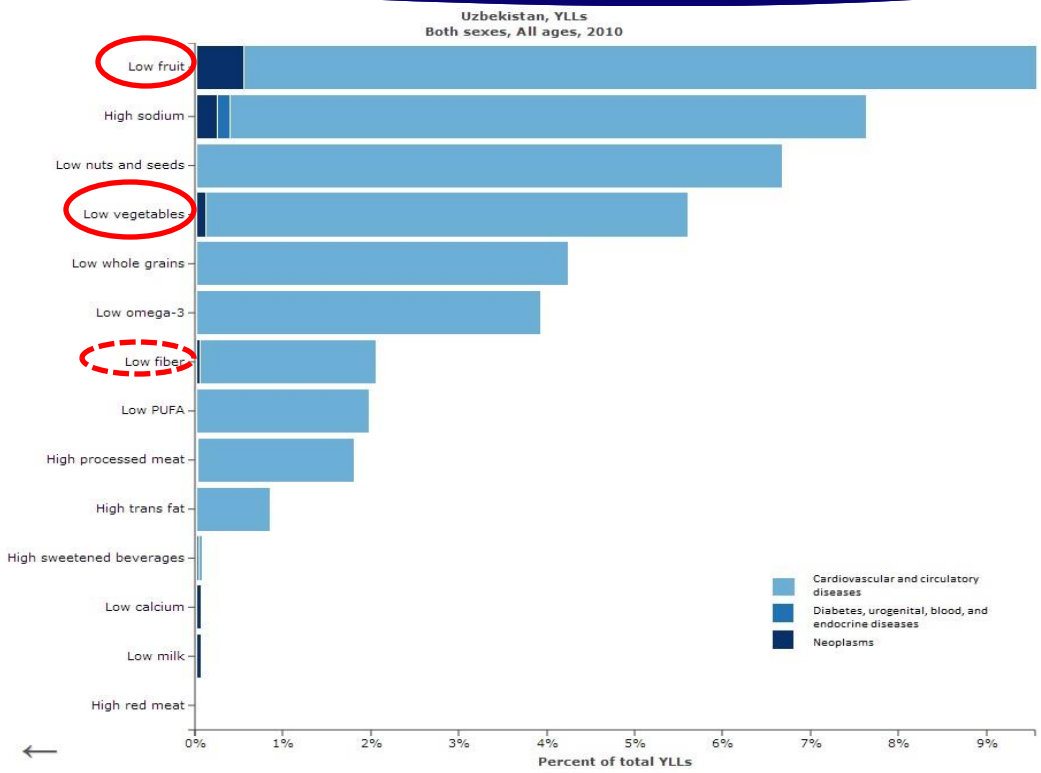
Instead of Introduction…

Proportional mortality (per cent of total deaths, all ages) in Uzbekistan, 2010 (WHO and WHO, 2011**)**





Burden of disease attributable to leading dietary risk factors in 2010, expressed as a percentage of Uzbekistan YLLs (GBD Compare, 2013)

Attention **Leading risk factor is dietary risks**

Average Uzbek consumes 246.5 g of fruit and vegetables per day compare to 400 g recommended by WHO
(Musaev, Yakshilikov and Yusupov, 2010; WHO, 2003)

MAIN PROBLEMS OF FRUIT-VEGETABLE CONSUMPTION

- State priority in favor of cereal (wheat/rice) & cotton production;
- Seasonal supply availability (84 kg of vegetables, 5 kg thereof in winter compare to recommended 142 kg and 28 kg);
- High seasonal price variability (6-fold difference for carrots, 10-fold difference for tomatoes);
- Import substitution / trade restriction policies (share of import: 0.2% for fruit, 6.5% for vegetables);
- Limited assortment (6 main vegetables, 3 main fruits);
- Limited production capacities of greenhouses (only 522 greenhouses covering 290 ha);
- Poor transport, warehousing, distribution and infrastructure as well as processing industry

Source: Uzbekistan Economy, 2006; FAOSTAT, 2012; Askarov and Nuppenau, 2010; IFAD, 2011

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Methodology:

Qualitative analysis using a tabular analytical technique.

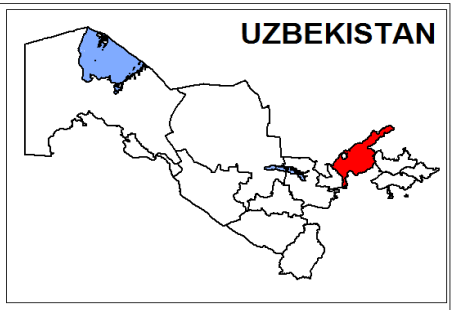
Data

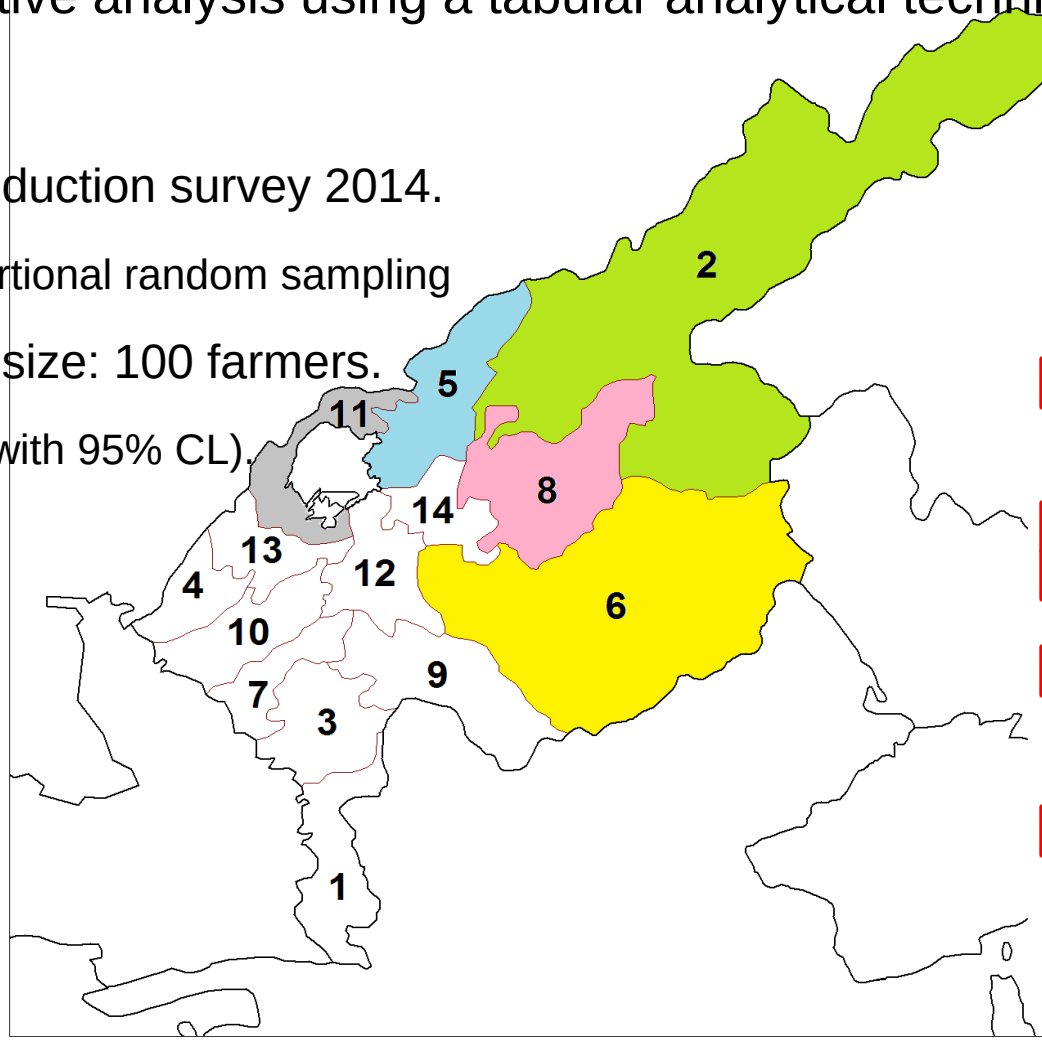
F&V production survey 2014.

Disproportional random sampling

Sample size: 100 farmers.

(CI 9.59 with 95% CL).





Tashkent Province:

1 – Bekabad district
2 – Bustonlik district
3 – Buka district
4 – Chinaz district
5 – Kibray district
6 – Ohangaron district
7 – Okkurgon district
8 – Parkent district
9 – Pskent district
10 – Kuyichirchik distric
11 – Zangiota district
12 – Urtachirchik district
13 – Yangiyul district
14 – Yukorichirchik district

	Tashkent province	Sample area (five selected districts), including:					
		TOTAL	Bustonlik	Kibray	Ohangaron	Parkent	Zangiota
Population size	**2,671,000****	***953,800****	159,700*	186,800*	122,100*	136,900*	348,300*
Area, hectare	**1,525,000**	***1,014,44***	492,998	55,978	319,335	107,972	38,164
Agricultural land, hectare	**813,900**	***496,680***	209,907	18,437	185,757	64,748	17,831

		TOTAL	Bustonlik	Kibray	Ohangaron	Parkent	Zangiota
Number of fruit and vegetable farms	Total***	**2,332**	253	482	411	701	485
	Sampled	**100**	11	21	14	32	22
	Share, %	**4.3**	4.3	4.4	3.4	4.6	4.5
Area of fruit and vegetable farms, hectare	Total***	**95,898.4**	15,580.5	9,819.9	31,477.0	26,621.7	12,399.3
	Sampled	**5,057.4**	455.6	977.3	1,756.1	1,347.7	520.7
	Share, %	**5.3**	2.9	10.0	5.6	5.1	4.2

	Area of the farms***	Including the area under:					
		Grassland, grazing land	Grain, fodder crop	Horticultural land	Vegetable land (outdoor)	Vegetable land (greenhouse)	All other land
Average value, hectare	**50.57**	**7.31**	**20.03**	**11.84**	**5.52**	**0.19**	**5.69**
Total area, hectare	**5,057.40**	**731.30**	**2,003.20**	**1,184.08**	**551.62**	**18.63**	**568.57**
Share in total area, %	**100%**	**14%**	**40%**	**23%**	**11%**	**0%**	**11%**

**as of January 1, 2011, **as of January 2012, ***as of November 1, 2013.*

Main Fruits and Vegetables Grown

Crop name	Area under crop, hectare			Harvest, kg			Productivity, kg per hectare		Obs
	mean	sd	sum	mean	sd	sum	mean	sd	
Apple	5,192	4,968	238,830	17,262	23,041	794,060	4,072	4,568	46
Potato	1,539	1,956	67,700	25,637	32,612	1,128,020	15,323	6,455	44
Grapes	7,929	7,378	333,000	60,894	73,331	2,557,550	7,714	3,980	42
Tomato	1,124	973	47,200	23,013	29,694	966,530	17,824	9,660	42
Plum	3,765	3,487	116,710	15,036	25,204	466,120	4,471	5,497	31
Paprika	542	527	15,180	7,458	10,033	208,830	12,929	8,555	28
Onion	2,841	4,341	76,720	67,716	130,933	1,828,340	24,567	12,891	27
Pumpkin	807	805	20,970	14,614	15,864	379,970	17,696	8,828	26
Carrot	1,225	1,220	30,630	23,644	22,762	591,090	20,816	14,819	25
Eggplant	498	465	9,960	7,067	8,804	141,340	14,545	8,088	20
Sweet cherry	2,263	2,362	43,000	1,349	2,948	25,640	737	1,521	19
Cucumber	694	471	12,500	12,972	8,237	233,500	18,611	6,482	18
Beetroot	938	1,070	15,010	19,022	20,404	304,350	21,219	6,988	16
White cabbage	993	694	14,900	25,333	17,984	380,000	27,067	9,699	15
Strawberry	1,641	1,881	18,050	7,913	9,412	87,040	6,027	5,799	11
Water melon	3,337	3,947	36,710	40,932	48,857	450,250	15,727	10,669	11
Garlic	329	300	2,960	3,456	3,725	31,100	10,956	6,035	9
Turnip	312	342	2,810	3,226	2,386	29,030	14,489	8,526	9
Peach	2,306	3,198	18,450	4,569	7,303	36,550	4,100	5,210	8
Tomato, greenhouse	926	534	7,410	28,978	17,950	231,820	36,625	18,677	8
Raphaus	237	258	1,660	3,226	2,742	22,580	15,914	7,715	7
Apricot	3,717	3,305	22,300	4,700	8,004	28,200	1,083	1,625	6
Melon	1,942	3,956	11,650	7,427	8,631	44,560	12,500	13,383	6
Pea	1,367	1,438	8,200	1,557	1,358	9,340	1,667	2,131	6
Pear	2,775	4,558	16,650	12,933	23,486	77,600	3,583	3,231	6
Cucumber, greenhouse	552	548	2,760	15,538	19,548	77,690	28,400	19,982	5
Radish	278	461	1,390	4,650	8,501	23,250	11,900	7,301	5

	Obs						Input weight, kg		Output weight, kg	
	Total*	1	2	3	4	5	Mean	SD	Mean	SD
Dried plum	5	1	1	0	0	3	**5,420**	9,324	**820 (15%)**	920
Dried apple	7	2	1	0	0	4	**4,571**	4,247	**3,291 (72%)**	5,676
Dried pear	1	0	1	0	0	0	**50,000**	0	**10,000**	0
Dried apricot	1	0	1	0	0	0	**15,000**	0	**500**	0
Dried grapes	10	0	0	0	0	10	**5,650**	7016	**1,459 (26%)**	1,866
Dried dog rose	1	0	0	0	0	1	**3,000**	0	**1,000**	0
Dried peach	1	0	0	0	0	1	**3,000**	0	**1,500**	0

* 1=Ohangaron, 2=Bostanlik, 3=Zangiota, 4=Kibray, 5=Parkent.

Main Problems of Fruit & Vegetable Production

MAIN RISKS OF FARMS' OPERATION						
	Average value	**Bustonlik**	**Kibray**	**Ohangaron**	**Parkent**	**Zangiota**
Sudden changes in output prices and low consumer prices	**3.89**	4.00	3.86	3.86	3.44	4.55
Distribution system failures and insufficient marketing research	**3.81**	3.82	3.52	3.43	3.69	4.50
Sudden changes in prices of raw materials, equipment and fuel	**3.81**	4.00	4.00	3.07	3.69	4.18
Sudden changes in prices of fertilizers and pesticides	**3.38**	3.36	3.57	2.36	3.13	4.23
Decline in consumer demand	**3.37**	3.55	3.43	3.29	2.78	4.14
Changes in conditions of financing and credit, high interest rate	**3.18**	3.27	2.81	1.57	3.50	4.05
Pests and disease-related risks	**3.11**	3.64	2.86	2.14	2.91	4.00
Natural disasters and severe weather conditions	**2.89**	2.91	3.33	2.71	2.44	3.23
Changes in operation of input providers	**2.75**	3.64	2.62	1.79	3.09	2.55
Increased marketing and sales costs and other sales constraints	**2.72**	2.18	3.57	0.36	2.28	4.32
Unstable irrigation supply and water shortage	**2.65**	2.18	2.14	4.14	2.28	2.95

*Values of the average score calculated as a weighted average of all ratings (from 0-to-5 scale) of respondents answered.

Main Problems of Fruit & Vegetable Production

Output Market Failures:

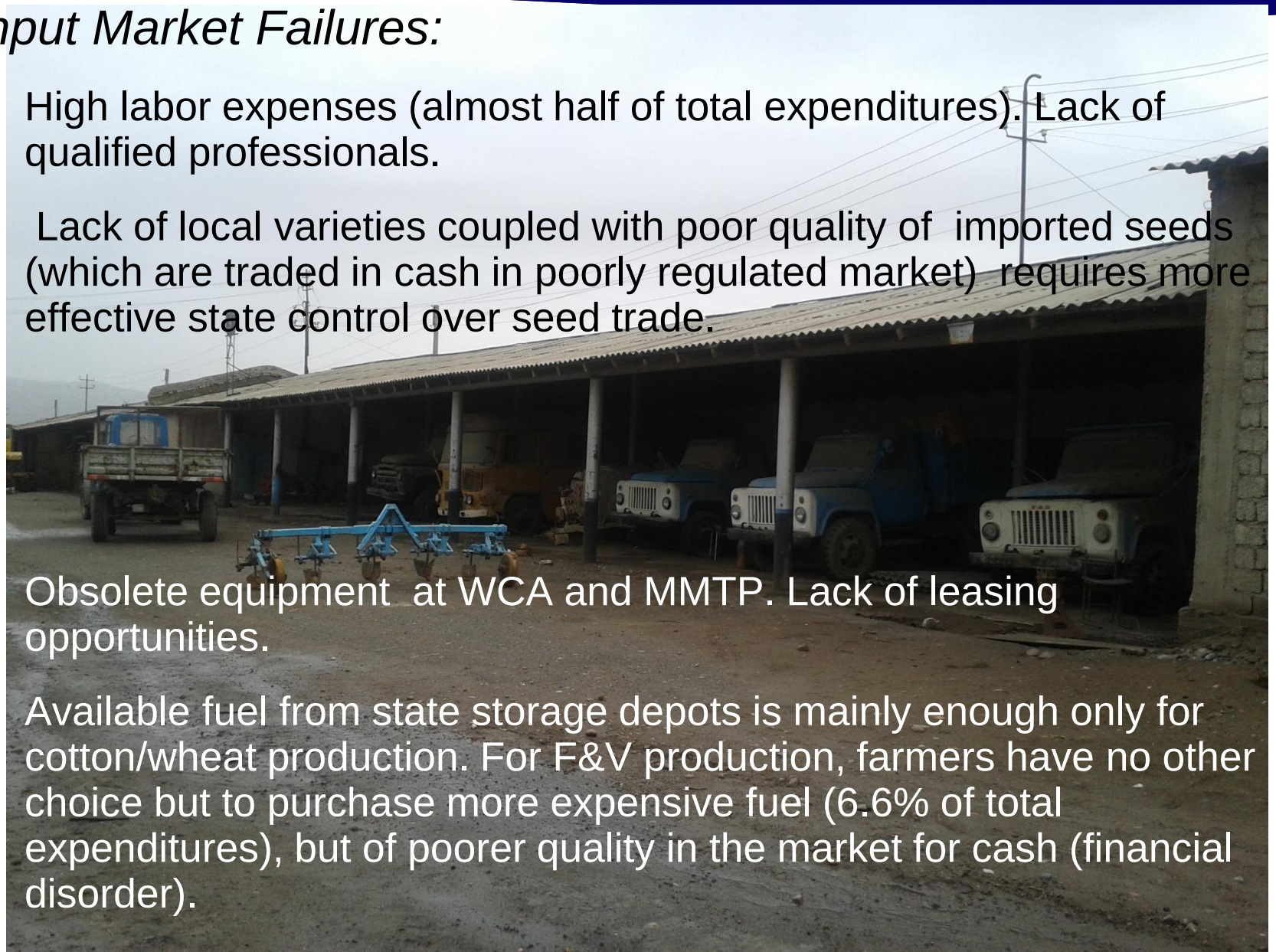
- Main consumers are wholesalers and processing companies, who dictate prices, as F&V producers have limited bargaining power. For example, prices for grapes vary from 650 UZS/kg (processing companies) to 994 UZS/kg (rural assemblers) and 1,450 UZS/kg (private consumers at *dehkan* market).
- Insufficient marketing research (0.3% of total expenditures) due to high costs and lack of information dissemination services. As a result, inadequate output delivery system.

How the Fruit and Vegetable Farmers Found Information about Marketing Channels in 2013	Number of farmers answered
Interpersonal communication (rumors, relatives, friends)	90
Information provided by the local authorities and associations	24
Individual marketing research	10
Mass media (radio, TV, Internet)	6
Agricultural extension services	2
Forced sale of products at the local fair by order of *Khokimiyat*	2

Main Problems of Fruit & Vegetable Production

Input Market Failures:

- High labor expenses (almost half of total expenditures). Lack of qualified professionals.
- Lack of local varieties coupled with poor quality of imported seeds (which are traded in cash in poorly regulated market) requires more effective state control over seed trade.



- Obsolete equipment at WCA and MMTP. Lack of leasing opportunities.
- Available fuel from state storage depots is mainly enough only for cotton/wheat production. For F&V production, farmers have no other choice but to purchase more expensive fuel (6.6% of total expenditures), but of poorer quality in the market for cash (financial disorder).

Main Problems of Fruit & Vegetable Production

Quality of Products:

- Shortage of biological pest control agents, and lack of knowledge on how to use them.
- Pesticides are still very popular, despite high prices, poor quality and imperfect sanitary conditions.
- Mostly, only visual inspection of products takes place on site.

Main Reasons for Waste and Loss of Fruit and Vegetables in 2013	Average value	5	4	3	2	1	Not a reason
Pests and insects	**2.62**	35	13	6	5	7	34
Freezing	**2.48**	40	4	7	3	5	41
Fermentation and mouldiness	**1.91**	18	10	15	5	6	46
Insufficient storing capacity	**1.59**	16	4	14	1	19	46
Inadequate storing conditions	**1.29**	11	7	10	1	14	57

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Main Problems of Fruit & Vegetable Production

Quality of Soil and Water:

- Despite generally poor quality of soil, single land tax burden is fairly high (7.3% of total expenditures), partially due to the use of out-of-dated soil quality data by tax authorities (intentionally or not?), and no scientific assessment of soil is taking place.
- Irrigation remains a big issue, as water is firstly supplied for cotton/wheat, and only afterwards for fruits & vegetables.
- Due to water shortage, obsolete irrigation networks and ineffective work of WCAs, farmers sometimes have to use drainage water for irrigation needs.
- Hostile behavior to each other is not rare among farmers at district and provincial levels. Transboundary water management requires more coordinated work among relevant parties.

Institutional Bottlenecks:

- State planned system of distribution of agricultural land (*razmeshenie*) is still in place, although further marketing of grown crops is not fully provided by the state.
- This system leads to sublet lease of land when a farmer gives his land to several smaller contractors (which is illegal and entails conflicts between main land leaser and subtenants). Yet, juridical resolution is rare.
- Some farms with more productive land and better access to irrigation are owned by elite groups due to their economic and political power.
- Abuse of power by state authorities includes cases when farmers are forced to implement additional non-core duties such as cotton picking, infrastructure construction, and mandatory sponsorship.
- Farmers are not capable to pay high interest rates for loans, and various barriers (including informal payments) hamper the situation.
- Co-existence of various regulators creates a polycracy system with each stakeholder claiming for the leading role.

Main Mechanisms for Effective Fruit & Vegetable Production

	Average value	Bustonlik	Kibray	Ohangaron	Parkent	Zangiota
State policies (removal of EX restrictions, IM-substituting production)	**4.52**	4.64	3.90	3.79	4.88	5.00
Personal savings	**4.45**	4.91	3.71	4.29	4.81	4.50
Marketing research and improved sales system	**4.27**	4.82	4.05	3.71	4.06	4.86
Knowledge capacity building	**4.06**	3.73	3.86	3.79	4.50	3.95
Wider production mix and improvement of product quality	**4.04**	4.45	3.48	3.86	4.28	4.14
Investment in new equipment & technologies	**4.04**	3.18	3.95	3.57	4.28	4.50
Informal insurance mechanisms (friends, family)	**3.97**	4.36	3.43	4.36	3.88	4.18
Agricultural extension services	**3.82**	4.27	3.05	3.07	4.06	4.45
Better infrastructure (roads, utilities, storage, irrigation)	**3.31**	3.45	2.52	4.50	3.56	2.86
Contract arrangements with business partners incl. advance payment	**3.25**	2.18	3.81	2.43	3.94	2.77
Membership in associations	**3.25**	3.73	2.52	2.57	4.09	2.91

*Values of the average score calculated as a weighted average of all ratings (from 0-to-5 scale) of respondents answered.

Steps Forward

- Lifting of export restrictions (*not valid anymore?*).
- Investment in capacity building.
- Investment in machinery and technologies (eg. drip irrigation).
- Marketing research, agricultural extension services.
- Development of indoor F&V production, and processing.

THANK YOU

I will appreciate to get additional feedback from you:

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