



RESEARCH
PROGRAM ON
Dryland Systems



ICARDA
Science for Better Livelihoods in Dry Areas



CRP-DS

Activity Report

Activity Cluster: Establishment of Seed System Platform

Reporting Center: ICARDA

Activity Title: Assessment of available infrastructures and additional requirements for functional seed systems in Karaozak district, Uzbekistan

Objective:

To prepare a broad inventory of the infrastructures currently available in the district and list additional requirements to establish an efficient seed system platform to make available to the farmers quality seed of improved varieties and related information.

Karaozak is a remote district in the Karakalpakstan territory of Uzbekistan. There is primarily agro-pastoral system in which most of the farmers have mixed farming system comprised of cereals, vegetables, fruits and livestock. The seed systems of different crops are not properly organized to make available to the farmers quality seed of different commodities. This was also highlighted in another report from a workshop on seed system conducted in Karaozak earlier this year (<http://www.cac-program.org/files/699bcb90171c2b1c7d4f2ca4d2241e4.pdf>). Informal discussion with different stakeholders and analysis of secondary data identified the following status of available infrastructures and needs for seed systems of various crops.

Wheat

Karakalpakstan level

In Karakalpakstan, the total area under cultivation under wheat is 53,000 ha.

Required amount of wheat seed is 13250 ton (at seed rate 250 kilograms per ha.) is needed in different quality grade as below.

- Super elite (primary): 3%
- Elite : 18-20%
- Reproduction 1: 77-79%

Sources of different grades of seeds are as below.

Super elite (primary) seeds:

- Karakalpak branch of RIGLC (Research Institute of Grain and Legume Crops)

Elite:

- Specialized farms authorized by the Government

Reproduction 1:

- Specialized farms authorized by the Government

Reproduction 2: This is for grain

Karaozak district level (Table 1)

- Total area under cereal crops is approximately above 13,000 ha annually
- Winter wheat planted on around 4500 ha with seed requirement of 1200 tons annually
- Paddy is planted on around 5500 ha with seed requirement of 500 tons annually
- Other cereals occupy around 3000 ha

Table 1. By crop – area (ha.) distribution for the Yield of 2016 in Karauzyak district of Karakalpakstan:

№	KARAUZYAK district - names of localities:	Total, available, irrigated area (ha)	Chronically unused area (ha)	Area under cultivation (ha)	Cotton (ha)	Winter wheat (ha)	Vegetable (ha)	Potato (ha)	Cucurbitaceae crops (ha.)	Forage (ha)	Oil seed (ha)	Legume (ha)	Rice (ha)	Maize for grain (ha)	Other cereals - white corn, rye, etc. (ha)
1	Korakul	3492	1476.2	2015.8	710	370	24	28	23	98.8	100	10	260	30	362
2	Karshigali	3873	1675.8	2197.2	880	400	48	34	24	110.2	100	10	200	35	356
3	Kuralpa	3919	2328.8	1590.2	400	350	23.5	26	22	64.7	100	10	100	48	446
4	KK 40 y sh.h.	951	456	495	0	0	0	0	0	80	0	0	300	5	110
5	Madeniyat	6651	2663	3988	500	1060	37	35	41	183	100	20	1607	57	348
6	Korauzak	5094	2000.5	3093.5	350	800	30.5	33	33	98	100	20	1133	41	446
7	A.Dosnazarov	4530	869.9	3660.1	540	900	24	25	29	212.1	100	20	1200	40	570
8	Yesimozek	3838	1726.9	2111.1	250	670	6	19	23	26	100.1	10	700	44	263
.	TOTAL:	32348	13197	19151	3630	4550	193	200	195	873	700	100	5500	300	2901

Wheat seed processing:

Wheat seed processing is performed under the centralized system by the branches of the State Don (Grain) Association. Each branch of Don has one or more seed processing plants, locally called *Tsekh*.

- Turtkul-Don (Grain) has 1 *Tsekh* for grain-seed cleaning
- Karakalpak-Don (Grain) has 1 *Tsekh* for grain-seed cleaning
- Chimbay-Don (Grain) has 1 *Tsekh* for grain-seed cleaning
- Takhyatosh-Don (Grain) has 2 *Tsekh* for grain-seed cleaning

In total, there are 5 functional *Tsekh* for grain-seed processing available in Karakalpakstan.

Farmers from the Karauzyak district send their harvested wheat grain and seeds to Chimbay Don for further processing and storage.

It is to be noted that currently (starting from 2015), under the support of central government in Karakalpakstan, wheat seed processing unit is fully equipped with all required infrastructures (seed grading, cleaning, treating, sack-packing, storing facilities, equipments, machineries, chemicals, etc.).

In past:

- Before 2014: 100% of wheat seeds used to be purchased from Andijan province
- In 2014: 40% was purchased from Andijan, and 60% in Karakalpakstan
- In 2015: 100% wheat seeds sown were produced in Karakalpakstan territory.

Wheat Seed Storage

It is for a short period of maximum 2 months until the seeding is done in September and October. However, the storage is done during the hot summer season with no rainfall in the open-air condition, and therefore there is no need for the specialized storing facilities for wheat seed and other autumn sown cereals in Karaozak and other districts of Karakalpakstan.

Current requirements

For further improvement of quality wheat seed production in Karauzyak or other parts of the Karakalpakstan, mainly southern districts, there is some need of seeder and seed cleaner to the specialized seed producing (selected) farmers under the cooperation with district's Agro-firm established by the State. Each district has its own Agro-firms, who deals with farmers and other organization working with the farmers.

Potato

Approximately 200 ha of potato crop is being cultivated annually in Karauzyak district.

Potato seeds (Elite, R-1 and R-2) are mainly imported from Netherlands via seed importing firms located in Tashkent. Further, there is an exchange (sell/purchase) of seeds within the farming community until the seed quality gets deteriorated. Imported seeds arrive packed and convenient for storage under the simple storehouses, but the seeds acquired by the exchange among the farmers in the community are processed manually and stored in the same dry and cold conventional storehouses.

Seed rate for sowing is around 3.5-4.5 tons per hectare, depends on the size. Hence, around 800 to 1000 tons of potato seeds are required annually to meet the demand of Karaozak district.

Legumes

Among legume crops, only the mungbean is being cultivated in Karaozak, and the total area under cultivation is around 100 ha. There is no established seed system for the legume crops, and the seeds are usually acquired by the process of exchange within the farming communities.

Vegetables

Mainly tomato, cucumber, sweet pepper, etc. seeds are being imported from China, Netherlands, Turkey as F1-hybrid, which is not suitable for further seed multiplication. Hence seeds are bought every year. The area under vegetable crops is around 200 ha.

Crops from *Cucurbitaceae* family

These include primarily melons, water melon, pumpkin, and cucumber. There is no established seed system for this group of crops. Seeds are usually acquired from sources within the farming community. Total area under this group of crop is around 200 ha.

Fruits

Mainly apples, pears and apricots, and grapes are grown in Karaozak district. Nowadays, under the support of Government, there is an active work going on for establishing intensive-orchards from the semi-dwarf apple transplant-seedlings, which are mainly imported from Germany and Poland and further multiplied and provided by the Research Institute of Horticulture and Vineyards named after Makhmud Mirzaev, Karakalpak branch. Pear and apricot, and some apple varieties are local varieties and acquired by the exchange among the farmers.

Grape vine seedlings are brought from Tashkent and Samarkand. Nowadays, there is an ongoing campaign for massive collection of vine seedlings from over the whole country, which is being organized by the UzRIPI (Uzbek Research Institute of Plant Industry), Kibray. The objective is to collect seedlings for all available varieties. The Governmental target is to collect more than one million grape vine seedlings for further provision and establishment/extension of grape vineyards in the country.

Fodder

Maize (shoot) and white corn (shoot and seed) are mainly cultivated for the fodder crop purpose, and crop area is around 900 ha. F1-hybrids of maize are imported mainly from Serbia, Spain, Switzerland and Moldovia. Seeds of white corn are mainly acquired from farmer to farmer, and constituting of mostly local varieties.

Seed Import

Seeds are usually imported by private companies, but the distribution is actualized by the Government organizations, such as Don Mahsulot for wheat seeds. The

department of Agriculture and Water Resources, at the provincial and district levels are involved in distribution of seeds of all crops under cultivation by the farmers in the district.

Processing and Storage

In brief, all crops (except wheat and cotton) are processed and stored by the farmers. Unfortunately, processing and storage processes are carried out in conventional approaches, such as cleaning is done manually, packing into sacks (if sacks are sufficient) and stored in dry conventional storehouses. There is a need improve post-harvest and storage knowledge and facilities for such farmers

District Agro-firms

Agro-firms consist of different departments, such as cereals, legumes, vegetables, fruits, and other crops. In order to improve seed systems in the district to help farmers any initiative should be made in collaboration with the Agro-firms. This could include strengthening of existing facilities and farm machineries for seeding and harvest, seed cleaning equipments, and other processing and storing technologies and facilities. Such a collaboration would lead towards the establishment a seed system platform for making available quality seed and related information and services to the rural farming community.

Output

The requirements to strengthen wheat seed system, and establish seed system for other crops were broadly identified. The infrastructures for wheat seed system are largely in place in Karaozak district, but some additional farm equipment and seed processing facilities are needed. For crops other than wheat modest infrastructures are need for a functional seed systems to make available quality seed to the farmers

Citation:

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