AGRICULTURE

Overview

Agriculture is the 2nd largest sector by magnitude after nonmaterial, and provides around 70% of workplace, accounting for 25% of income from export and 35% of tax yield. Cotton is the main agricultural exportable product and accounts for 90% of the overall volume of agricultural products export. Other exportable agricultural products are raw and p ossessed fruits and vegetables (approximately 9% of exportable agricultural value) as well as silk and silk products (approximately 1%). In 2009 the production volume of agricultural products in all forms of farming was 14,8 billions Somoni that makes 43,5% of gross domestic product over the country.

Currently, more than 50 thousand peasant economies operate in the agriculture of the country, of which 126 are cooperative farms, 849 are peasant collective farms and 767 are associations of peasant (farm) economies. In whole, around 70% of the population lives in rural areas. Despite the absence of information on rural economy structure, available data indicate to the prevailing position of agricultural sector in production and employment of the population.

An average population density of 43 people per square kilometer is a low indicator in comparison to many Asian countries but at the same time is high in comparison to several other Central Asian countries. The majority of the population and the most productive share of agricultural sector of the country are located in the western part where 7% of land is defined as lowland and suitable for agricultural activity.

The bases of Agricultural Industry

Tajikistan has favorable climatic conditions for cultivating of many types of grain crops. The country has a continental climate with hot and dry summer in the lowlands, but cooler and more humid climate in mountain valleys and foothills. The soil is fertile enough in the south and in plateau valleys and is less rich in the northern valleys. However, the base of agricultural resources is characterized by restricted area of arable land, by large dependence on irrigation which is necessary for plant growing and by major area for continual pastures. Tajikistan's mountain topography limits the possibilities for agricultural production. Only 30% of Tajikistan's overall territory, approximately 4.1 million hectares can be used for agricultural production. Roughly 800 000 hectares of this land is arable that makes up approximately 0,21 hectares per person for rural population. The rest of 3,3 million hectares are pastures.

The main agricultural areas are located at a height between 300 and 1 500 meters, yet in the Pamir, such crops as vegetables, potatoes and barley grow at a height of 3 900

meters. Soil erosion is the main problem including erosion from wind on previous pastures, now used for growing wheat; water erosion and landslide, particularly in high-altitude areas. In whole, the area of arable land is decreasing. This relates both to pastures and to arable land.

Land use	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Arable land	857	803	735	714	718	699,2
Grain crops	101	103	98	98	98,6	98,6
Meadows	27	22	19	17	17,6	17,6
Pastures	3259	3236	3258	3065	3064,4	3064,4
Fallow	25	19	17	23	22,3	22,3
Total area of arable	4269	4181	4127	3917	3921,0	3902,1

Low level of precipitation limits the possibilities of agriculture production for which rain is essential and it also increases the dependence on irrigation necessary for plant growing. Nevertheless, water resources are in sufficient quantity and around 85% of all the arable land (720 000 hectares) are located within the irrigation system. Unaccomplished thought-out plan and a lack of appropriate management over irrigation, drainage and pumping systems in recent years resulted in decreasing efficiency of using water resources, raising of underground waters' level and increase of salinity in some areas. At present, only some 515000 hectares of irrigated land is used.

Inexpensive at cost price, river systems, supply about 2/3 of irrigated land, while pumping systems cover the rest. Cotton, wheat, fruits and vegetables are the main irrigated grain crops. As opposed to a high pressure in arable land, 3,3 million hectares of continual pastures are rarely used due to a decrease in livestock number which is observed after gaining independence (World Bank.2005a).

Cotton Subsector

Cotton remains one of the most important crops, occupying one third of arable land, two thirds of crop production alue and 75-90% of export. 85% of total fertilizers used in the country, also fall to the share of this given sector. Agricultural ecology conditions including 10 months of sunny days and abundant water resources are favorable for cotton production.

Cotton sown area is annually increasing and crop capacity is decreasing during the past few years at an average, crop capacity decreased from 2,8 tons off a hectare to 1,8 tons. The production of cotton products decreased from 600 000 tons of seeds to 200 000 tons in a year. In 2009, 412,2 thous. tons of cotton was produced.

During the past years, growth of crop capacity and expansion of land occurred at the expense of decline in manufacturers' actual prices, resulting in a slow growth of production value. Since cotton is highly important for the country's economy the government does not abandon to control the subsector. Though production distribution and processing were devolved on a private management, the government continues to value cotton as a strategic crop and maintains unofficial production plan which local bodies of power impose on.

The total processing power of 41 ginneries in Tajikistan is 1,1 million tons. Tajik ginneries at an average clean the cotton within 200 days while in western countries it takes 110-120 days. Cotton is planted in April and is harvested until the middle of November.

Livestock farming

Tajikistan has a great potential for cultivating competitive products in livestock farming sector and supplying products to home market. The analysis of livestock production indicates that the total number of farm animals and poultry is annually increasing on an average of 8-10 per cent. However, the number of pedigree livestock is annually decreasing on an average from 10 to 25 per cent. It is known that as a result of reorganization of former collective and state farms, three categories of farms were formed – agricultural organizations (cooperative productions, jointstock farms), peasant farms and personal subsidiary farms of population. The contribution of these farms in gross output of livestock products is quite unequal.

Thus, particularly, the share of individual farms in the production of all livestock products, except eggs and poultry meat products has been steadily growing in the past few years and is exceeding 85-90%. The contribution of this category of farms in the solution to the problem of supplying the population with livestock products is indisputable. Intrasectoral development data indicates that in 2006 the share of agricultural enterprises in the production of meat totaled 3,65 thousand tones (6,2%) of its total production. Accelerating the development of livestock production depends on many factors. Of paramount importance is the introduction of advanced technology for cultivating feed crops, rational use of natural lands and on the basis of that strengthening of fodder supplies, particularly in rural households. This in turn will ensure a full feeding, improved reproduction, complete implementation of breeding and productive qualities and thus increasing the overall production volume and accordingly improving the access of population to livestock products of their own production. Meanwhile, land resources are utilized more effectively in subsidiary farms of population. Per 1 hectare of agricultural land in private households, the gross livestock products are produced 8-9 times more than in agricultural or peasant farms.

Bee-farming

Bee-farming has a great potential for development in Tajikistan. Until the recent past, the number of bee-families was 150-160 thousand, 70% of which was concentrated among the amateur beekeepers. The production of marketable honey in the republic does not exceed 60 grams per person. This is 33 times less than a recommended medical norm (2 kg per annum per person). It is estimated that in order to achieve this norm, it is necessary to bring up the honey production to 12 thousand tones that will consequently require the growth of bee-families. There is a huge fodder supplies in Tajikistan for the development of this sector. Melliferous agriculture lands make up around 5 million hectares, which enable to bring up the production of honey to 30-40 thousand tones, beeswax to 8 tones, propolis to more than 300 kg, as well as to increase the production of royal jelly, apitoxin and ambrosia. The Government of the Republic of Tajikistan pays a keen attention to the fast restoration and development of bee-farming in all the categories of farms with diverse forms of property. By the resolution of the Government of Tajikistan #338 dated 1.09.2005 on the "Program of restoration and further development of bee farming in the Republic of Tajikistan for the period of 2006-2010", an increase of bee-families to 800 thousand and honey production to 10-12 thousand tones have been planned.

The main direction of the sector's development is breeding of purebred bees – Carpathian type and local population, breeding of early female bees, perfection and introduction of a batch method of breeding. The organization of a batch method of breeding production in a system of the Republican bee bureau, in numbers, meeting the needs of all categories of farms will speed the development of bee-farming particularly among the population.

Fish Breeding

Tajikistan has the largest volume of fresh water in the world. 60% of all Central Asian fresh water is located in Tajikistan. 1 300 natural pools with total volume of 705 square kilometers, 8 large water storage reservoirs with total volume of 556,31 square kilometers, 6 large rivers with total volume of 5 555 square kilometers, 5 large glaciers with total volume of 414 square kilometers are located in the Republic. Currently, Tajikistan utilizes 20% of its available potential. The republic's demand in fish products is 14 thousand tons. On the basis of water resources volume, Tajikistan has the potential of increasing its fish production to 50 thousand tons in future.

There are the following types of fish in Tajikistan: Trout, Asp, Grass Carp, Silver Carp, Sheat-fish, Carp, ikeperch, Bream, Golden Carp.

SECTOR OF FRUITS AND VEGETABLES PROCESSING

Overview

Tajikistan is famous for its fine fruits, the role of which is extremely important in balanced provision of organism with vitamins and microelements. Due to their unique bioclimatic conditions, such fruits as apricots, peaches, grapes, apples, pears, ebony, pomegranates and citrus plants are grown and processed in Tajikistan. Tajikistan is an agrarian country. Approximately 66% of the population lives in rural areas. In export of agricultural products of the country, fruits and vegetables rank second after cotton.

In Tajikistan, the production of processed vegetables and fruits has a long tradition and good prospects for development. Agrarian and climatic conditions of the region are very favorable for the growth of various types of fruits and vegetables with a perfect taste. Long vegetation periods with sunny days result in higher sugar content in fruits, and therefore fruits and vegetables are in brisk demand in other countries.

There are approximately 40 industrial processing companies out of which only 32 are operating. Total rocessing capacity is 100 million liters annually that makes up to 400 million conditional cans. There are only four factories with a capacity of more than 10 million liters, six factories with a capacity of 1-10 million liters and the rest with a capacity of less than 1 million liters. Thus, an average capacity of processing industry is 3,7 million liters on average. A few processing plants are state or collective farms and obtain the raw product as a result of their own production. Eighty per cent of processing plants are located in Sughd region, which is also the main region for growing fruits. Sughd region is located in proximity to export markets, cheaper labor is used in this area and the electricity supply is rarely cut off.

The majority of canned factories produces juice (77%), brine (50%), tomato paste (50%) and jam (40%). Production time is limited to 5 or 6 months according to harvesting time of various crops. Lack of storage rooms and production resources are the main restrictions for the expansion of production. Factories are not used to a full capacity and only to 40% on average. During the past few years, the production was only 40 million liters on average. Smaller factories usually work with higher capacity than large ones. The output volume is low and is said to reach5%or less. Apart from producing tinned goods, there are a number of enterprises in Tajikistan engaged with drying of vegetables and fruits. These enterprises dry apricots, grapes, plums, apples and berries. The production is mainly focused on export.

Dried fruits are well stored, transported and sold at a higher price. Some factories invested funds in equipment for drying vegetables. The equipment is expensive but the profitability in dried fruits sector is a little bit higher, i.e. 10 % than in tinning

sector. The production is mainly focused on export. Drying fruits, being a less profitable business than drying vegetables is mainly carried out in small dryers. The majority of apricots, grapes, plums, apples and berries' producers are engaged in drying of products.

Dried fruits are well stored, transported and sold at a higher price. Raw products expenditure is 40-70% of general expenses. Although some producers use the raw products of their own production, a major portion is still bought from large and small farms and intermediaries. Prices offered by producers are usually lower than market prices (40-50% lower).

Apart from that, a lot of producers pay the farmers with tinned products rather than with cash because of circulating capital shortage. Consequently, the majority of producers face difficulties while buying a sufficient quantity of raw products. Farmers have a preference to sell their raw products in the market or to intermediaries but the producers of processed products are the last in the list of farmers. Just 15-20% of gardeners' total harvest is processed. Some processing factories, particularly the big ones, were privatized by their former owners. The second group, mainly including small and average factories was established and privatized by businessmen. The owners of processing enterprises are well familiar with production process and other technical processes but they have insufficient knowledge in management and marketing fields. This applies particularly to the first group. The majority of factories are working with obsolete equipment of soviet production and the investment is very small. Consequently, the efficiency of processing is quite low.

All processing companies face the challenges of liquidity and difficulties of access to necessary finances in banks. This limits their chance to update their equipment. The members of processing companies that meetings were organized with in the course of this mission, state that banks are very bureaucratic and the process of application is too lengthy. In addition, the long-term investment credits are rarely available and rates of interest that are higher than 30% are too high even for loans in the field of manufacturing resources. Currently, some enterprises are implementing new production lines such as Tetra-Park which enables to raise their products competitive ability. After several years of decline during the transition period in the 90s, the sector shows a low but a steady growth rate, mainly thanks to the export of products. Vegetable growing, gardening, viniculture and water melon growing is intensively developing. A number of new enterprises were established over a period from 2 000 which undoubtedly is a positive result of development.

Sector's raw materials base

Long vegetation periods with sunny days result in high quality fruits and vegetables. Works on diverse altitudes enables to carry out a step by step production and to organize harvesting in areas where processing plants operate, supplying raw material for a long period. Tajikistan's sweet fruits and vegetables are in brisk demand in other CIS countries, therefore Tajikistan was the main producer in former Soviet Union. Export was 100 000 tons in 1965-1990 of which two thirds were exported as fresh products and one third as canned. Currently, the structure of fruit and vegetables export is the following:

Item	**Quantity, tons**
Fruits (in total)	247 000
Apricots	30 000
Apples	83 000
Citruses	2 000
Almond	2 000
Pistachio	1 000

More than half of total areas allocated for fruits production is located in Sughd region, thereafter follows Khatlon region and the Regions of Republican Subordination with 17% of total volume. Vegetable production is more or less equally distributed between Sughd and Khatlon regions, each occupying approximately one third of total production area are followed by the Region of Republican Subordination. The most important fruits are apples and apricots, then cherries and peaches, as well as nuts, walnuts, pistachio and almond. Also some types of subtropical fruits, including lemons, pomegranates and figs are grown. Areas for growing vegetables has increased in Sughd region, decreased in Khatlon region and have not changed in the Regions of Republican Subordination and the Mountainous Badakhshan Autonomous Province.

The total area of many years of planting in Tajikistan is 102 433 hectares, of which 78 996 is irrigated. In overall scope, gardens are 63283 hectares (51 688 hectares are irrigated), vineyards - 30 121 hectares (19 005 hectares are irrigated), mulberries 7 152 hectares (6689 hectares are irrigated), and citrus plants – 1506 hectares (1 299 hectares are irrigated), look at table.

The total area of many years of planting in Tajikistan, in hectares

№	Items	Area, in hectares	Including irrigated area, in hectares
1	Gardens' area	63283	51688
2	Vineyards	30121	19005
3	Mulberries	7152	6689
4	Citrus Plants	1506	1299
	The total area of many years of planting	102433	78996

Source: Data of state committee on land-utilization

For a period of 2009, 1 million and 47 thousand tons of vegetables, 424 thousand tons of watermelons, 138 thousand tons of grapes were produced in the country. During the current year, 92769,5 tons of dried fruits and 213687 tons of fruits was exported from the republic.