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**Transition to Market Economies in
Former Soviet Central Asia:
Dependency, Cotton and Water**

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TRANSITION TO MARKET ECONOMIES IN FORMER SOVIET CENTRAL ASIA: DEPENDENCY, COTTON AND WATER

Max Spoor

I. INTRODUCTION

This paper analyses problems of agrarian change within the transition to a market economy in former Soviet Central Asia. It focuses mainly on the case of Uzbekistan, by far the most important republic in Central Asia with a population of over 22 million. However, the four republics of former Soviet Central Asia, Kyrgyzstan (or Kyrgyzia), Tajikistan, Turkmenistan and Uzbekistan, after having become independent nations, have all embarked on a transitional road to become market economies. In two of the four, Turkmenistan and Uzbekistan the former communist parties -although under another name- have remained in power, with party secretary-generals becoming presidents. In Kyrgyzstan, a non-communist liberal came to power and democratic reforms had greater impetus. Finally, in Tajikistan a full-fledged civil war is raging between former communist forces and a combination of nationalist, democratic and islamic groups. While in Kyrgyzstan market reforms, with wide-spread privatization programs, have developed real momentum (together with the nearby republic of Kazakhstan), these have been implemented only partially in the other three republics.

Uzbekistan has a largely agriculture based economy, burdened by its soviet legacy of cotton quasi-monoculture and confronted

with a large-scale ecological disaster in terms of water pollution, salinization of soils and the drying-up of the Aral sea. The case will be discussed from the perspective that many developing countries (and Uzbekistan is undoubtedly one of them), passed in the 1980s and early 1990s from 'interventionist' models to 'laissez-faire' policies with state compression, market deregulation and privatization, opting for a more outward directed strategy of (world) market integration. Although these policies were a reaction on 'bureaucratic failures' of market intervention during the post-independence or post-colonial period they encountered mixed results, particularly in terms of income distribution, food security and sustainability. In this paper the question is raised whether the 'invisible hand' of the market, when it is supposed to reign in a country like Uzbekistan, will indeed provide the promised panacea for the severe economic problems the country is confronting. My view expressed below is that this will not be the case and that the state should play an active role in the reconversion of the economy.

The first section of the paper discusses the background of the Central Asian development model during the Soviet period, when the forced expansion of cotton production resulted in a growing dependency towards the Russian Federation and the Ukraine, and contributed to the current grave ecological situation. The 'agriculture led growth model' based on cotton exports to Russia and the Ukraine, and the corresponding investments in this sector did indeed bring rapid economic development, but without considering the enormous costs. The second section is exploring the crucial importance of cotton in

the development of Central Asia during the last three decades. This crop did not only restructure the overall economy of particularly Uzbekistan, but influenced the formation of a cotton-connected nomenklatura and a complex system of vested interests depending largely on this sector. The third section analyzes the options for reform. What will be the impact of decollectivization or land redistribution? Will market reforms improve water management? Has the 'white gold' to be replaced by food staples and fruit (also in view of low world market prices for cotton), or should a revival of the plan to divert Siberian rivers be considered postponing one ecological tragedy but producing others? Finally, in this section the current role of the state is discussed and in particular what could be its guiding role in the transition to a market economy.

II. AGRARIAN CHANGE IN CENTRAL ASIA: A BRIEF HISTORICAL OVERVIEW

a) Central Asia and the Russian Empire

Since the 1860s Tsarist Russia expanded its reign to Turkistan, that included the Khoqand and Khiva Khanates and the Bukhara Emirate with important cultural and trading centres such as Samarkand, Tashkent and Bukhara, known to us as part of the universe that linked east and west, such as through the silk route (Frank, 1992). Parts of the Central Asian region were absorbed by the Russian empire, while the Khiva and Bukhara states became protectorates, with in practice different degrees of independence (Carrère d'Encausse, 1988). It was only in 1920 that the traditional regimes in these states were overthrown by the Bolsheviks, while from 1924 onwards a process of formal inclusion and delineation of current borders within the (former)

USSR took place. Therefore, the Central Asian states in their current formation, were late-comers in the soviet orbit, but already had passed through a long process of Russian colonization. At the moment of colonization they were largely agricultural, semi-nomad and pastoralist societies with deeply entrenched feudal structures of land (and water) ownership. The four states Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan represented for the Russian empire not only a region with vast natural resources but also a stronghold that was seen as strategically important. There were seemingly unlimited possibilities for agricultural production, for the establishment of settler economies, and the extraction of gas, gold and other valuable minerals in the presence of a cheap labour force. Therefore, already before the inclusion of Central Asia into the USSR, a process of opening up of the territory was initiated, comparable with the 'move to the west' in the United States, when railroads were build at great speed, connecting the main cities and commercial centres, with gradually increasing numbers of Russian settlers coming in and establishing themselves (Khan & Ghai, 1979; Spoor, 1980; Carrère d'Encausse, 1988).

Cotton had already been widely cultivated in the areas around the main rivers Syr Darya and Amu Darya, before it became of great importance to the Russian empire, and later to the USSR. The feudal system had produced rather intricate and effective means of water control, with 'waterlords' being even more powerful than landlords, which can only be understood within the context of a semi-desert or desert region such as Central Asia in majority is, where water is a scarce resource. Cotton was

produced as a cash-crop that was well integrated within the traditional production systems, using a rotation between the crop and lucerne that was consumed by cattle, providing manure for fertilization of the soil. This system was still in use until the 1940s, but was abolished with the introduction of intensive cultivation of cotton that will be discussed below (Rumer, 1987:84). When the civil war of the 1860s in the United States hampered exports from the 'cotton belt', Russia turned to Central Asia for this crucial crop, sometimes referred to as 'white gold'. Central Asia was to become the major provider of the primary material for the Russian and Ukrainian textile factories.

b) The Soviet Central Asian Model

Already well before the October Revolution cotton had become the main cash-crop in Central Asia, in particular in Uzbekistan and to a minor degree in Turkmenistan and Tajikistan. Although the surplus transfer from agriculture as base for industrialization in the early Soviet model has been disputed (Ellman, 1975), these transfers were inherent in the -sometimes as colonial characterized- relations between Russia or the Ukraine and the Central Asian republics. In their well-known work on Central Asia, Khan & Ghai (1979) tried to show the negative impact of this surplus transfer (through low procurement prices and monopoly trading) during the 1920s, by emphasizing the decreasing cotton yields. However, they also argued that from the early 1950s onwards the terms of trade greatly improved for cotton producers, comparing domestic procurement prices with export parity prices, leading to a positive supply reaction (Table 1), with increasing yields and output. Their conclusion is therefore

that the development of cotton in Central Asia was 'an exception to the strategy of primitive socialist accumulation' (Khan & Ghai, 1979:21). With hindsight, I would disagree with this position. Firstly, to indicate such a linear supply response to improved barter terms of trade in the context of the former USSR is rather problematic. Cotton production expanded under conditions of 'forced cultivation', comparable with well-known colonial situations. Therefore, the 'sharp shift of sown area away from grain into cotton' (Ibid:25), which indeed can be observed, can not be understood by simply pointing to a producer's reaction to relative price changes.¹ The order 'cotton first' that came from Moscow during nearly three decades with ever expanding production and procurement quota, explains much more than any price development. Yield increases cannot be taken at face value, particularly not when one considers the bias to overestimate that was developing in the planned system.² Furthermore, it was raw cotton yields that increased, while during the 1970s the quality of cotton, in terms of fibre content was rapidly decreasing. For example, the share of inferior quality varieties increased in that period from 14 to 29 per cent (Rumer, 1987:78). Secondly, comparisons of domestic and world market prices have to be dealt with great care as the exchange

¹ Khan & Ghai (1979:71) indicate even that grain prices in 1976 were 50 per cent higher than international prices, while for cotton this was 27 per cent. However, net incomes per hectare and per ton were clearly much higher for cotton than for grain. Gleason (1990:20) makes a similar point.

² During the early 1980s output/yield data were exaggerated by as much as 20 per cent (Gleason, 1990:20). A quick look at Table 1 raises the suspicion that these overestimates were endemic for the whole agricultural sector (see wheat, barley, corn and rice).

rate was highly artificial. Producers (cooperatives and state farms) were compelled to sell to parastatals while they operated on parallel markets in order to purchase consumer necessities and even agricultural inputs, confronting prices reigned by non-official exchange rates. Thirdly, as the lion's share of cotton was (and is) exported to Russia and the Ukraine for further processing, the added value generated remained outside Central Asia. The region has practically no important textile factories, and is even dependent on importing most of its textiles. A comparison of domestic procurement and world market prices of the lint equivalent ignores this important problem. Therefore, the contribution of Central Asia, and in particular of Uzbekistan (producing 70 per cent of the CIS cotton), to national income of the former USSR was greater than what was officially measured (Rumer, 1989:35). Fourthly, no ecological costs were taken into account in the production of cotton. Although water was scarce it has always been seen as a free resource. The high costs of spillage of pesticides, the salinization of soils, the drying up of the Aral sea and the disastrous health consequences which are becoming clear would have to be estimated in a comparison that makes any sense (Carley, 1989; Khazamov, 1990). Finally, while cotton expanded under orders of Moscow, other traditionally grown high-value crops like grapes and melons diminished in importance, although market perspectives could have been better.³

This means that one should analyse more in detail the agriculture led growth model that Khan & Ghai (1979) considered .

³

However, intensive fruit production elsewhere in the former USSR has not been exempted from grave ecological problems.

as exemplary, and query in particular the costs of the model.⁴ The observation that Central Asia catapulted 'from the middle ages into modern collective farms and state farms at one go' (Ibid:3) has clearly to be qualified if one takes into account the overspecialization in one crop, the dependency relations involved, and the dramatic ecological consequences of expanding forcefully an irrigated crop while not investing in modern water saving techniques, causing the large-scale cotton cultivation now to be considered as 'the tragic experiment' (Rumer, 1989; Khazamov, 1990). The development model of Central Asia, and in particular of Uzbekistan (as for example Turkmenistan has the extra resource of great reserves of natural gas) should indeed 'be studied carefully by those countries which cannot hope to develop by classical type industrialization' (Khan & Ghai, 1979:103). However, this should be done with great reservation, in order not to duplicate the model, although this was originally suggested by the authors.

III. COTTON IN CENTRAL ASIA: FROM PANACEA TO ECOLOGICAL DISASTER

a) Cotton as 'White Gold'

Before the October Revolution in Central Asia cotton production was reasonably balanced with the grain and fruit production system. What can be observed in Table 1, is that in 1913 both wheat and barley were cultivated in winter and summer (or spring)

⁴ In the same year this study was published I visited Kazakhstan and Uzbekistan and I was equally impressed by the results of the cotton boom (Spoor, 1980). Like in their book, in my interviews the use of water and the ecological costs were never seen as a problem. The only problem was that there was not enough water, and therefore Siberian rivers should be diverted, supplying Central Asia.

seasons. These crops did not so much disappear because of the shift to cotton, but as better soils became reserved for the 'white gold' and only marginal soils were left for grains, hence to be cultivated in a single cropping (rainfed) pattern. It is interesting to note that summer (spring) grain cultivation indeed vanished. Nevertheless, crops like rice and corn, while dropping in acreage until the 1970s, expanded again substantially during the 1980s.

Cotton increased rapidly its cultivated area, from 441,600 hectares in 1913 to 1,022,600 hectares in 1940. Production was done on production cooperatives (kolchoz) and state farms (sovchoz), which were established in the early 1930s after the country had experienced a wide-scale land reform that was implemented during the second half of the 1920s (Khan & Ghai, 1979:38-9). Water management came in the hands of the regional authorities, and major canals were constructed in the 1930s and 1940s to expand the irrigated area (Gleason, 1991:13). A major boost to cotton production was provided by the completion of the Karakum Canal (from Kerki to Ashkhabad over more than 1,200 kilometres) which diverts water from the Amu Darya into the southern desert regions of Uzbekistan and Turkmenistan. Cotton cultivated area increased from 1,427,900 hectares in 1960 to 1,709,200 in 1970, reaching the 2,000,000 hectares in the early 1980s. By increasing yields rapidly, output had reached nearly 4.5 million tons in 1970 and more than 5 million tons in 1980, ten time more than the 1913 figure (see Table 1). Most investments were however made in the construction of these main canals, while the aging traditional irrigation systems were

hardly modernized (Khazamov, 1990). Where in other major cotton producing countries like the USA or Egypt water-saving techniques have been important to improve irrigation system efficiency, this had low priority in Central Asia. Major canal and field channel seepage is enormous, and losses are great when transporting water in open canals in the desert temperatures of Central Asia. That has led to the current situation where in most parts of Central Asia between 6-10 m³ of water is needed per centner (100 kg) of raw cotton, while this is for example 1.5 m³ in Israel (Khazamov, 1990:30; Rumer, 1987:81).

b) Cotton and the Ecological Disaster

The consequences of this indiscriminate use of scarce water resources are by now widely known. The Aral sea is on the verge of disappearing if no drastic measures are taken. This can be understood from the fact that from the estimated overall river volume of water destined to supply the Aral sea of 120-127 cubic kilometre per annum, an estimated 90 cubic kilometre is used for irrigation of Central Asia, with 60-65 cubic kilometre for cotton (Khazamov, 1990:30). Furthermore, the ecological disaster has become one of human ecology. Because of overspecialization on cotton and the indiscriminate use of pesticides (mostly sprayed by small airplanes) great quantities of mineral residues have polluted surface waters and aquifers. Fish from the enormous Aral and Balkhash lakes cannot be used for human consumption, hundreds of thousands hectares of fertile land have turned into sand and salt deserts, and child mortality and the number of severe birth deformations in the Karakalpak region (south of the Aral sea) have increased drastically (Carley, 1989:2).

Although the 'successful' cotton boom has been attributed to the efficiency of collectives and state farms (Khan & Ghai, 1979), the planned system in which they operated did not provide incentives to introduce water saving techniques, modernization of irrigation systems or to improve the quality of the raw cotton in terms of fibre content. As in all sectors of the Soviet economy, production or procurement targets were volume or weight oriented, mostly ignoring quality criteria. Furthermore, as the traditional irrigation system were rather labour intensive and the collectives and state farms were defending their full employment, no incentive existed to introduce any modern (labour- and water-saving) installations (Khazanov, 1990:32).

c) The Cotton Nomenklatura

Although cotton production and its rapid expansion was imposed by orders from Moscow, this did not mean that vested interests within the political élite of the Central Asian republics (partly native and partly Russian) developed over time, more and more linked to the agro-industrial cotton-complex of production, inputs, processing and marketing. In the 1970s a clear-cut cotton nomenklatura had developed, with 'cotton-barons' dominating the complex, making use of falsified output and yield data, illicite trade practices and forced labour. This came to the surface when, after the Uzbekistan Party-leader Sharif Raishidov had died in 1983, Moscow -as part of the post-Breshnev 'anti-corruption' campaign- purged thousands of cadres in Uzbekistan. This is known as the 'cotton affair', in which particularly the native Uzbek leadership was affected, a reason why after independence in Uzbekistan this (including many court cases and convictions) has

been reexamined and several persons involved rehabilitated (Cavanaugh, 1992). However, the fact remains that cotton is not only the motor of the Uzbekistan economy but that many vested interests depending on 'white gold'. As Rumer (1987:82) noted, quoting the Moscow journal Literaturnaia Gazeta:

In Uzbekistan it has degenerated into the dictatorship of a single crop, indeed one so highly specific as cotton... By being transformed into virtually one great cotton plantation, Uzbekistan embarked on a long tragic experiment -to determine the capacity of a monoculture to corrode not only agriculture, but also industry, education, health, and finally public morality.

IV. TRANSITION TO A MARKET ECONOMY IN CENTRAL ASIA

a) First Steps to Privatization

While in Kazakhstan and Kyrgyzstan the transition to a market economy has already meant widespread privatization and decollectivization, in Uzbekistan and Turkmenistan this process is much slower. Although the political regimes (led by the now renamed communist parties and former party chiefs) pay continuous lip-service to this economic transition, there is little change in the autocratic and omnipotent role of the state. Of course, being in the Ruble zone, the inflation that was released with the April 1991 and January 1992 price liberalizations in the former USSR, also affected Uzbekistan. For 1991 inflation was at a level of 147 per cent, rising rapidly to an estimated 700 per cent in 1992 (Table 2). Nevertheless, although most consumer prices have been left to the market to be determined, a package of basic needs (foodstuffs and consumer goods) is still being distributed through parastatal networks at subsidized prices (Cavanaugh, 1992:35). In the non-state sector, which traditionally has remained important in the Central Asian societies, there is even

a process of what can be defined as rapid small-scale privatization. This is particularly true for the urban informal sector (Johnson & Islamov, 1991), but there is also evidence that this is so for rural and agricultural production. The latter reforms are not only 'market reforms' but are of political significance in order to contain possible emerging land conflicts in highly populated regions. However, land ownership is still formally in the state's hands, and privatization is in the form of long-term lease contracts.

Popular pressures on existing agricultural land have already led to outbreaks of violence in the densely populated Fergana valley. A Land Code was adopted in 1990 which was supposed to reduce tension over land by permitting plots to be leased by private farmers. However, some state and collective farm officials complained that if each family were to claim the amount of land prescribed in the law, there would be no farms left. Nonetheless, by the spring of 1992 about 500,000 ha of arable land had been distributed under the provisions of the 1990 law (EIU, 1990).

Therefore, although state influence has remained widespread, and for example there is hardly any liberalization in the important export market⁵, some important reforms have been implemented, with as first step 'legitimizing the processes which were based on previously underground activities' (Johnson & Islamov, 1991:16). It is indeed questionable whether a process of decollectivization and land redistribution will lead to solving the major problems confronting in particular Uzbekistan. It would contribute to political-ethnic problems, create enormous open

⁵ The Economist Intelligence Unit reported late 1992: As cotton dominates Uzbekistan's exports, the result is that the government still directly controls some 85 % to 90 % of total exports. There have been calls for more trade liberalization, and a growing illicit cotton trade may oblige the government to relinquish control of exports. In practice, this has not happened during the first half of 1993.

unemployment, and soon cause concentration of land and a new landless and rural workers' class. Water management, which is already a central problem for the whole of Central Asia, in absence of state, regional or municipal control would be even more complicated to solve (Gleason, 1991). We should not forget that Turkmenistan and Uzbekistan have three quarters of the region's land area and most of the arable land, while only having access to one fifth of the water resources (Rumer, 1989:76). Although 'bureaucratic failure' contributed greatly to the ecological disasters like that of the Aral Sea, it is hardly to be expected that 'the market' will provide the solution.

b) Down with Cotton?

There is presently an anti-cotton sentiment in Uzbekistan, which sees the cotton as the cause of all problems (dependency, ecological disaster etc.). It can be compared with the anti-sugar campaign that briefly reigned during the early 1960s in Cuba, when the leadership saw sugar erroneously as an 'imperialist crop'. At that time the hasty decision was made to cut down the best sugar fields and to plant food crops. The costs incurred were great (loss of sugar output and foreign exchange, lack of experience in other crops leading to mixed results, and multiplier effects in the important sugar-processing complex and the delivery industries). Some would argue now that the cotton area in Uzbekistan (and Turkmenistan) should be severely reduced, following a nationalist slogan which was heard as far back as 1970 in Tashkent 'down with the cotton, long live the orchards' (Khazanov, 1990:25). However, in the late 1980s most demanded reductions were in the order of 15-20 per cent, with 1.7 million

hectares seen as objective (Gleason, 1990:22). In Table 1 it can be seen that already in 1991 this level was already reached, while there is some increase (albeit not comparable) in the grain and potato areas and output. On the general contractionary tendency Cavanaugh (1992:37) correctly pointed out:

Although state procurement prices have been raised for most crops, they are still set well below market levels. This gap has created a new "scissors crisis" for farmers, who are faced with skyrocketing prices for fuel, machinery, and other manufactured goods.

Furthermore, cotton exports confront a complex market situation, in which the Russian and Ukrainians are not prepared to raise their prices (EIU, 1992:97), while they represent the traditional captive market. World markets are flooded with cheaper and better quality Chinese cotton fibres causing more competition at lower world market price levels.⁶ Taken the quality problems of Uzbekistan cotton into account for the moment it is destined to the big brothers in the north, while alternative markets still have to be conquered.

There are other voices in the Uzbek power élite, who are calling for a revival of the project to divert Siberian rivers and supply Central Asia with new water resources. Under pressure of the enormous costs that such a project would induce, but also because of a growing environmental lobby the Kremlin (under Gorbachov) the project was aborted in 1987. In Central Asia, taking a purely demand-side perspective this decision was deplored and is now seen with certain suspicion. However, there

⁶ In the early 1980s the former USSR contributed more than 20 per cent of the world cotton production, while Uzbekistan produced as much cotton as the USA. With the 1992 harvest of 4.13 million tons Uzbekistan is still one of the world's major cotton producers.

is no doubt that the ecological costs to Siberia would be enormous, apart from the fact that more water would not solve (and in some cases rather aggravate) the problem of mineral pollution and salinization, if water management remains ineffective.

The question is therefore, why not diversify the cotton to food crops and fruit production (grapes and melons), that has been traditional in the area? This could be part of the solution, but the main problem is not the cotton crop itself, but the inefficient use of water and agricultural inputs. Khazanov (1990:32) argued that most of the irrigation water 'does not reach the fields' and therefore drastically cutting the cotton area would only marginally ease the Aral sea problem (while at the same time squeezing the life-line of the Uzbek economy). What is needed are policies that improve the use of water and pesticides, partly done through the market (by increased prices, indicating real scarcities), and partly through regulations. The state will therefore have to play a crucial role. Investments have to be carried out in irrigation schemes and water-saving techniques, while concentrating cotton production in those areas where water losses are the least and production options are best. Diversifying at large-scale to other crops grown on former cotton areas will only be possible in the long-run as water resources are heavily polluted by minerals and food crops would be affected immediately (Khazanov, 1990:32). The reality is that cotton employed in the mid-1980s 40 per cent of the Central Asian labour force (Rumer, 1989:62), while occupying three-fifth of the cultivated area in Uzbekistan (not including the silage crops).

Therefore not only agriculture and in fact the overall economy has to diversify (and more non-agricultural jobs have to be created), but also the still dominant cotton sector needs to be developed in terms of fibre content, improved varieties, water-saving techniques, alternative and controlled use of pesticides and integrated pest management, and last but not least an increasing processing industrial capacity. Most recently the Karimov government has opened its borders more to foreign companies and donors, with several industrial and agricultural investment projects as a result. One example is a large-scale project in which an estimated 50,000 hectares of productive land will be modernized and diversified towards potatoes and wheat with Dutch technical assistance.⁷ Focusing its attention to increased food production (reducing its dependency from Russia and the Ukraine) is indeed important. However, doing this in a large-scale 'leap' fashion might cause other socio-economic problems that are underestimated, while not attacking the fundamental problems of water management.

c) Market Development or the 'Invisible Hand'?

Although some reforms in terms of property rights have been pushed forward (Johnson & Islamov, 1991), in Uzbekistan market reforms have been limited. Cavanaugh (1992) therefore noted that there will be a 'long road to the market' and also observed for the case of Uzbekistan that:

⁷ According to newspaper reports of early June 1993, a Dutch cooperative company will be the most important sub-contractor in this project which is entitled 'Small Holland'. This company CEBECO Handelsraad has a near monopoly position in the Dutch market for agricultural inputs.

..it is clear that the republic's conservative government will refrain from any measures likely to press too hard on the already impoverished nation and possibly cause political unrest (Ibid:38).

It will be important to stimulate private production and marketing, reducing the omni-potent presence of the state. However, the 'invisible hand' of market reforms will not spontaneously develop markets, in particular not when rural marketing systems hardly exist, or are fragmented and inefficient. The state should develop a strategy in which 'market development' takes a prominent place. Private and collective production should develop in an environment that indeed connects incentives with quality and possible markets. Therefore, not only the state should have a enabling or facilitative⁸ role (providing education, research, extension services), but also an initiating role that will emphasize modernization of irrigation works, improve efficiency of the use of water, and investments in processing (oilseed and textile in the case of cotton) industries to decrease dependency of the economy. If a diversification of agricultural crops is pursued, the development of the marketing sector, including inputs, processing, transport and credit provision becomes crucial. This should be given an emphasis that is complementary to the current drive towards productive modernization, instead of remaining a residual area of policy.

The Hague, September 1993.

⁸

Faaland & Parkinson (1991).

Table 1. Agricultural Sector Uzbekistan (1913-1991)

		1913	1940	1960	1970	1980	1985	1986	1987	1988	1989	1990	1991
Wheat (winter)	Area	460.5	615.6	384.2	540.0	500.0	396.7	269.9	426.9	431.2	327.6	407.0	..
	Output	299.3	172.4	253.6	340.2	415.0	353.1	224.0	461.0	539.0	321.0	521.0	..
	Yield (Tn/Ha)	0.7	0.3	0.7	0.6	0.8	0.9	0.8	1.1	1.3	1.0	1.3	..
Wheat (spring)	Area	471.7	396.7	128.2	123.6	22.7	62.5	32.1	41.0	25.3	18.3	24.8	..
	Output	212.3	103.1	70.5	66.7	16.8	34.4	17.0	34.0	24.0	21.0	32.0	..
	Yield (Tn/Ha)	0.5	0.3	0.6	0.5	0.7	0.6	0.5	0.8	1.0	1.2	1.3	..
Wheat (total)	Output	512.6	272.6	327.0	408.9	433.9	387.9	241.0	495.0	563.0	342.0	553.0	..
	Yield	..	..	..	..	..	..	..	..	..	..	..	..
Barley (winter)	Area	117.7	107.1	211.8	312.4	304.3	163.0	119.4	208.9	256.4	214.7	269.2	..
	Output	57.7	34.3	167.3	253.0	276.9	166.3	117.0	257.0	359.0	219.0	358.0	..
	Yield (Tn/Ha)	0.5	0.3	0.8	0.8	0.9	1.0	1.0	1.2	1.4	1.0	1.3	..
Barley (spring)	Area	132.9	207.5	90.6	77.7	36.3	48.0	19.7	31.4	27.8	22.5	22.5	..
	Output	74.4	64.3	55.3	45.8	33.0	33.6	15.0	32.0	32.0	27.0	27.0	..
	Yield (Tn/Ha)	0.6	0.3	0.6	0.6	0.9	0.7	0.8	1.0	1.2	1.2	1.2	..
Barley (total)	Output	143.3	98.0	225.4	301.4	309.2	199.4	132.0	289.0	391.0	246.0	385.0	..
	Yield	..	..	..	..	..	..	..	..	..	..	..	..
Rice	Area	161.1	83.1	31.2	63.3	105.1	150.3	127.5	155.2	166.5	160.8	147.1	159.0
	Output	210.2	125.5	57.8	184.9	507.2	482.2	399.0	506.0	581.0	484.0	503.0	520.0
	Yield (Tn/Ha)	1.3	1.5	1.9	2.9	4.8	3.2	3.1	3.3	3.5	3.0	3.4	3.3
Corn	Area	38.8	17.3	30.8	24.6	185.0	128.9	117.4	118.6	116.3	111.1	108.8	107.4
	Output	38.8	33.5	70.8	66.3	1,239.7	443.1	389.0	421.0	520.0	460.0	431.0	421.0
	Yield (Tn/Ha)	1.0	1.9	2.3	2.7	6.7	3.4	3.3	3.6	4.5	4.1	4.0	3.9
Cotton	Area	441.6	1,022.6	1,427.9	1,709.2	1,912.1	2,027.0	2,091.2	2,103.0	2,016.9	1,967.3	1,832.6	1,719.6
	Output	517.2	1,385.9	2,823.5	4,495.2	5,579.0	5,381.8	4,989.0	4,858.0	5,365.0	5,292.0	5,058.0	4,643.0
	Yield (Tn/Ha)	1.2	1.4	2.0	2.6	2.9	2.7	2.4	2.3	2.7	2.7	2.8	2.7
Potatoes	Area	6.5	23.5	28.1	21.2	23.3	26.3	30.0	30.7	31.1	35.3	42.0	39.5
	Output	46.2	113.3	162.7	180.3	239.0	240.7	308.6	261.0	308.0	325.0	336.0	316.0
	Yield (Tn/Ha)	7.2	4.8	5.7	8.3	10.0	9.0	10.2	8.5	9.9	9.2	8.0	8.0

Sources: IBRD, Statistical Handbook: States of the Former USSR (1992);
 Narodnoye Khozyaystvo Uzbekskoy SSR za 70 let Sovetskoy Vlasti (1987).

Table 2: Macro-Economic Indicators Uzbekistan

	1985	1986	1987	1988	1989	1990	1991	1992
GDP (Rbl.Mill.Current Prices)	..	..	..	29,372	30,698	32,340	56,300	..
NMP (Rbl.Mill.Current Prices)	20,000	19,600	19,354	20,743	21,558	23,402	45,963	..
Real NMP Growth (%)	.. ^a	.. ^a	.. ^a	9.7	3.1	4.3	-0.9	-20.0
Gross Agric.Product (Rbl.Mill. Constant 1983)	10,215	10,014	10,014	10,049	10,931	10,456	11,114	10,870 ^b
Population (x 1,000)	18,090	18,107	19,107	19,623	20,108	20,532	20,955	21,450
Trade Balance (Rbl.Mill)	..	..	..	-1,674	-3,868	-4,851	-619	..

Sources :

EIU (1992; 1993), IBRD (1992).

Notes (a): Narodnoye Khozyaystvo Uzbekskoy SSR.... (1987), p.24 provides the growth rates 4.8%, 2.5% and 3.8% for NMP (1985-87), but given the later data (with decreasing NMP in current terms) these are hardly reliable.

(b): The limited growth of the agricultural product was due to the livestock development. There was outright stagnation of crop production during the 1980s.

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