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Agrarian Reform in Uzbekistan and other Central Asian Countries

Peter C. Bloch



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AGRARIAN REFORM IN UZBEKISTAN AND OTHER CENTRAL ASIAN COUNTRIES

by

Peter C. Bloch

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Peter C. Bloch

Senior Scientist, Land Tenure Center, and Faculty Associate,
Department of Forest Ecology and Management, University of Wisconsin-Madison

pcbloch@facstaff.wisc.edumail

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AGRARIAN REFORM IN UZBEKISTAN AND OTHER CENTRAL ASIAN COUNTRIES

I. INTRODUCTION

The five Central Asian countries that gained their independence at the breakup of the Soviet Union in 1991 have followed different paths of transition to a market economy in the agricultural sector. Kyrgyzstan has been the most aggressive in restructuring agricultural enterprises, privatizing land, and promoting individual farming (see Bloch and Rasmussen 1998). Kazakstan and Turkmenistan have had similar legal and policy reforms, but implementation has lagged (for Turkmenistan, see Lerman and Brooks 1998; there is no comprehensive analysis of the Kazakstan case). Tajikistan's efforts at reform have been hampered by civil strife and continued weakness of government. Uzbekistan, in contrast to the others, has attempted to control its progress towards market-oriented agriculture very closely, with the result that the agrarian sector looks on the surface very similar today to what it looked like in 1991 (see Lerman 1998). After a brief discussion of the similarities and differences among the Central Asian countries, this essay explores the results of Uzbekistan's choice to proceed "step by step," as the government says, by examining the country's characteristics of agrarian structure, agricultural production, and policy concerns.

II. DISTINCTIVE FEATURES OF AGRICULTURAL DEVELOPMENT

The development of agriculture in Central Asia under the Soviet system was based on a regime of totalitarian management. Everything that was done in the country was based on the command-order method from above. The Ministry of Agriculture determined the size of cultivated areas of agricultural crops, water volumes for irrigation, gross volumes of agricultural production, yields of agricultural crops per hectare of sown area, and even the cost of production for each unit. These targets were directed to the lower level, to agricultural enterprises and even brigades, at that time the primary unit of the organization of labor. Practically all agricultural production was transferred to collective and state farms.

Before the beginning of 1940, the private ownership of land, water, and means of production was completely abolished. At the beginning stage of the organization of collective and state farms in the 1930s, it was declared to the people that large landowners would be abolished as a class, and the small land plots belonging to the poor and middle class would remain in their possession. But the reality was different: Poor people had land, but most of them did not have the necessary means of production; i.e., they had nothing with which to plow the land. That is why, as a response to the appeal of the Communists, peasants started to unite themselves into cooperatives and teams. Later, they were further organized into collective farms—cooperatives.

During the first years of the establishment of such cooperatives, peasants voluntarily pooled their land, horses, oxen, and agricultural implements and worked together. Their voluntarily consolidated means of production and other property were considered to be their property shares in a cooperative. At the end of each year, every peasant/shareholder received his/her property share from the harvest produced by joint effort. Many peasants were happy with this arrangement, and they achieved a certain success in the development of agriculture.

After collectivization, all lands and properties were consolidated, the principles of cooperation were abolished one by one, harvests were produced according to orders from above, and the peasants were paid for their labor. This way, private ownership in the countryside was completely abolished by the middle of 1940. Land, water, and the means of production were the property of the state; cooperatives were no longer. The property of “the people” was formed. Everyone became the owners of everything; specific owners of specific property disappeared. Now, the director of an enterprise took responsibility on behalf of the state, and the people received the right to work in exchange for almost no wages. In this way, by the end of Soviet power, the material motivation to work nearly disappeared.

The Central Asian countries have some distinctive economic features in comparison to other transitional countries:

- high percentages of rural population and of economically active population in agriculture,
- the highest rates of population growth, including that of the rural population,
- small percentages of arable land and very little arable land per capita of the rural population,
- use of agricultural lands is characterized by the dominant position of pastures in comparison to arable lands,
- the highest degree of irrigation among economies in transition (Uzbekistan leads with nearly 90% of its arable land under irrigation),
- high level of specialization in cotton, especially Uzbekistan, Turkmenistan, and Tajikistan,
- limits to the further expansion of arable land, especially because of inadequate sources of irrigation water.

The Central Asian countries also have some common features:

- All republics suffered from economic contraction in the past ten years but to different degrees. Uzbekistan and Turkmenistan declined to a lesser extent; Uzbekistan even showed some growth in the industrial sector in the 1990s. On the other hand, both countries are facing the problem of high inflation.
- All Central Asian countries had negative growth in gross agricultural production in the early 1990s, but most of them have seen improvement since then. As Table 1 shows, agricultural production fell in all countries except Uzbekistan through the mid-1990s. By 2000, only Kyrgyzstan exceeded its Soviet-era production. Those numbers conceal large differences among subsectors, however: Kyrgyzstan, Kazakhstan and Tajikistan had large drops in

livestock production, whereas there were significant increases in Turkmenistan and Uzbekistan.

- Agricultural policy priorities have been to achieve self-sufficiency in food and to diversify the structure of the agricultural sector in adjustment to the collapse of the Soviet Union's intricate trade system. Table 2 shows that production of cereals dropped substantially in Kazakhstan and Kyrgyzstan until 1995,¹ but rose in Uzbekistan; there are no clear trends for Tajikistan and Turkmenistan. Since then, Kyrgyzstan's cereals output has returned to its earlier level, whereas Kazakhstan's has not; Uzbekistan has continued its growth. Almost the opposite is true for cotton, with Uzbekistan reducing output while Kazakhstan's and Kyrgyzstan's have grown (admittedly from a small base).
- None of the countries has used either of the two extreme methods of farm restructuring: restitution to former owners (as did countries like Slovenia and Bulgaria) or complete dismantling of the state and collective farms (as did Albania and Armenia).
- The relatively slow process of real privatization in Central Asia can be explained by slow development of input markets, the problem of funding social infrastructure and public health, persistent political power of the rural "nomenklatura," the design of the existing large-scale irrigation systems; and, finally, inter-ethnic problems.²
- Control over water is an important issue for all five countries. Nearly all the water used for irrigation in Uzbekistan originates elsewhere, primarily in the mountains of Kyrgyzstan and Tajikistan. Sixty-five percent of the flow of the Syr Darya system, which provides most of the water for the Fergana Valley and the Tashkent region, is released by a single reservoir (Toktogul) in Kyrgyzstan; most of the flow of the Amu Darya system, which provides most of the water for the extensive new irrigated lands of Karakalpakstan, comes from Tajikistan. The governments of the region have been working on water allocation and pricing mechanisms for several years and have made significant progress, especially concerning the Syr Darya.

¹ Kazakhstan's drop was primarily related to reduced demand from other parts of the former Soviet Union, although disruption from early reform efforts played some role, as it did in Kyrgyzstan.

² The riots in Osh in 1990 showed that ethnic sensitivities would have to be taken carefully into account. The riots were set off by the decision of the city soviet to reassign to ethnic Kyrgyz the land of a collective farm that had been farmed by ethnic Uzbeks. At least 300 people died and more than 1,000 were injured.

Table 1. Agricultural production indices for Central Asian countries**(1989-91 average = 100)**

Agriculture	1992	1993	1994	1995	1996	1997	1998	1999	2000
Kazakhstan	108.7	96.4	80.7	63.5	61.2	60.4	49.5	67.6	62.3
Kyrgyzstan	100.6	97	88	81.2	89.8	98	101	106.6	112.8
Tajikistan	75.9	71.5	69.3	60.4	52.7	50.4	48.5	47.6	52.3
Turkmenistan	88.9	99.4	105.8	103.8	68	78.2	85.7	98.9	97.4
Uzbekistan	97.9	100.2	100.2	100.9	92.4	94.7	98.7	97.2	99.6
Crops									
Kazakhstan	142.6	100.3	76.1	50	56.8	61.7	39.5	81.5	69.4
Kyrgyzstan	102.2	90.3	74.8	74.2	92.6	111.8	120.2	135	146.9
Tajikistan	74.7	72	69	60.7	60	58.1	55	52.1	58.3
Turkmenistan	95.7	99.3	103.1	101.5	45	57.3	63	79.7	73.3
Uzbekistan	93.4	91.1	88.4	92.2	84.9	85.2	86.7	85.7	86.2
Livestock									
Kazakhstan	82	85	78.1	65.2	55.8	48.6	44.9	44.9	48.9
Kyrgyzstan	92.6	88.9	79.8	71.6	74.4	74.4	75.2	76.9	79.6
Tajikistan	77.7	69.1	67.5	57.2	39.6	34.3	35.1	37.8	38.9
Turkmenistan	100.2	114.4	117.5	116.1	119.9	118.9	132.2	140.1	137.2
Uzbekistan	110.2	118.8	118.4	113.9	105.5	109.5	115.1	112.1	117.7

Source: FAOSTAT Agricultural Data.

Table 2. Production of cereals and cotton in Central Asia

(output in thousands of tonnes)

Cereals	1992	1993	1994	1995	1996	1997	1998	1999	2000	2000 as % of 1992
Kazakstan	29,649	21,533	16,375	9,476	11,210	12,359	6,380	14,249	11,534	54%
Kyrgyzstan	1,603	1,597	1,065	1,045	1,407	1,615	1,608	1,617	1,550	97%
Tajikistan	276	258	250	249	548	559	500	475	359	139%
Turkmenistan	732	1,009	1,120	1,102	545	759	1,278	1,567	1,208	120%
Uzbekistan	2,178	2,165	2,502	3,223	3,558	3,768	4,132	4,300	3,912	181%
Seed cotton										
Kazakstan	246	198	208	223	183	198	162	249	287	145%
Kyrgyzstan	52	49	54	75	73	62	78	87	88	179%
Tajikistan	513	524	531	412	318	353	384	316	294	56%
Turkmenistan	1,290	1,341	1,283	1,293	436	635	707	1,300	1,030	77%
Uzbekistan	4,129	4,235	3,936	3,934	3,350	3,639	3,206	3,600	3,006	71%

Source: FAOSTAT Agricultural Data.

III. REFORM POLICY IN THE TRANSITION TO A MARKET ECONOMY

As is true in Eastern Europe and other parts of the former Soviet Union, the countries of Central Asia have adopted a wide variety of approaches to economic reforms. In Turkmenistan, Uzbekistan and Tajikistan the transition has been relatively slow, while Kyrgyzstan and Kazakstan have progressed more rapidly. The balance of this paper will be about Uzbekistan, the largest of the five in terms of population and second only to Kazakstan in its economic potential.

Uzbekistan developed its model of the transition to a market economy with little consideration about what other countries were doing. In comparison to its neighbors Kyrgyzstan and Kazakstan, Uzbekistan is conducting “step by step” or gradual economic reforms under strict governmental control. Gradualism is the main philosophy of the Uzbek economic transition. President Islam Karimov stressed that:

centralized planning and market economies are two integrated, inherently logical and hence absolutely incompatible economic systems. Because of this, a planned economy cannot be transformed straightaway into a market one. The transition ... means the establishment of something principally new; the transition from one qualitative stage into another Thus, it cannot be implemented with a single act, but presupposes a sufficiently protracted period characterized by a sequence of stages. (Karimov 1993, p.56)

The basic principles of Uzbek economic policy are:

- priority of economic policy over politics,
- the state supervises economic transformation,
- social protection remains a major function of the state,
- consistent and phased implementation of economic reforms.

IV. AGRARIAN POLICY AND BASIC STRUCTURAL CHANGES IN AGRICULTURE OF UZBEKISTAN

Inherited Problems and Structures

Agriculture is of fundamental importance to the Uzbek economy, representing about one-third of GDP.

The Soviet agricultural system in Uzbekistan was characterized by:

- *Dominance of large collective and state farms.* In 1991 Uzbekistan counted 971 *kolkhozes* (collective farms) and 1,137 *sovkhoses* (state farms).³
- *Cotton monoculture.* Uzbekistan remains the world's largest exporter of cotton, virtually all in raw form, and the fourth largest cotton producer. It was also the largest producer of silk and *karakul* pelts in the former Soviet Union. Other important agricultural products include wheat, rice, jute, tobacco, fruits and vegetables. Even now, the share of cotton in irrigated land is 35%.
- *Crop farming dominating the structure of agriculture.* Two-thirds of agricultural production was in crop farming, as opposed to livestock. (Kyrgyzstan had the opposite structure.)
- *Heavy reliance on intensive use of land, water and chemicals (fertilizers, pesticides, etc.).* Extensive but inefficient irrigation systems were built and Uzbekistan has achieved a high level of irrigated land in the total area of arable lands. Practically all land under cotton was irrigated.
- *Lack of self-sufficiency in food products.* This was especially true of wheat, milk, meat and potatoes. One of the principal problems of the country is the dependence on food imports. Even now it is necessary to import 66% of wheat requirements, 30% of meat, 25% of milk, and 50% of potatoes.

³ Soviet law distinguishes the two forms in the following way: *sovkhoses* are state-owned enterprises that employ workers similarly to a Western corporation; *kolkhozes* are collectively-owned and managed enterprises that the members have entered voluntarily and share the profits. In later Soviet times, there was little real difference between the two types.

Uzbek agriculture operates on a relatively small share of arable land, with a dense rural population. More than 60% of the territory is desert, arid, and semiarid areas, and arable land accounts for less than 10% of total area. Agricultural activities are concentrated in a few regions where population pressure on land is extremely high. One of the most important agricultural regions is the Fergana Valley in the eastern part of the country, where the density of population is up to 300 people per square kilometer compared to Uzbekistan's average of 50 per square kilometer. Overall, there is only 0.19 hectare of arable land per capita. By contrast, Turkey has 0.42 hectare per capita (World Bank 2001).

Principal Elements of Agrarian Policy

After the dissolution of Soviet power in Uzbekistan in 1991, agriculture faced various changes as many state farms were transformed into collective farms. Agricultural cooperatives, agrofirms, corporations, associations of farmer enterprises, and free private farms were established. Currently there are 10 types of agricultural enterprises and all of them are functioning with different results. The government lends assistance toward improving their activities. In 1997-1998 Oliy Mashlis adopted the *Land Code* and the laws *On the Agricultural Cooperative*, *On the Farmer Enterprise*, and *On the Dekhkan Farm*.⁴ The Land Cadastre was designed as well. These laws mandate that peasants be the owners of the land and of the means of production, and that they be free in their activities; however, this is not yet the case.

The Uzbek government understands that successful economic reforms depend crucially on the development of agriculture. President Karimov has stressed:

In the entire chain of economic reforms, the chief principal significance is attached to the task of transformation of the agrarian sector. This is because of the dominance of rural inhabitants in the population structure, because of the agroindustrial character of the economy, and because of the role that the agriculture can play in resolving our vitally important problems. It is precisely the agrarian culture that now holds significant reserves. By tapping these reserves, one can not only improve the supply of food for people and raw materials for industry, but also insure the prosperity of the rural populace. The village is the most important source of national income; it produces the main (export) item for earning hard currency. But, most important, the village is that unit in the economy that can enable the entire republic to achieve prosperity and wellbeing. If the peasant is well off, the entire republic will be rich. It must be admitted that today we live at the expense of the village. (Karimov 1993, p. 89)

Agrarian policy is attempting to increase of efficiency of production through farm restructuring and privatization, reduce dependence on the import of food, especially grain, help redress the balance of payment problem, and diversify agriculture by increasing production of grain, fruits and vegetables (partly at the expense of the production of cotton). For the two principal crops considered of national importance, wheat and cotton, the state procurement

⁴ *Dekhkan* is the Uzbek term for household plot.

system (“state orders”) remains in effect, such that farms do not have the liberty to make planting decisions.

Farm Restructuring and Privatization

Farm restructuring and privatization are the principal focus of the transformation of agriculture.

Uzbek farm restructuring and privatization is organized as follows:

- The principal approach was actually destatization, rather than privatization, connected with the abolition of state farms (*sovkhoses*) and their conversion to different types of agricultural enterprises, including restructured *kolkhozes*, *shirkats* (cooperatives), joint-stock companies, leasehold farms, agrofirms, private livestock farms and others, with different degrees of privatization. The number of *sovkhoses* decreased from 1,137 in 1991 to 55 in 1996. *Shirkats* have become the dominant form in the past five years.
- In Uzbekistan there was no push for the breakup of *kolkhozes* (in comparison to Kyrgyzstan and Kazakhstan). The number of *kolkhozes* grew from 971 in 1991 to 1,374 in 1996, partly as *sovkhoses* were eliminated and partly due to internal division.
- Under current legislation, privatization can only be partial, because land can not become private property. Accordingly, land cannot be purchased or sold. There is some possibility for a local land market, because agricultural land may be traded within the *mahallah* (commune or local neighborhood).
- Even though the conversion of agriculture to non-government agricultural enterprises is practically completed, the state is controlling the reform process and is playing the major role in the development of agriculture through channels, including state orders, prices, subsidies, crediting and financing, marketing, etc.
- Increasing reliance is being placed on the household plots that have been a part of farm enterprises since the Soviet period and which all farm families have a right to possess.

The current situation in agriculture as a result of restructuring and privatization is complex, but it is possible to single out at least three major sectors according to the level of privatization, scale of production decision-making process, and basic functions:

- the state sector, which is now relatively small, including remaining state farms, some agrofirms, and inter-business enterprises,
- a variety of collective enterprises, including *kolkhozes*, *shirkats*, associations of farmer enterprises, etc. This subsector is currently the major player in agricultural development of Uzbekistan, and it has a lot of similarities with state sector (being submitted to state orders, receiving subsidies, having access to state-owned machinery and state-provided chemical inputs). Large scale collective and cooperative enterprises still dominate cotton and grain production (around 75% in 1998). Virtually all of production of these two crops is sold to the state,

- the private sector, consisting of farmer enterprises: private livestock farms, farmer enterprises (peasant farms), and household plots. The farmer enterprises are the principal innovation in Uzbekistan's agrarian sector. They are semi-independent entities, whose owners are given responsibilities for day-to-day farming operations but depend on the large enterprises for irrigation water, machinery, and inputs. Because they are the only true innovation in the sector, with potential to become much more important in the future, we provide more detailed analysis of them than of the other types of enterprises.

V. DEVELOPMENT OF FARMER ENTERPRISES

More than 20,000 farmer enterprises had been established as of 1 January 1998. Each consists of, generally, 3-5 hectares of irrigated land within the territory of previously existing collective farms and other large farms. They supply water to crops via their local irrigation systems. District departments for agriculture and water management allocate water among farmers according to designated limits. The limit of water for farmer enterprises is determined alongside the limits for large enterprises.

Irrigators of collective farms and other enterprises must deal with problems of interbusiness allocation. They supply water first to their subdivisions, and only afterwards do they provide water to farmer enterprises. Because Uzbekistan faces water shortages every 3-4 years, serious difficulties are created for farmers.

President Karimov has repeatedly stated that he sees the future of Uzbek agriculture in the establishment of farmer enterprises. Farmer enterprises will give peasants more freedom and will encourage more individual initiative, because under the law *On Farmer Enterprises* farmer enterprises will receive land on lease for at least 10 years and up to 50 years, whereas for other forms of agricultural activities the land is allocated to peasants to use for 3 to 10 years. Furthermore, all farms *except* farmer enterprises must conclude an annual contract for the production of agricultural goods and are obliged to give the agreed volume of products to the land provider. Farmer enterprises receive land directly from the state and they pay the state only minimal taxes. They are completely free in their activities according to the law, but as we shall see, they are severely constrained in practice.

At this initial stage of the organization of farmer enterprises, farmers are facing many problems, and they do not always solve them successfully, leading to some farmers going bankrupt and their farms being liquidated. There are more than 22,000 farmer enterprises in Uzbekistan, of which some 1,200 were dissolved in 1997 (and a similar number of new ones created).

Procedure for the Establishment of Farmer Enterprises

To organize a farmer enterprise, the aspiring farmer must write an application to the head of a cooperative and to the district *khakim*⁵ stating his wish to get a land plot for the establishment of a farmer enterprise. This application is discussed at a general meeting of the cooperative, where it goes through the selection process. The worthiest applicants receive permission. The district *khakim*, after he receives the applications from aspiring farmers and the cooperative's decision about the allocation of land plots, transfers it for consideration to a special commission responsible for the establishment of private enterprises. The *khakim*'s decision is obligatory for banks, tax inspection, and the district departments of the Ministry of Internal Affairs. The *khakimiat* then registers the farmer enterprise's bylaws.

Such a method of selecting future farmers allows for subjectivity. Using this method, it is easier for relatives and friends of the head of a cooperative or of the *khakim* to become farmers. Bribery is possible. Ideally, each district should create an independent farmers' association, where aspiring farmers will be trained and which would serve as a representative of their interests. The potentially most successful farmers would be selected from the trainees through testing. These associations would issue written recommendations to selected graduates, as is the case in many other countries. These associations might also certify the qualifications of practicing farmers.

Technical Service for Farmer Enterprises

The law *On the Farmer Enterprises* stresses that the size of land plots in the irrigation zone of farmer enterprises cultivating cotton and grain must be not less than 10 hectares, and of enterprises dealing with gardening (including vineyards) and vegetables, not less than 1 hectare. Let us imagine a farmer, who has 1-2 hectares of land. Even with the highest yields, he/she can earn annually at most a couple thousand *sums* in profit, and 1 less-expensive tractor costs several millions *sums*. The conclusion is that even a farmer with 10 hectares does not have enough income to buy a tractor or other agricultural machinery. There are still no organizations in the countryside providing farmer enterprises machine services and other means of production, and the cooperatives with their machine-tractor parks barely meet their own demand. Currently the only way for farmers to settle the problem is to pay cash to "private persons," who, during the first years of privatization, bought machinery from collective and state farms for almost nothing, according to financial records. For a very high price, these people are filling farmers' orders for land cultivation. This is one reason why farmers are suffering losses instead of making profits, and why many farms are being liquidated.

Currently machine-tractor stations (MTSs), created as a result of the consolidation of machinery formerly belonging to collective and state farms, cooperatives and other enterprises, are cultivating land according to contracts, and servicing first of all those enterprises that provided them their machinery. Furthermore, MTSs are not interested in cultivating land for

⁵ Uzbek term for district (raion) governor.

farmers, because they have small land plots, and because it is expensive to move machinery to those plots, especially to areas far from MTSs.

The number of farmer enterprises is growing in spite of these difficulties. Their share of the total area of cultivated land reached 11% in 1998 and the average size increased from 7.4 hectares in 1992 to 19.6 hectares in 1998. But the share of private farms remains relatively small in the production of cotton and other principal agricultural products. In 1998 they produced only 7% of grain, and between 2 and 4% of livestock, potatoes, vegetables and fruits, devoting a large share of their land to animal feed. The farmer enterprises remain less efficient than the larger farms, with lower cotton and grain yields.

Table 3. Number and size of farmer enterprises in Uzbekistan

	1992	1993	1994	1995	1996	1997	1998
Number ('000)	1.9	5.9	7.5	14.2	18.1	20.7	23.2
Total area ('000 ha)	14	45	71	193	265	401	455
% of cultivated land	0.3	1.1	1.7	4.6	6.6	9.7	11.3
land per farm, ha	7.4	7.6	9.5	13.6	14.6	19.3	19.6

Source: European Commission 1998.

Household Plots

Household plots, a fixture of Uzbek agriculture since soon after collectivization, have always played an important role in the sector. Furthermore, as Table 4 shows, there has been a significant expansion of household plots since 1991. The biggest jump was in 1992, when their area more than doubled following the passage of a law permitting rural dwellers to have up to 0.25 hectare of irrigated and 0.5 of nonirrigated land. In 1997, the area of arable land of HLP reached 650,000 hectares, or 15% of the country's irrigated land. Currently, people possess on average two to three plots, although in the densely populated Fergana Valley the average is only 1.3 plots. Occupying only 15% of the land, household plots play an important role in the production of some agricultural commodities. In 1995, their share in the total production of meat was 76%, of milk, 81%, and eggs, 66%.⁶ In 1998 household plots produced 16% of cereals, more than 80% of potatoes, around 80% of vegetables and 60% of fruits. Thus the contribution of household plots to agricultural production are much higher than that of farmer enterprises, both overall and on a per-hectare basis.

⁶ Collective farms retained strong positions in the number of pigs (90%) and sheep (48%).

Table 4. Area of household plots ('000 ha)

	1991	1992	1993	1994	1995
Total Area of HLP	274	554	571	588	602
of which: arable land	226	463	477	489	499

Source: Goskomprognozstat (State Committee for Forecasting and Statistics) 1997.

In summary, the collective sector continues to dominate the production of the main crops (especially cotton and grain), and the private sector is the major supplier of livestock products and of fruit, potatoes, and vegetables. This dualistic agrarian economy, partly a relic of the Soviet past and partly a result of express Uzbek government policy, has exhibited adequate stability but not great prospects for future dynamism.

VI. DIVERSIFICATION OF AGRICULTURAL PRODUCTION AND MAIN CHANGES IN LAND USE

Because of the Soviet Union's regional specialization in agriculture, Uzbekistan was the largest producer of cotton in the former Soviet Union, even though it is the northernmost cotton producer in the world. The high level of dependence on cotton monoculture created a problems for independent Uzbekistan, including inadequate attention to other agricultural goods and dependence on imports of food products—especially grain, overuse of water resources, problems with crop rotation, and most of all environmental problems, such as soil depletion, downstream pollution, and ultimately the disastrous decline of the Aral Sea.⁷

Since independence Uzbekistan has attempted to diversify agriculture and to increase the level of self-sufficiency through import substitution. An specially important goal is the achievement of self-sufficiency in grain. Under conditions of limited water and land resources, however, Uzbekistan could reach this goal only through changes in the structure of land use and productivity increases. From 1990 to 1996 the government reduced the cotton area from 44% to 35% and areas sown to forage crops from 25% to 13%, while increasing the area under cereals

⁷ The diversion of water for irrigation caused a sharp decrease in the water deposited by the Amu-Darya and the Syr-Darya rivers into the Aral Sea, a large inland saline reservoir fed by the two rivers, and characterized by both sea and lake features. It is located in the Turan lowland in the desert zone, in the territories of Kazakstan and Uzbekistan.

Prior to the 1960s, the Aral Sea was relatively stable, and the total water deposited by the Amu-Darya and Syr-Darya rivers (56 cubic km/yr) and from atmospheric precipitation (9 cubic km/yr) compensated for the loss of water through surface evaporation (65 cubic km/yr). Later, as a result of water diversion for the development of irrigation and industry, as well as a number of dry years, the inflow of river water into the Aral Sea began to decrease steadily, and practically stopped.

from 24% to 41%. Thus, area under cereals has nearly doubled, from 1.01 million hectares to 1.92 million hectares. In 1997, grain production reached 2.8 million metric tons, better than any time since the policy of cereal self-sufficiency was launched in 1995. As of 1998, imports of food products have declined, due to good harvests of grain.

The expansion of grain area occurred in practically all regions of Uzbekistan, including traditional cotton growing areas like the Fergana Valley, but the change was uneven. The regional distribution of wheat planting and production is given in Table 5.

Table 5. Regional distribution of sown area and production of wheat in 1995-1998

Region	Sown area ('000 ha)		1998/ 1995, 1995=100	production, ('000 tonnes)		1998/ 1995, 1995=100	Relative yield*
	1995	1998		1995	1998		
Uzbekistan	1164.4	1418.5	121.8	2742.2	3117.2	113.7	93.3
Karakalpakstan	19.9	32.1	161.3	30.3	34.1	112.5	69.7
Fergana Valley	168.2	257.9	153.3	600.1	926.6	154.4	100.7
Bukhara	57.0	75.2	131.9	104.2	153.2	147.0	111.4
Jizak	159.2	194.4	122.1	226.7	266.1	117.4	96.2
Kashkadarya	246.1	256.6	104.3	360.0	382.9	106.4	102.0
Navoi	28.1	45.9	163.3	54.5	93.6	171.7	105.1
Samarkand	196.7	182.4	92.7	287.3	378.1	131.6	142.0
Surkhandarya	95.8	123.5	128.9	219.2	290.7	132.6	102.9
Syrdarya	82.5	100.9	122.3	192.5	189.2	98.3	80.4
Tashkent	93.9	118.8	126.5	229.0	322.2	140.7	111.2
Khorezm	16.9	30.8	182.2	43.2	80.8	187.0	102.6

* Relative yield is the ratio of increase in production to increase in sown area.

Source: European Commission 1998, p. 53.

The most important trends over the period are:

- All regions except Samarkand and Kashkadarya expanded sown area significantly.
- All regions except Syrdarya increased the production of wheat.
- Production grew more rapidly than sown area in most regions; i.e., yields rose, but overall yield fell because of the poor performance of two regions, Karakalpakstan and Syrdarya.

Details not shown in the table (from the same source) shed light on further regional differentiation, especially among farm types:

- In most regions big collective and cooperative enterprises are the principal producers of wheat (75-87% of production). Only in Sykhandarya and Khorezm is the private sector producing close to 50% of wheat.
- The largest shares of farmer enterprises are in Surkhandarya (23%), Jizak (18%), Syrdarya (13%), and Tashkent (8%). The national average is 7%.
- Private plots are play a significant role in the production of wheat in Khorezm (45%), Bukhara (28%), Surkhandarya (22%), and Karakalpakstan (21%). The national average is 16%.

The policy of expansion of grain production may create serious problems for Uzbek agriculture. First, there has been a reduction of cotton production and therefore of exports and hard currency earnings, which the country badly needs. If the structural change had been accompanied by significantly increased yields, Second, the cutback in forage crops began to influence negatively animal husbandry, which was a second priority after grain. To respond to this situation, in 1997 the government made a decision to increase the production of forage crops and to reduce the area of irrigated land under grain.

To summarize, since independence the structure of production of major agricultural products in Uzbekistan underwent significant changes, generally reflecting the main directions of state agrarian policy. As shown in Table 6, from 1991 to 1997 there was a substantial increase in grain and potato production and a reduction in harvests of fodder, cotton, and vegetables. There was a slight growth of the production of fruits.

Table 6. Production of agricultural crops 1991-1997 ('000 tonnes)

Crops	1991	1997	1997/1991 1991=100%
Grain and Pulse Crops	2039.1	3975.2	195
Cotton	4626.9	3640.8	79
Vegetables	3348.0	2384.2	71
Potatoes	351.2	691.8	197
Fruits	516.6	547.6	106
Fodder Crops	10357.4	6453.4	62

Source: Bloch and Kutuzov 2001, table "Land 8."

Finally, the share of main types of agricultural enterprises in the production of agricultural products changed to varying degrees in favor of household plots and farmer enterprises (Table 7) As mentioned above, the role of the private sector increased for most important crops. Large agricultural enterprises retained their dominant position in the production of cotton, grain, and fodder crops.

Table 7. Changes in the role of different types of agricultural enterprises in the production of main crops, 1991-1997

(percentages of total output)	Large enterprises		Farmer enterprises		Household plots	
	1991	1997	1991	1997	1991	1997
Grain and Pulse Crops	91.8	77.6	0.1	5.9	8.1	16.5
Cotton	100	94.7	0	5.3	0	0
Vegetables	46.6	27.2	0	2.7	53.4	70.0
Potatoes	36.3	27.2	0	2.4	63.7	70.4
Fruits	39.0	37.0	0	2.7	61.0	60.3
Fodder Crops	97.6	76.2	0	6.4	2.4	17.4

Source: Bloch and Kutuzov 2001, table "Land 8."

VII. CONCLUSIONS

The results of agrarian policy are mixed. There have been some achievements in farm restructuring and changes in the structure of agricultural production, including positive economic growth in real terms in some years, increases in production and yields, and development of the private sector. Grain and cotton are still the pillars of agriculture at 80% of sown area. Despite the efforts toward self-sufficiency, Uzbekistan remains one of the largest importers of food in Central Asia.

In spite of legal and administrative encouragement to farm restructuring and increases in productivity, agrarian reform is going slowly and facing a diversity of obstacles. Despite certain achievements, the situation in agriculture is quite complex. High-level involvement of government in the agrarian sector, through regulations, control, subsidies, state orders, price policy, etc., has created a difficult economic environment for agricultural development, especially for the farmer enterprises. One of the main shortcomings of the reforms is connected with the unsolved efficiency problem, partly caused by the lack of motivation to work harder in the large-scale enterprises. Despite the efforts to stimulate the development of private sector, the latter is still in an unfavorable position compared to other types of agricultural enterprises. The

new legislation, which is well-drafted and supportive of farmer enterprises, has not been sufficient. It will necessary to improve the availability of machinery and input services and market infrastructure, and to push for deep restructuring of agricultural enterprises and the improvement of efficiency of agricultural production.

REFERENCES

- Bloch, Peter C. and Andrei Kutuzov, editors. 2001. *Rural Factor Market Issues in the Context of Economic Reform*. Land Tenure Center, BASIS Project. Statistical Compendium.
- Bloch, Peter C. and Katie Rasmussen. 1998. "Land Reform in Kyrgyzstan." In *Land Reform in the Former Soviet Union and Eastern Europe*, edited by Stephen K. Wegren, pp. 111-135. London: Routledge.
- European Commission. 1998. *Economic Trends of Uzbekistan*, July-September 1998. Brussels: European Commission TACIS Program, Information Unit.
- FAOSTAT Agricultural Data. Food and Agriculture Organization of the United Nations online database: <http://apps.fao.org/page/collections?subset=agriculture>.
- Karimov, I.A. 1993. *Building the Future; Uzbekistan—Its Own Model for Transition to a Market Economy*. Tashkent: Government Printing Office.
- Lerman, Zvi. 1998. "Land Reform in Uzbekistan." In *Land Reform in the Former Soviet Union and Eastern Europe*, edited by Stephen K. Wegren, pp. 136-161. London: Routledge.
- Lerman, Zvi and Karen Brooks. 1998. "Land Reform in Turkmenistan." In *Land Reform in the Former Soviet Union and Eastern Europe*, edited by Stephen K. Wegren, pp. 162-188. London: Routledge.
- World Bank. 2001. *World Development Report*. Development Indicators.