Poverty and Food insecurity in Uzbekistan

WFP

World Food Programme

April 2008

1. AGRICULTURE and FOOD AVAILABILITY

1.1 AGRICULTURE

Uzbekistan is predominantly a rural society and agriculture has been and still the dominant sector of the Uzbek economy.

While two third of Uzbekistan's population, approximately 15 million people, live in rural areas, agriculture employs about 60% of the rural population and 35% of the total active population in the country. The share of agriculture is nearly a third of Uzbekistan's GDP, and agricultural exports (in particular cotton fiber) account for approximately 40 percent of total exports. Agriculture is also the key source of government revenue, primarily through cotton production and taxation. Moreover, the processing of primary agricultural output (food processing, dairy products production, cotton processing, etc.) represents a significant part of industrial activities and contributes to about 5% of the GDP.

Agriculture is based on irrigated farming.

Uzbekistan covers about 450,000 square kilometers. The climate is arid and continental and rainfall is limited to the winter months. The largest category of land use (53 percent) is unimproved natural pastures for grazing and hay; 36 percent is non-agricultural and about 10 percent is cultivated, of which 82 percent is irrigated (4.4 million ha, about 0.3 hectares per rural inhabitant). Main agricultural areas are located in the basins of the Amu Darya and the Syr Darya rivers which supply about 70% of irrigation water. Large expansion of irrigated lands during 1960s to late 1980s resulted in excessive water take-off from these rivers causing drying out of the Aral Sea, increasing soil salinity, and other adverse environmental impacts.

Crop sector is dominated by cotton and, to less extent, by wheat.

Approximately 60 percent of the value of agricultural production comes from the crop sector and the remainder from the livestock sector. Cotton is the most important crop economically. This "strategic crop", produced in irrigated areas throughout the country, accounts for about 40 percent of cultivated land and makes up about 40 percent of export earnings. It makes Uzbekistan the fifth largest cotton producer and second largest cotton exporter in the world. Since independence, and as a result of ***the self-sufficiency food policy*** adopted by the Uzbek Government, wheat has become the second "strategic crop". It accounts for about 30 percent of the cultivated area. The rest of the cultivated area is used for growing fruits and vegetables (Uzbekistan continues to be one of the major suppliers of fresh and processed fruits and vegetables in the region), in addition to potatoes, tobacco and fodder crops.

Animal husbandry in Uzbekistan is specialized not only in production of foodstuffs (meat, diary products, eggs) but also in the production of raw materials that include cocoons of mulberry silkworms and karakul that are highly demanded in the world markets.

Very slow land reform and maintenance of state control over the agriculture sector
Since independence, Uzbekistan's agricultural policy has been determined by several objectives: stabilization of cotton export revenues; achieving self-sufficiency in wheat production; insuring government revenues through implicit taxation of agricultural products (cotton and wheat) and keeping food prices low in the local market. To achieve these objectives, the Uzbekistan Government has adopted a slow and regulated approach to land reform, and has maintained state controls over the production, procurement, pricing and marketing of the two "strategic crops" -cotton and wheat - which account for about 80 percent of cultivated land. The Government has also maintained the state monopoly on supply and marketing of agricultural input, and restricted trade by banning exports of key agricultural commodities (cereals and livestock) and importing most key foods (sugar, vegetable oils) in a centralized manner through a state trading company (World Bank, 2003 and 2005; ADB, 2006). Thus, the liberalization of production and domestic markets has been limited to some agricultural sub-sectors such as livestock, fruits and vegetables.

A process of farm restructuring without privatization
The Soviet agricultural system in Uzbekistan was characterized by the dominance of large collective and state farms (kolkhozes and sovkhozes). Land reform consisted in dismantling the large state farms, by introducing *shirkat* collective farms (5,000 hectares or less) and private family farms (10–250 hectares) and by expanding the program of *dekhan* or household plots. However, land reform did not institute the right of private ownership. The state continued to own the land and farmers were given time-bound usufruct rights (right to use). Moreover, the command and control system was preserved: the state heavily regulated the size and types of activities, severely limiting the amount of land that could be devoted to particular activities.

1. *Collective farms (Shirkat).* The *shirkat* is essentially a new version of the old Soviet collective farm. In theory, *Shirkats* are independent entities, which are technically joint-stock companies that the former workers hold shares in. However, in most cases the *Shirkat* is basically a continuation of the *kholkoz*, including the same leadership. Most of the *shirkat* farms are generally devoted to the production of cotton and grains. In 2003, *shirkat* farms (about 1,740) occupied 52 percent the cultivated land and produced 62% of cotton and 49% of wheat.

2. *The shirkhat provides little incentive for workers who are paid* very small wages, and sometimes only receive goods, such as cotton-oil, in kind. According to the ADB, in 2003, shirkat workers received 23% of their salaries in kind. Moreover, in order to be paid (in some combination of cash and in kind), the shirkat should met its procurement target. However, since most shirkats tend to be loss making or only marginally profitable, the cash income of their workers tends to be very low. Worse, sometime it is withheld for months before it is actually paid out. (ADB 2005, ICG 2004) In most cases, workers remain in the collective because they also receive small plots on short leases, on which they grow vegetables and other crops, and/or because they benefit from informal arrangements such as permissions to use extra land,

diversion of inputs, fuel, and services to their household plots, grazing their livestock on shirkat lands, etc.

3. ***Private family farms***. Private farmers receive land on a lease of 30 to 50 years. Most of these farms are small, with an average size of 25 hectares but some are as large as 150-250 ha. In 2003, Uzbekistan had about 100,000 private family farms occupying 37 percent of cultivated land. These are usually obliged to grow a certain percentage of cotton and/or grains (wheat, rice) and sell their production to the state at procurement prices. Failure to comply with the mandatory cropping plans may result in the expropriation of the private farm land by the state. In addition, they are heavily dependant on the shirkhat for irrigation and inputs. Private family farms account for about 38% of cotton and 52% of wheat production. They are marginally profitable, because of their lower than *shirkats* production costs and their relatively greater freedom to cultivate and sell other crops on the remaining 10–20% of lands that are not dedicated to cotton and wheat.

   However, private livestock farmers are significantly more independent than private crop farmers as they do not depend on the state farms for irrigation and other essential inputs. They occupy an average of 65 hectares and possess an average of 400 heads of livestock.

4. ***Dekhan Farms or Household plots***. During the Soviet era, such plots were allocated by the state for all rural and a limited number of urban households for constructing dwellings and for having a supplementary source of food. However, since the independence in 1991, the number of these farms increased from 2.3 to 4.3 million. This dramatic increase is certainly one of the most important social and economic features of the agricultural sector. According to the 2001 FBS, 82 percent of all households (at the national level) and 97 percent of all rural households have access to household plots. In urban areas the size of the land is small, and more than half of this is covered by buildings or housing. Rural inhabitants on the other hand, access more land on average, and a larger fraction (about 60 percent) is useable for agricultural purposes.

   The average size of Dekhan farms is about 0.17 ha and are limited by law to less than 0.35 ha each. However, despite being very small (average 0.1 ha) and occupying only 11 percent of total cultivated land, they play a major role in terms of agriculture production and, more importantly, in household food security. Dekhan Farms are vital for the survival of farm workers as well as for many poor and unemployed urban households as they provide more than a quarter of the food consumption of rural households and 7 percent of the food consumption of urban households (2001 HBS).

Trend in Agricultural Production: The major role of Dekhan Farms in agricultural production and food supply

After independence, total agricultural output dropped significantly in Uzbekistan, so that by 1996, it was about 84 percent of its 1991 level. However, and as a result of the land distribution and of the engagement of a growing number of households in agriculture,

agricultural production had significantly increased since 1996. According to official data it has surpassed, starting from 1999, its 1991 level, reaching, in 2005, 140% of the 1991 level. Thus, according to official statistics again, the agricultural sector in Uzbekistan had performed better than the same sector in all of the FSU countries. (See Figure below)

However, the International Monetary Fund (IMF) and other international sources estimate that the real growth rate of the agricultural output as well as that of the GDP were significantly lower than the official rates. According to analysis by the World Bank, output in agriculture, since 1996 had grown modestly and in 2005 was at levels with that of 1990 (World Bank, EM, 2005).
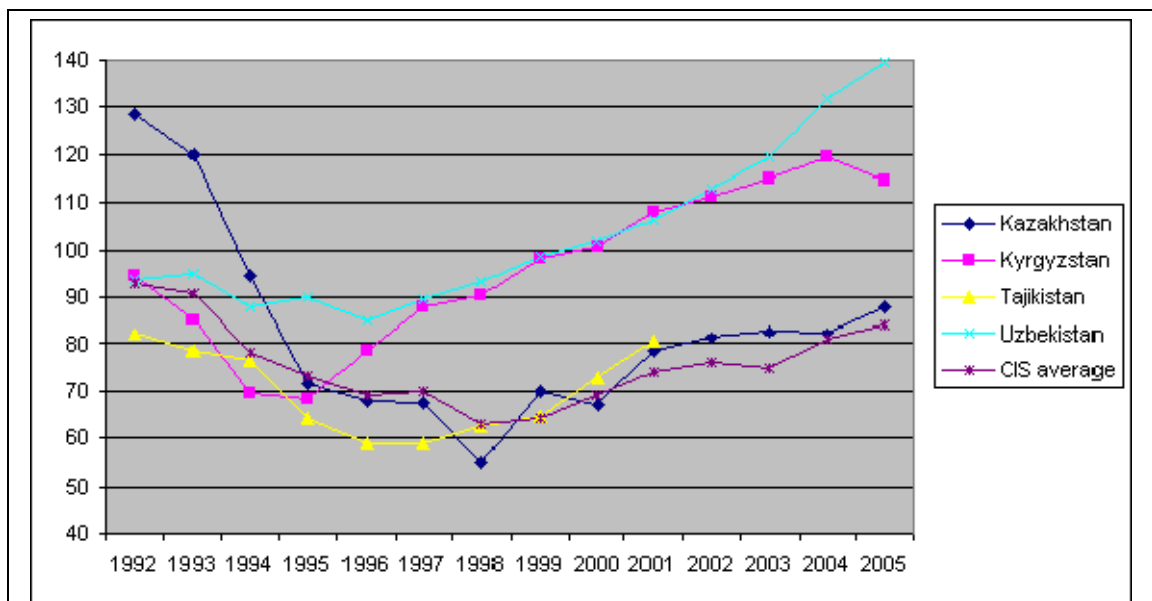

Figure 1.1.1 Volume indices of agricultural production as percentage of 1991 in CIS countries (constant prices)

Source: CIS STAT, 2006

Household plots and private farms are the driving engine for the increase in crop production

Whatever its importance, the overall growth of agricultural output masks, in fact, the structural changes that occurred in the sector and the contribution of the different types of farms to the recovery of the agricultural sector.

For the most part, recent growth is in fact limited to dekhan farms. In spite of their very low share of cultivated land (11 percent), they account for almost 60% of agricultural output (40% of crop and almost 90% of livestock output). Dekhans' increased share in crop output reflects, in particular, higher yields.

On the other hand, the output of the Collective farms (Shirkat) in crop output declined from over 80% to about 48%, with a more dramatic drop in their share of livestock output to approximately10%. In fact, livestock production in most shirkats was liquidated, which grossly aggravated their cash flow. The drop in the share of shirkats' crop output reflects both a decline in land and more importantly a decline in yields. In total, Collective farms with a 52 percent share of arable land account for only 23 percent of agricultural output.

The new private family farms are also characterized by low productivity: with a 37 percent of share of arable land, they account for only 14 percent of agricultural output.

The productivity of irrigated land is about 1.5 times higher on dekhan farms than on shirkats and family farms. Shirkats' output is steadily declining for a number of reasons including: difficulty to respond to fast changing conditions; lack of management and other resources; lack of incentives and conflicting interests of members; and frequent management changes.

Dekhan farms are the only private and dynamic segment of the Uzbek agriculture. Despite the fact that most of these farms operate on the basis of primitive manual labour, there has been rapid and strong productivity gains leading to increases in household incomes. Thus the overall growth in production witnessed since the mid 1990s has been impelled by the private farms, and more particularly by household plots and small farms, which were in fact the driving engine for the overall growth since 1996 and for the relative recovery of the agricultural production. Most smallholders are part-time private farmers, and they grow a wide variety of crops. Some cultivate for subsistence while others produce cash crops for income. They account for about 75 percent of food other than wheat that is produced in the country.

Table 1.1.1 Changes in structural indicators of the agricultural sector in Uzbekistan (in %)

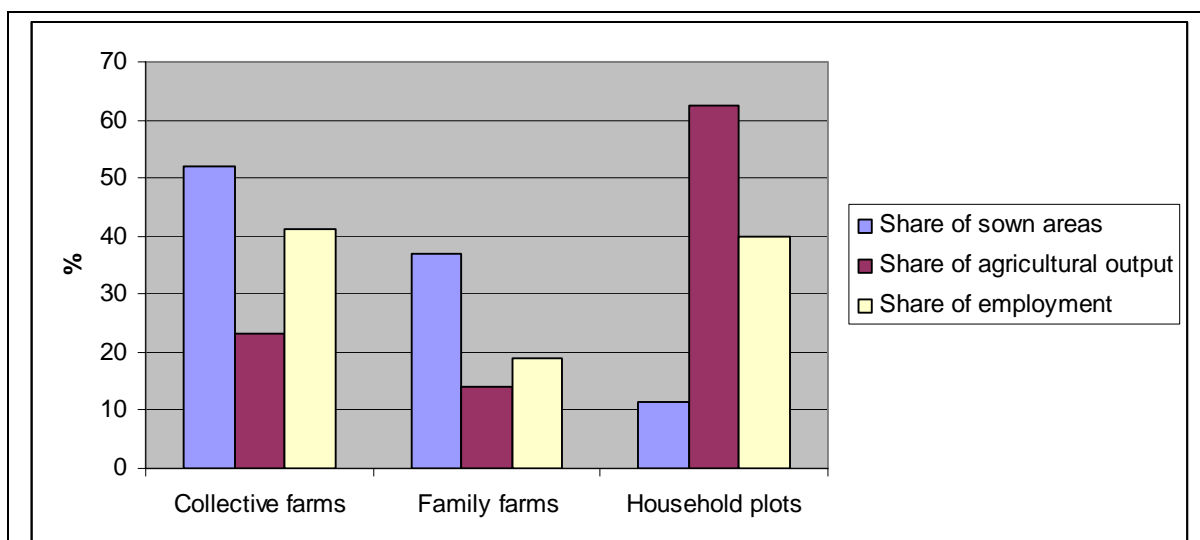| Indicators	*Collective farms (Shirkat)*	*Private family farms*	*Household plots* (Dehkhan)
Structure of the gross agricultural output:			
1998	35.8	3.5	60.7
2003	23.3	14.1	62.6
Structure of the sown areas:			
1998	81.6	8.9	9.5
2003	51.9	36.9	11.5
Structure of employment in the agricultural sector:			
1998	57.1	5.0	37.9
2003	41.1	19.0	39.9

Figure 1. 1.2 Contribution of the farm types to agricultural output and employment in 2003

Source: ADB, 2005

Table 1.1.2 Percentage of farms and dehkan farms in production of certain types of agricultural Production (% of total production)

	Types of products	Family Farms		Dehkan farms	
		2002	2003	2002	2003
1	Meat (live weight)	2.0	2.0	93.2	93.9
2	Milk	2.3	2.1	95.3	95.9
3	Eggs (million)	3.4	3.7	55.8	54.2
4	Wool	1.5	1.8	75.4	76.8
5	Astrakhan pelts (thousand)	2.0	2.1	35.8	39.8
6	Vegetables	7.4	10.6	75.9	70.6
7	Potato	3.8	3.8	88.5	90.3
8	Melons and gourds	16.5	30.3	63.9	56.7
9	Fruit	7.1	7.2	58.9	62.7
10	Grape	6.6	5.8	44.3	54.3

Crop sector is dominated by cotton and, to a lesser extent, by wheat. Approximately 60 percent of the value of agricultural production comes from the crop sector and the remainder from the livestock sector. Cotton is the most economically important crop. This "strategic crop", produced in irrigated areas throughout the country, accounts for about 40 percent of cultivated land and makes up about 40 percent of export earnings. It makes Uzbekistan the fifth largest cotton producer and second largest exporter of cotton in the world. Since the independence, and as a result of *self-sufficiency food policy* adopted by the Uzbek Government, wheat had become the second "strategic crop". It

accounts for about 30 percent of cultivated area. The rest of the cultivated area is used for growing fruit and vegetables (Uzbekistan continues to be one of the major suppliers of fresh and processed fruit and vegetables in the region), in addition to potatoes, tobacco and fodder crops.

Government self-sufficiency food policy and its effects on crop production

Before independence, agriculture was mainly oriented towards cotton, fruits and vegetables, food crops were far from satisfying the local needs. As *a result Uzbekistan was also net food deficient and relied for a major part of its food needs on imports.* This is in particular the case of wheat: the amount of imported wheat was more than four times as much as the local production. Thus, in 1992, while the local production of wheat was less than one million tons, the country imported about 4.5 million tons. Wheat was imported mainly from Kazakhstan, which was the most important wheat producer in Central Asia. In addition the country relied on imports for almost all of its needs in sugar (437 thousand tons), an important part of its needs in potatoes (290 thousand tonnes imported and 365 thousand tonnes produced in 1992). However, needs in animal products, vegetables and fruit were satisfied by the local production.
Following the collapse of regional trade and the disruption of food supply, particularly related to wheat, Uzbekistan, like the other Central Asian countries, adopted a strategy of food self-sufficiency. Thus, the Government decided to increase the wheat cropping area in order to produce the amount needed by its population. As a result wheat areas and production grew from 627 thousand hectares in 1992 (964 th tons) to 1,328 thousand hectares in 1997 (3,073 th tons) and to 1440 thousand hectares in 2003 (5,928 th tons). *The country achieved self-sufficiency in wheat by 1998.* It is noteworthy that this increase took place, under mandatory state orders, firstly in the State and Collective farms and, later on, following the land reform, in the Family Farms. Today, more than 80 percent of wheat production is taking place in these tow types of farms.

Table 1.1.3   Structure of Cotton and Wheat Production (1991-2000)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Cotton											
Shirkats	100	100	100	99	97	95	94	89	86	82	78
Private Farms	0	0	0	1	3	5	6	11	14	18	22
Dekhkans	0	0	0	0	0	0	0	0	0	0	0
Wheat											
Shirkats	95	93	92	90	89	84	79	75	73	68	64
Private Farms	0	0	1	2	4	5	6	8	10	15	19
Dekhkans	5	7	7	8	7	12	16	17	17	18	17

Sources: Department of Statistics of the Ministry of Macroeconomics and Statistics, and the Center for Economic Research, Tashkent, 2001. (UNDP, 2005)

However, the opportunity cost of this self-sufficiency has been high.

The increases in wheat acreage and production had a large effect on crop production. Winter wheat areas increased from about 4% in 1991 to 37% in 2003 and partly replaced cotton and maize, fodder crops and vegetables. Fodder areas declined by two thirds between 1991 and 2004. Detrimental to soil fertility, over 80% of irrigated cropped land is planted by cotton (40%) and grains (40%) subject to mandatory production targets. This has caused significant reduction of areas planted to potatoes, vegetables, melons and other crops (7%). In addition, it has resulted in serious land fertility degradation and added to environmental problems. Area planted to fodder declined by two thirds to 9% during 1991 – 2004. Moreover, the yearly wheat sowing in autumn over the growing cotton without proper treatment and salt leaching have increased soil salinity and contributed to increased groundwater level. Additionally, the conversion of land from feed crops to wheat (fodder area is now one-third its level of 1991) also reduced fodder production which, together with a sharp decline in the imports of mixed fodder, has reduced livestock productivity.

Table 1.1.4 Structure of sowings of agricultural crops on irrigated land, on all categories of farms for 1991-2003 years, in % of all cropped areas.

| Categories of farms for 1991-2003 in % of all cropped areas.	Years							
Indexes	1991	1993	1995	1997	1999	2001	2003	2003 to 1991 +,-
Grain and cereals, total	14.9	19.2	31.8	37.9	38.1	38.4	42.3	27.4
Including:wheat	4.3	8.4	22	29.2	30.9	34	36.8	32.5
Technical crops, total.	49.4	48.4	42.6	42.8	43.9	45.5	42	-7.4
including: cotton	48.3	47.5	41.8	42.1	42.6	44.4	41	-7.3
Potato, vegetables and melons	8	6.9	6.7	6.1	6.4	6.7	6.9	-1.1
Including: potato	1.1	1.2	1.3	1.6	1.4	1.6	1.4	0.3
Vegetables	4.6	4.3	4.2	3.6	3.9	4	4.3	-0.3
Melons, pumpkin	2.1	1.2	1	0.8	1.1	1	1.1	-1
Forage crops	27.7	25.5	19.2	13.1	11.6	9.4	8.8	-18.9
Including: Lucerne	17.2	15.4	11.5	7.5	6.1	5	3.8	-13.4
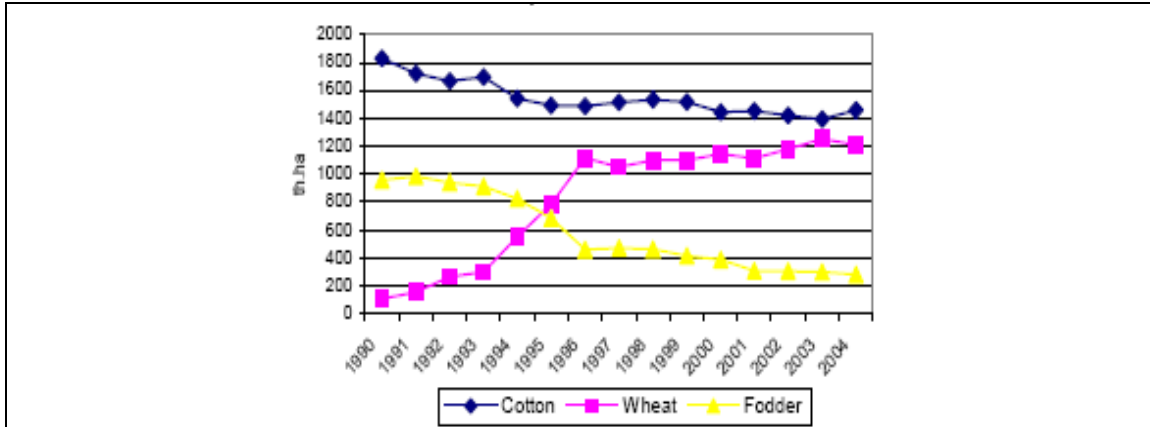
Figure 1.1.3 Cropped areas of cotton, wheat and fodder crops from 1990 to2004

Source: ADB, 2005

The average yields of cotton and wheat are low and the cost of production is high by international standards. Due to good weather, cotton yield increased to 2.65 t/ha in 2004. However, cotton yields have been declining steadily from about 2.7 t/ha in 1991 to about 2.1 t/ha in 2003. While cotton yields declined by 23% during this period, the cost of production increased by 23%. The comparison with China is of interest. With climatic conditions similar to those of Uzbekistan during 2000-2004 China achieved average yields of 3.3tonnes/ha, against 2.2 tonnes/ha in Uzbekistan.

Wheat yields increased from about 2.3 t/ha to about 4.2 t/ha. However, this level of productivity remains extremely low for irrigated agriculture.
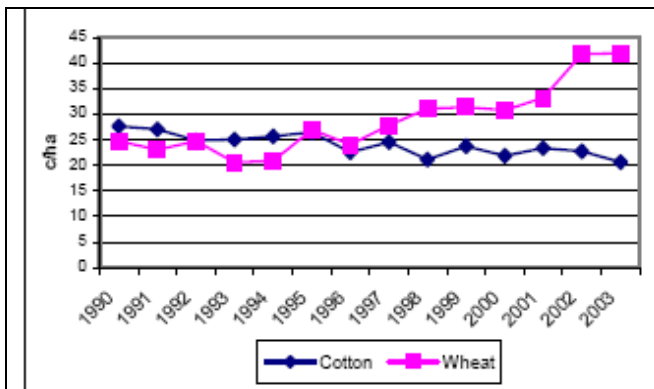

Figure 1.1.4 Yield of cotton and wheat in irrigated land in Uzbekistan
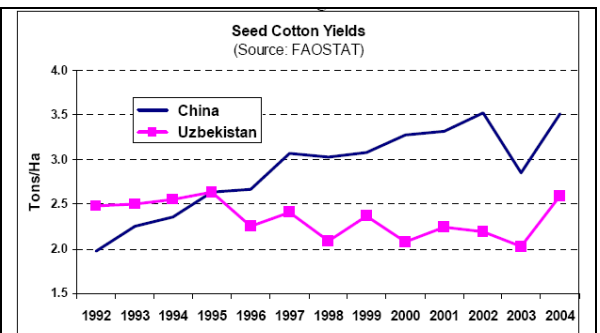*Source: ADB 2005*

Figure 1.1.5 Comparison between Cotton yields in China and Uzbekistan during the same time period

The low yields *of cotton and wheat are related to the very low state procurement prices*. The typical price received by farmers lies considerably below export parity under market conditions. This, in addition to direct taxes such as VAT on cotton ginning, and excise taxes on cotton seed oil, represents the main source of tax revenue from agriculture. According to the Asian Development Bank estimates, the net implicit tax for 2004 was about US$1.04 billion or about US$350 per ha for cotton/wheat farmed on over 80% of cropped land. For years, the net implicit taxation of agriculture oscillated at around 10% of the GDP. The annual average net implicit tax over 2002-04 is US$1.13 billion.

The decline of cotton and wheat yields is thus reflecting, in particular, the lack of producer incentives, deteriorating land quality, lack of equipment, poor quality seed, lack and chemical imbalance of fertilizers, and lack of other resources.

Figure 1.1.6 Cotton Fibre Domestic and World Market Prices
Source: ADB, 2005
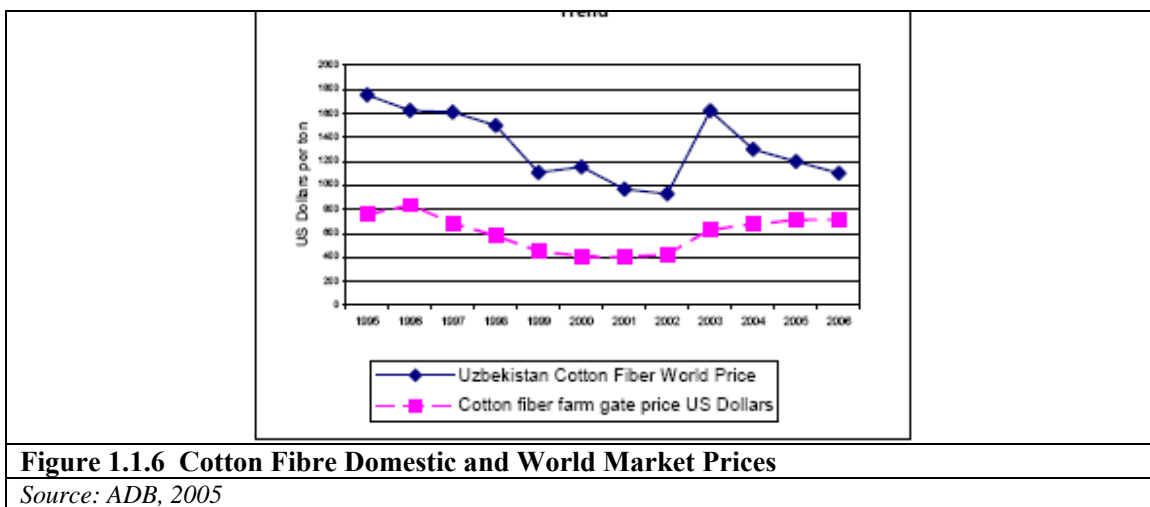
Livestock Production. Since independence, nearly all livestock had shifted to dekhan farms that account for over 90% of the value of livestock production. This includes 90% of cattle, 72% of sheep and goats, and 64% of poultry (2003). Poor diet, with low fodder supply, and only 40-45% of requirements of feed concentrate limit development of livestock production in Uzbekistan. The quality of feed concentrate is poor and it comes at a high price. Cattle productivity – milk yield (1,684 kg) and fertility per 100 cows (45), as well as the daily gain in weight (421 g) are low.

Livestock production, like horticulture, function within the framework of a free market economy. The Government interferes little and provides limited research and extension services. On the other hand, livestock and horticulture inputs are usually available at reasonable prices. The production is sold either directly through local markets for fresh products or to small private enterprises specializing in fruit, vegetable, meat, wool, and leather processing.

Animal husbandry in Uzbekistan is specialized, not only in production of foodstuffs (meat, diary products, eggs) but also in production of raw materials that include cocoons of mulberry silkworms and karakul that are highly demanded in the world markets.

1.2. FOOD AVAILABILITY

Food Balance Sheets[1] for Uzbekistan, 2004

Food Supply in a country or food available for consumption is normally presented by means of Food Balance Sheets (FBS). These are published by FAO annually and provide data on the amounts of 95 food commodities available for human consumption based on the statistics countries provide to FAO. In general, the food supply is calculated from domestic food production plus imports and food taken from stocks. Exports and food added to stocks are then subtracted, to yield an estimate of total food available (the gross national food supply). The net food supply or the net amount of food available for human consumption, reported in thousand metric tons or metric tons, is obtained by subtracting from the gross national food supply the amounts of foods diverted to non-human food uses (animal feed, seed, sugar in the brewing industry) and an estimate for waste.

The daily per capita supply reported in FBS is obtained by dividing the net food supply by the number of inhabitants (or an estimate) in a given year, and is reported in terms of kg/y per capita of individual food commodities and major food groups.

Food balance sheets are normally used by policy makers for formulating policies related to agricultural production, export, import and consumption of food. They allow the year to year comparison of the progress that a country has accomplished towards achieving its goals, as well as the intercountry comparisons of food supplies.

The Food Balance Sheet of 1992 and 2003 (Tables below) for Uzbekistan allow the following observations to be made:

- The country has become **self-sufficient[2] in almost all foods**. The food self-sufficiency ratio has increased, between 1992 and 2003 for the following foods: wheat from 17.8% to 95%; potatoes from 55.7% to 99.6%; meat from 88.8% to 97.4%; and stayed as high as it was in 92 for the following foods: vegetable oils, milk, eggs, fruits, and vegetables. This ratio remained very low and witnessed no change from its level of 1992 for sugar and sweeteners. Hence *the major part of the food consumption in Uzbekistan is provided by domestic food production*.

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[1] FAO describes food balance sheets as providing a comprehensive picture of the pattern of a country's food supply during a specified reference period, calculated from the annual production of food, changes in stocks, imports and exports, and distribution of food over various uses within the country.

[2] **Food Self-Sufficiency Ratio** indicates the percentage of and the extent to which a country's domestic **food** consumption (including edible and inedible portion) relies on its own production resources and supplies. The **Self-Sufficiency Ratio** for a specific **food** group can be estimated directly by finding the percentage from the amounts of domestic production and the amounts of domestic supplies, i.e. production divided by (production + import –exports).

- **Dependence on imports has decreased** tremendously for wheat since 1992. The import to production ratio of wheat dropped from 461% in 1992 to 4.69%.

Table 1.2.1 Food Balance Sheet for major food groups, Uzbekistan and the calculated Food Self Sufficiency Ratio, (2003)						
Food Group	**Production quantity (1000 tonnes)**	**Import quantity (1000 tonnes)**	**Export quantity (1000 tonnes)**	**Domestic supply (1000 tonnes)**	**Feed, Seed, Others (1000 tonnes)**	**Food quantity (1000 tonnes)**	**Self Sufficiency Ratio**
Cereals (Total)	5931.96	291.52	1.45	5697.95	7278.6	4641.38	**95.3**
Wheat	5400	253.48	1.43	5092.05	6531.81	4212.29	**95.5**
Vegetable Oils	281.25	36.83	10	308.08	315.74	300.42	**91.3**
Sugar & Sweeteners	2.4	113.04	0.17	115.28	115.59	114.96	**2.1**
Starchy Roots (Potatoes)	827.8	4.84	1.7	830.94	891.88	770	**99.6**
Meat	533.2	14.01	0	547.21	547.21	547.21	**97.4**
Milk	4030.3	53.57	0.01	4083.87	4576.69	3591.04	**98.7**
Eggs	90.57	0.02	0	90.59	98.64	82.54	**100.0**
Fruits	1160.1	6.69	184.84	981.95	1173.1	790.8	**118.1**
Vegetables	3882.8	0.41	267.46	3615.76	4203.13	3028.38	**107.4**

Source: FAOSTAT

Table 1.2.2 Food Balance Sheet for major food groups, Uzbekistan and the calculated Food Self Sufficiency Ratio, (1992)						
Food Group	**Production quantity (1000 tonnes)**	**Import quantity (1000 tonnes)**	**Export quantity (1000 tonnes)**	**Domestic supply (1000 tonnes)**	**Feed, Seed, others (1000 tonnes)**	**Food quantity (1000 tonnes)**	**Self Sufficiency Ratio**
Cereals	1998.15	4720.26	0	5248.37	7502.14	4464.64	29.7
Wheat	964	4448.72	0	4152.72	5676.85	3888.59	17.8
Vegetable Oils	385.13	6.34	0	339.47	472.76	258.18	98.4
Sugar & Sweeteners	8	437.3	0	276.82	446.6	275.52	1.8
Starchy Roots (potatoes)	365.3	290	0	655.3	731.8	578.8	55.7
Meat	468.7	58.93	0	527.63	527.63	527.63	88.8
Milk	3799.2	36.42	0	3735.62	4343	3228.24	99.1
Eggs	106.8	0	0	106.8	117.54	96.06	100.0
Fruits	1143.4	2.58	85.67	1060.32	1472.66	647.97	107.8
Vegetables	4380.7	1.31	138.85	4243.16	5795.76	2690.56	103.2

Source: FAOSTAT

- **Food exports remain very limited in Uzbekistan.** Food exports have always been concentrated in fruits and vegetables. These commodities witnessed a sharp increase in the exported volume between 1992 and 2003.
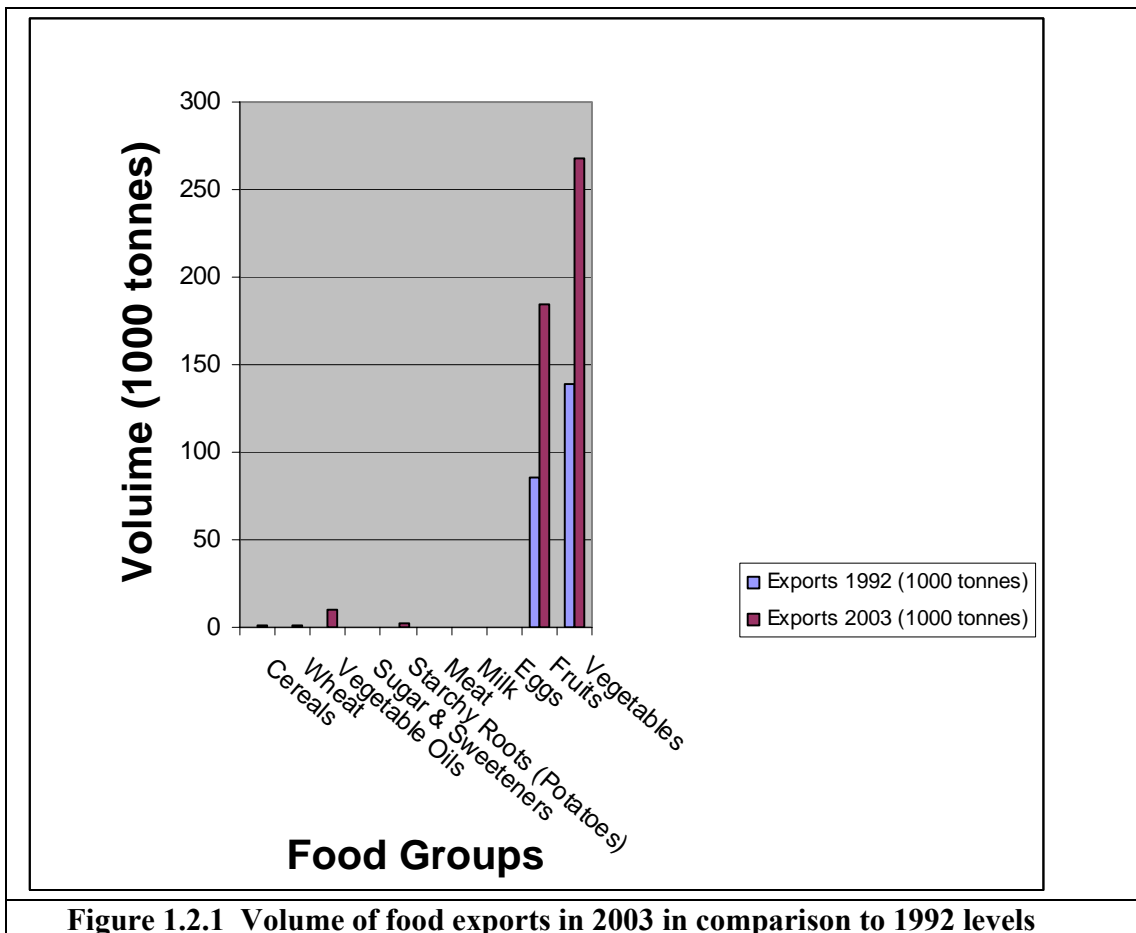

Figure 1.2.1 Volume of food exports in 2003 in comparison to 1992 levels

- **The contribution of the different food commodities to the available calories per capita per day remained almost the same between 1992 and 2003 (Table below).** The following remarks are however worth noting:

  - There has been a net decrease in the available daily energy supply in Uzbekistan from 2700 to 2312 calorie/capita/day;
  - This decrease is largely attributable to the decrease in the cereals calories from 1632 to 1396 calories/capita/day.

Table 1.2.3 Contribution of the different food commodities to the available calories/capita/day in Uzbekistan between 1992 and 2003		
Food Group	**Calories/capita/day**	
	1992	**2003**
Cereals - Excluding Beer	1632.25	1396.03
Vegetables	67.37	62.1
Starchy Roots	49.56	54.17
Sugar & Sweeteners	124.89	42.89
Pulses	0	0.1
Vegetable Oils	292.56	278.28
Fruits - Excluding Wine	43.75	42.75
Alcoholic Beverages	15.35	19.7
Meat	150.33	131.2
Offals, Edible	6.98	8.98
Animal Fats	33.59	17.84
Eggs	17.12	12.1
Fish, Seafood	2.82	0.79
Miscellaneous	2.38	0.51
Treenuts	7.34	4.61
Oilcrops	5.4	10.59
Milk – Excluding Butter	246.98	228.51
Total	**2700.24**	**2312.39**

Source: FAOSTAT

2. FOOD ACCESS, POVERTY AND HOUSEHOLD FOOD SECURITY

2.1 Poverty and food access

Income and consumption measures as indicators of poverty and food access

Income poverty is clearly one of the most important determinants of food insecurity. As the access to food is strongly related to the level of income, poverty measures could give an accurate indication of the likelihood of food insufficiency at the household level. However, the pertinence and the usefulness of income-based poverty measures as indicators of food access depend on the ability of these measures to take into account the different kinds of income and resources of households. It has become well known that the traditional and restrictive measures based on wages and monetary income give a poor picture of poverty as well as of food access, particularly when the informal economy and self employment constitute the source of income of an important part of the population.

As the livelihood and entitlement approach has put in evidence, people do not acquire food from one source and in a fixed pattern. Own production, stored wealth, self-employment, in-kind payment and food transfer to employees, use of assets, migrant remittances, family and community aid, and government transfers are all possible sources of food. Thus, the more the poverty measures and indicators take into account the diversity of income (and food) sources, the higher the probability that they can be accurately used as indicators of household food access and food insecurity. Moreover, incomes, especially in a transition context, are often instable and fluctuant, even in the short run. This is why the consumption or expenditure-based data and indicators rather than the sole income data and indicators are likely to be appropriate in the context of transition and in less developed countries. As consumption is generally more smooth and less susceptible to fluctuation than revenues, consumption data can be relatively easily obtained and can give a more accurate picture of the households "well being" and of their level of poverty and food insufficiency.

The notion of absolute poverty is closely related to food insufficiency and undernourishment.
The concept of absolute poverty used in the different poverty surveys refers to the inability to meet the "basic subsistence needs", that are the amount of food providing a minimal daily caloric intake of 2100 calories/person/day, in addition to some non-food basic needs as clothing, heating and lighting. *The absolute poverty line* is calculated as the current cost of the subsistence consumption basket in a country: (i) the average basic foodstuffs expenditure needed to meet basic caloric requirements (taking into account the products available on the market and the consumption patterns of the average population) and (ii) the cost of essential non-food goods and services. Moreover, an *extreme poverty line (or food poverty)* is estimated as the cost of this food basket providing the minimum nutritional requirement of 2100 Kcal.

At the international level, the World Bank often uses $1 a day for cross-country comparisons, which has since 1990 come to be regarded as providing the absolute

minimum standard of living. The $1-a-day poverty line (in 1985 PPP) was chosen based on the average of the poverty lines of 10 low-income countries, all of which were located wholly, or in part, within the tropics. It was updated later using 1993 PPP to $1.075 a day. In its 2000 and 2005 reports on poverty in Central and Eastern Europe and the CIS countries, the World Bank considers that the $1-a-day absolute poverty line is inappropriate because of the cold climate and other features of the countries in the Region. As a result, a line of PPP $2.15 per person per day was taken to measure the extent of the absolute material poverty in these countries, corresponding approximately to the cost of a very meager food basket, plus an allowance for heating, lighting and other essential non-food items. A higher poverty line, the $4-a-day line (or, $4.30 per person per day) is used to measure "economic vulnerability," by which is meant those who are not absolutely poor, but are nonetheless vulnerable to poverty.
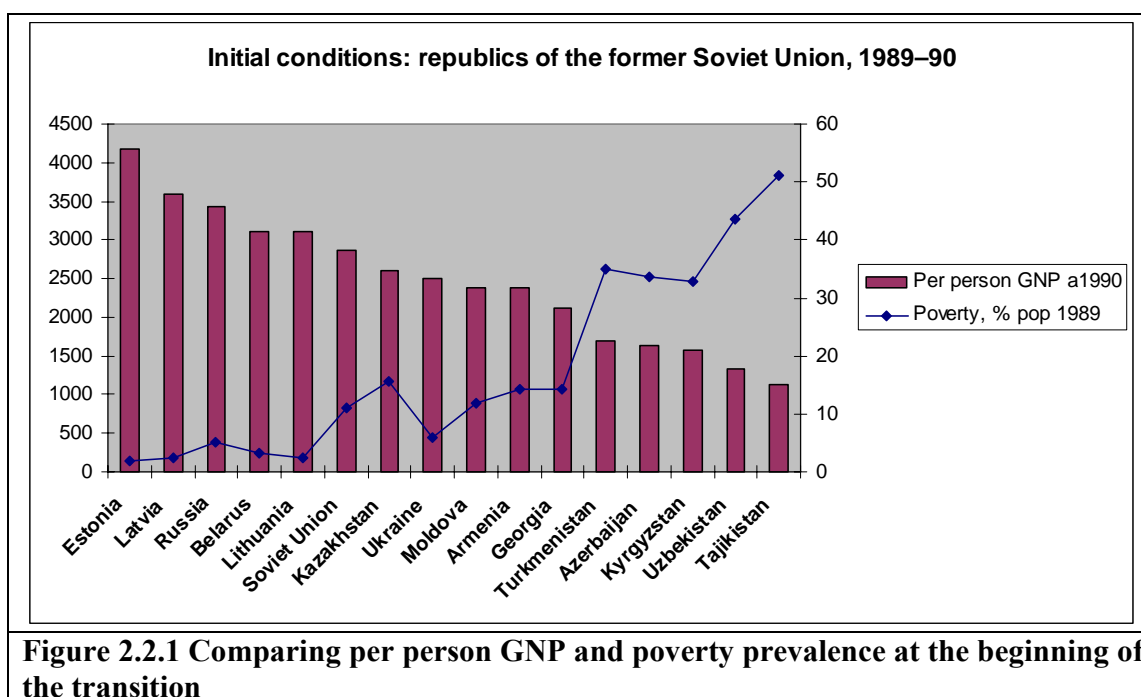
2.2 Trend of poverty

Before the transition, the great majority of the Uzbek population did not suffer from food insecurity and absolute poverty, even though Uzbekistan was the second poorest republic of the former Soviet Union.

During the Soviet period, there was no official poverty line. Instead, the literature about poverty used a concept of "socially acceptable standard of living" based on a desirable diet and conditions of living. Thus, people who have a per capita monthly income under 75 rubles were considered to be "maloobespechennye", a term referring to living poorly and lacking in supplies. According to data on income distribution based on Soviet HBS, Uzbekistan had, before transition, the second highest proportion of "needy" population among the FSU after Tajikistan: in 1989, about 44 % of the Uzbek population lived below the "accounting" social minimum line. (Atkinson and Micklewright, 1992; World Bank, 1995 and 1998)

Table 2.2.1 Initial conditions: republics of the former Soviet Union, 1989–90				
	Population (millions) mid-1990s	**Per person GNP a1990**	**Gini coefficient 1989**	**Poverty, % pop 1989**
Estonia	1.6	4170	0.299	1.9
Latvia	2.7	3590	0.274	2.4
Russia	148.3	3430	0.278	5
Belarus	10.3	3110	0.238	3.3
Lithuania	3.7	3110	0.278	2.3
Soviet Union	289.3	2870	0.289	11.1
Kazakhstan	16.8	2600	0.289	15.5
Ukraine	51.9	2500	0.235	6
Moldova	4.4	2390	0.258	11.8
Armenia	3.3	2380	0.259	14.3
Georgia	5.5	2120	0.292	14.3

Turkmenistan	3.7	1690	0.307	35
Azerbaijan	7.2	1640	0.328	33.6
Kyrgyzstan	4.4	1570	0.287	32.9
Uzbekistan	20.5	1340	0.304	43.6
Tajikistan	5.3	1130	0.308	51.2

Figure 2.2.1 Comparing per person GNP and poverty prevalence at the beginning of the transition

However, this threshold of 75 rubles is significantly higher than the highest international poverty line of PPP$ 120 per capita per month (which was, in 1989, equivalent to 54 (55) rubles) and "allowed for a generous level of consumption of both food and non-food items and contained relatively high proportions of high cost foods such as animal fat and meat." (Falkingham, 1999; World Bank 1998). Thus, during the Soviet period, the majority of the population considered to be living poorly did not suffer from absolute poverty and food insecurity. Indeed, most of them had jobs or other sources of income, had adequate housing and enjoyed free health care and education.

A high increase in poverty at the beginning of the transition

Despite the lack of reliable data, many indicators suggest that Uzbekistan witnessed a sharp increase in poverty in the first few years of independence at the beginning of the transition.

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Based on the international poverty line of four PPP$ per capita per day and using per capita income as a welfare indicator, the poverty rate, increased from 24% in 1988 to 63% in 1993.

In the first years of independence, GDP did not collapse and the recession was apparently less severe in comparison to the other FSU counties. Nevertheless, the large falls in Real per Capita GDP (20% between 1988 and 1993), the rising inflation and unemployment, and the increase of inequality (Gini coefficient …) led to a sharp drop in real household incomes and to high increase in poverty. Thus, mean income fell from *US$ 28 to 11 US$* between 1988 and 1993; real wages severely collapsed and, in 1994, reached less than 10% of the 1991 level.

Table 2.2.2. Estimated Poverty Headcount and Poverty Deficit in 1987-88 and 1993-95 Using HBS Income

| | Poverty headcount (%) | | Total number of the poor (millions) | | 1993–95 data | | | | |
| | | | | | Shortfall as % of poverty line | Total poverty deficit as % of GDP | Elasticity[a] | Average income per capita ($PPP pm) | Type and year of data |
Country	1987–88	1993–95	1987–88	1993–95					
Central Asia	15	66	6.5	30.7	47	9.8	0.5	113	
Kazakhstan	5	65	0.8	11.0	39	9.2	0.7	115	A:93
Kyrgyz Republic	12	88	0.5	4.0	68	64.4	0.2	75	Q3:93
Turkmenistan	12	61	0.4	2.4	40	7.7	0.6	124	A:93
Uzbekistan	24	63	4.8	13.3	39	12.4	0.6	118	A:93
Total transition	4	45	13.6	168.0	35	3.5		215	

Estimated poverty rates in 1987-88 and 1993-94, using household income as welfare indicator (poverty line = $PPP 4 per capita per day at 1990 prices)
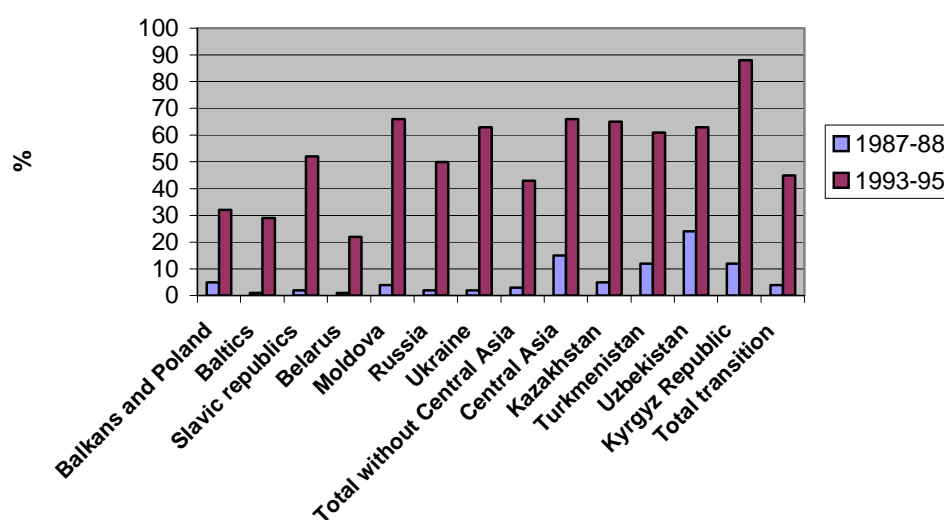
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Milanovic (World Bank 1998) made an impressive effort to collate, to reconciliate and to compare survey data for transition economies, including central Asian countries, before and after independence. Using data on income from the HBS, which is the sole available source of data for Uzbekistan, and applying the same poverty line of four international dollars per capita per day at 1990 prices (PPP$ 4.30 at 2000 prices), he compared poverty before and after transition. His estimates of poverty rates presented in the Figure below show that poverty in Uzbekistan increased from 24% before independence to 63% in 1993 (World Bank, Milanovic, 1998).

In contrast to other FSU countries, the lack of data in Uzbekistan do not allow an evaluation of the level and trend of poverty during the transition period on the basis of expenditure or consumption, which is more appropriate than income *as welfare indicator* in such a context. However, many indicators confirm the considerable increase of poverty in the first period of transition. According to official data, about 44.5% of the population had, in 1994, an income below the minimum wage (about 10-12 US$ or 30 PPP$ per month), a level far below the international poverty line of PPP$ 60 per capita per month. The percentage of 'needy families', receiving social assistance from the makhallias or from the government, had also considerably increased and reached 57 percent by 1997 (UNDP 2002).

Absence of reliable and regular national data on poverty

The lack of reliable and regular data sources and the paucity of good quality information are a major problem for poverty analysis in Uzbekistan, especially for analyzing the trend of poverty and measuring the change of its incidence since the beginning of the transition.

Until 2001, the old and biased Household Budget Survey (HBS) had been the sole data source. The HBS date from the Soviet period. Falkingham et al. (1997) characterize it as "a survey with a long history and a terrible reputation". The HBS sample (4000 households) was biased and not nationally representative. After independence the State Statistical Committee (SSC) continued to field the HBS by following the same methodology and on the basis of the same sample (no rotation). As the sample became more and more biased, the results were more and more misleading. Moreover, the raw data from this household survey were guarded jealously by the State Statistical Committee whilst the published results were limited and unreliable. Uzbekistan had also no official or accepted poverty line that is comparable with international standards (the minimum per capita income or expenditure that is necessary to meet the "basic subsistence needs").

Contrary to official claims, poverty had probably continuously increased during the second half of the 1990s.

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Based on the biased HBS, the State Statistical Committee (SSC) was estimating the level of poverty by utilizing the criterion of income below the official minimum monthly wage. The assumption was made that the minimum wage was regularly raised by the Uzbek President to the level required to satisfy **food and non-food basic needs**. Based on such a criterion, the State Statistical Committee claims that the poverty rate in Uzbekistan (population having a income below the minimum wage) fell from 44.5 % in 1994 to 19% in 1998 and to just 16% in 2001.

In fact, there is no reason to see in the decrease of the number of people having a per capita income below the minimum wage an indication of improvement in the poverty situation, as the **real value and the purchasing power of the minimum wage were greatly and rapidly decreasing**. Thus, during the period1996-2002, while the nominal minimum (monthly) wage in local currency was increased from 100 to 3945 sum, its value in current $US at current exchange rates declined from about 10-12 $ to about 4$ at the official exchange rate and to less than 3$ at the black market rate. Average wage during the same period declined from $54 to $29 at the official exchange rate and from $37 to $17 at the parallel market rate. Moreover, income disparities increased: the agricultural wage on which more than 2.2 million agricultural workers are dependent declined to 23 percent of the average industrial wage. Briefly, as incomes and wages were far from increasing in real value, it is difficult to believe that living standards and poverty situation had registered any substantial improvements. In any case, the minimum wage is extremely low and can not be used as a poverty line: According to the data from the new Household Budget Survey (World Bank 2003), the purchasing power in 2000/2001 was even less than the cost of a consumption basket that could provide 1500 calories per person per day (based on actual consumption patterns of the poor population and on the prices incurred by the poorer population.

According to data from the new HBS (2001), more than a quarter of the population are unable to meet basic food consumption needs (2100 Kcal per day) and more than 10 % have a food consumption basket that provides less than 1500 Kcal.

The 2001 Household Budget Survey (the new HBS) is the first reliable source of information on poverty. It was introduced with technical assistance from the German Agency for Technical Cooperation (GTZ) and the World Bank. *Based, for the first time, on a nationally representative sample* (10,000 households, rotating monthly), this HBS is the only data source that provides the basis for reliable estimates of food and income poverty in Uzbekistan, including at the regional level. However, in spite of its good quality, this survey has some drawbacks: the data related to non-food consumption do not allow the construction of a robust total consumption aggregate (No information was collected on the value of durable goods; the reference period used to collect information on other non-food consumption was short…). In addition, the data do not permit the estimation of other measures of poverty such as inequality, depth, and severity. This is why, in its Uzbekistan Living Standards Assessment, the World Bank considered that only a robust food consumption aggregate could be constructed and, consequently, estimated poverty rates on the basis of the food poverty line. In other

words, the Assessment measured and analyzed in the first place food poverty, and took the results as an indication of income poverty.

The national food poverty line was set in 2001 at the cost of a consumption basket that will provide 2100 calories per person per day. The consumption basket was based on actual consumption patterns of the poor population. This basket was converted into local currency (soums) using the prices incurred by the poorer population.

In addition to this "absolute" food poverty line, an "extreme" food poverty line was computed, based on a caloric intake of 1500 calories per person per day. The value of the absolute food poverty line thus obtained, in October 2000 prices, was 3601 soums per month, which is about PPP$ 30 per month (PPP$ 1 per day) and about US$ 10 (US$ 0.32 per day). It is worth remarking that this food poverty line is about 50% higher than the value of the minimum wage in 2000, but about 50% lower than the cost of the minimum subsistence food basket determined by the World Bank to set the absolute poverty line for the region.

Moreover, the minimum subsistence food basket that was chosen as reference is a wheat-based basket that dos not take in account the protein and micronutrient needs. Reflecting the actual food consumption of poor households, it comprises mainly carbohydrate foodstuffs, rather than animal and plant proteins: the quantity of meat and milk products included in this basket account, respectively, for 2.2% and 1.3% of the total caloric intake. (MDG National Team, 2004) Thus, even though it provides an adequate caloric intake, this food basket does not provide for other essential nutritional needs (proteins and micronutrients). It is therefore highly probable that an important proportion of the population classified as non-food poor has actually an inadequate intake in proteins and micronutrients (and even inadequate caloric intake for those who choose to consume significant quantities of meat or dairy products).

Since the first round of the data collection in 2000-2001, the New HBS has been carried out annually. However, only the data and the results of the first three rounds (2000-2001, 2002 and 2003) are available. In addition, while the analysis and results of the first round (2000-2001) had been carried out and published by the World Bank in 2003, the analysis of the 2002 and 2003 has been carried out recently and the results have been made available only in September 2007. However, in order to carry out the analysis of the 2002 and 2003 data, the World Bank reviewed and repossessed the original data from 2000-2001 in order to improve their quality and to correct some errors (exclusion of households with some incomplete data, adjustment of the sample weights, etc.) This revision to the analysis of the 2000-01 HBS led to changes in the estimated rates of food poverty compared to those published in the 2003 LSA. It did not, however, change the relative levels or distribution among the various groups and/or areas of the country. Thus, in the subsequent analysis, the two sets of results (the original and the revised 2000-2001 data) are presented. More particularly, the original results will be used to analyse the distribution of food poverty at the oblast level, as such estimates are neither available in the revised results nor in the results of 2002 and 2003.

The results of the three years survey are presented in the Table below. They show that:

- More than one quarter of the population (27.2% or 7 million people) have, in 2003, total food consumption below the value of 2100 Cal per capita per day. The rate of the population living below this food poverty line fell between 2000-01 and 2002 but did not change, significantly between 2002 and 2003.

- 11 percent of the population (more than one third of the people living below the food poverty line) have total food consumption below the extreme food poverty line of 1500 calories per capita per day. In contrast to the slight decrease of the food poverty rate, the level of extreme poverty remained stable during more than three years. This rate of extreme food poverty and its persistence are all the more alarming that the food consumption level of 1500 Calories per day is unsustainable and can lead to **serious health** consequences.

Table 2.2.3. Poverty and extreme food poverty rates 2000-2003				
	2000-2001 Original*	2000-2001 Revised	2002	2003
Food Poverty (Below 2100 calories)	**27.5**	31.5	26.5	27.2
Extreme Food Poverty (Below 1500 calories)	*9.7*	10.9	10.4	11.3

Sources: WB LSA 2005, WB LSA 2007.
* This column contains the original estimates for Food and Extreme Poverty in Uzbekistan from the **LSA** 2003. Note that these numbers are not strictly comparable to the 2002 and 2003 figures. For comparisons over time, the 2000-01 revised figures should be used.

- **A large number of people are close to the food poverty line and therefore might be considered as highly vulnerable to small risks and shocks, such as recession.** As the Table below shows, a 10 percent increase or decrease in the poverty line leads to a change in the food poverty rate by substantially more than 10 percent (23 percent increase or decrease in 2003). In other words, 7% of the population have a food consumption basket whose value is between 2100 and 2310 Calories. Similarly, another 7 percent of the population has a food consumption basket whose value is between 1890 and 2100 calories. This important proportion of households having consumption levels right below and right above the poverty line explains how notable change in the food poverty rates can occur in the short run.

Table 2.2.4. Sensitivity of food poverty rates to a 10 % change in the value of the poverty line, 2000-0 1 to 2003

	2000-2001 Original	2000-2001 Revised	2002	2003
Food Poverty rate (Below 2100 calories)	**27.5**	31.5	26.5	27.2
Extreme Food Poverty rate (Below 1500 calories)	*9.7*	10.9	10.4	11.3
Rate of food poverty based on Food Poverty line + 10% (Below 2310 calories)	34.8	39.7	33.6	33.5
Rate of food poverty based on Food Poverty line - 10% (Below 1890 calories)	20.3	22.9	19.8	20.9

Source: WB LSA 2007

About half of the Uzbek population lives below the poverty line of PPP $2

Despite the **lack of robustness** and the limitations of the data related to non-food consumption, the Uzbek HBS data were used by the World Bank in their comparative assessment of poverty in **Eastern Europe and the Former Soviet Union** countries *(2005).* The high interest of this study resides in the fact that it makes possible to situate the level of poverty in Uzbekistan in comparison with the other countries of the region, which is not possible on the basis of the national food poverty rates. It also gives some relatively reliable indications about the trend of poverty since the beginning of the transition. The World Bank study relies on household consumption of goods and services as the measure of living standards. To measure poverty, two poverty lines were used: an absolute poverty line of $ PPP 2.15 a day and a relative poverty line of $ PPP 4.30. To arrive at an internationally comparable assessment of poverty, the authors used primary unit record data from household-level surveys implemented in the countries of the region during 1997–2003. In order to take into account the significance of spatial differences, the authors adjusted for spatial price differences, using the same set of information in all countries. Concerning Uzbekistan, although the non food consumption aggregate was not robust, a total consumption aggregate was constructed using the absolute poverty line of PPP$ 2.15 per capita per day, which included PP$ 1.55 for the subsistence food basket and PPP$ 0.6 for the essential non-food consumption.

According to the results of the World Bank's assessment, the following could be noted:
- The absolute poverty rate, based on the absolute poverty line of 54% of the Uzbek population living on less than $ PPP 2.15 per day in 2001, decreased to 47% in 2003.
- Based on the high international poverty line of 4 PPP$, poverty rate was 89% in 2001 and 86% in 2003.
- The comparison of these data with the estimation of poverty rates in 1989 and 1993 (World Bank, Milanovic, 1998) shows the huge increase in poverty during the transition.

   The Figure below presents the trend of poverty from 1989 to 2003, based on the two international poverty lines of 2 and 4 PPP$ at1990 prices (2.15 and 2.30 PPP$ at 2000 prices) and using per capita expenditure (1993) or per capita consumption (1998-2003).
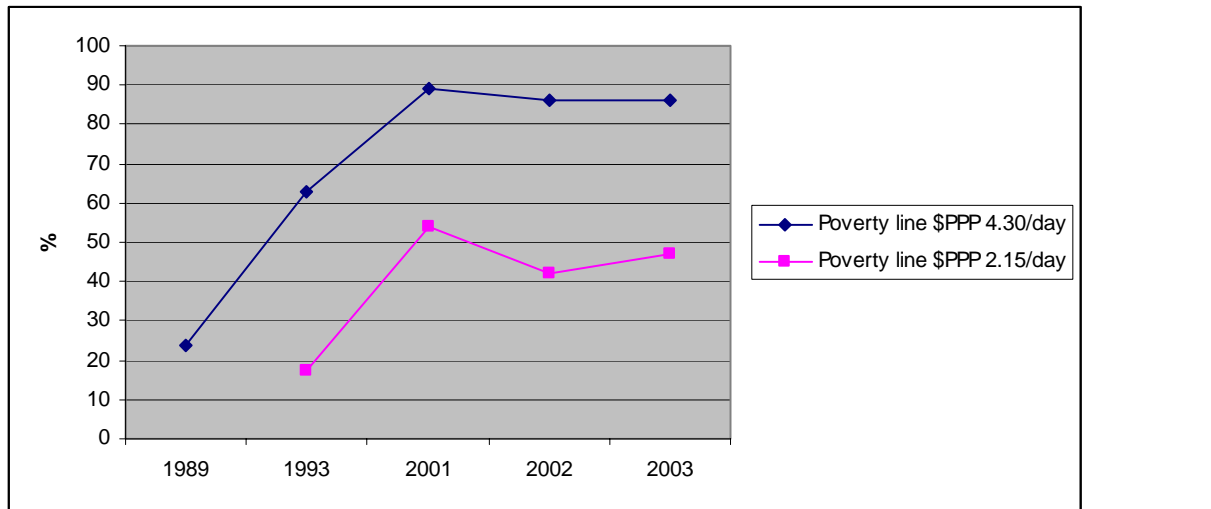
Figure 2.2.3. Poverty trend in Uzbekistan based on the international poverty lines (PPP$ 2.15 and 4.30). It is important to note that these figures are not based on the same welfare indicator: while household income was used in 1989 and 1993, household expenditure has been used since 2000.
Sources: World Bank 1998 and 2005.

Uzbekistan has the third poverty rate in Central Asia
The poverty incidence in Uzbekistan is lower than in *Tajikistan and Kyrgyzstan and* **significantly higher than in Kazakhstan.** Among the CIS countries, *as we can see from the Figure below,* Uzbekistan presents a similar poverty situation to that of Armenia.
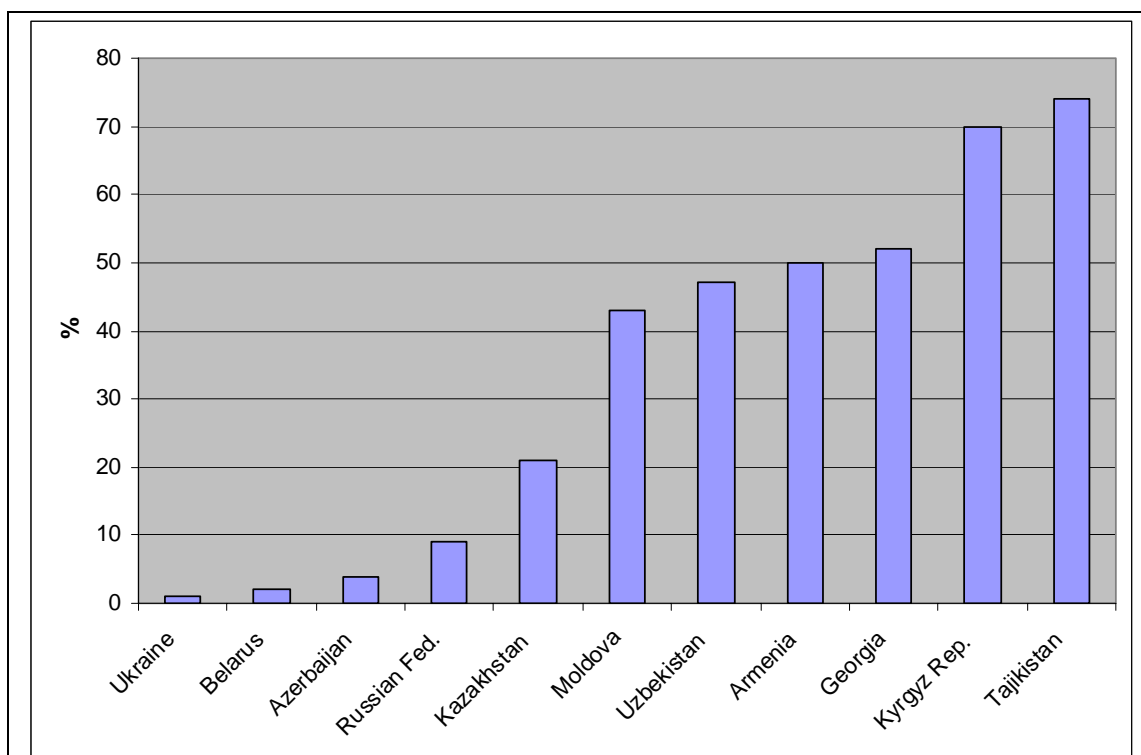
Figure 2.2.4. Poverty rate in Uzbekistan and other CIS countries in 2002/2003, $PPP 2.15.
Source: World Bank 2005

We can also see from the Table and Figure below, that poverty rates in Uzbekistan have been consistently high for children, adults and the elderly alike with families which are male-headed being more adversely affected. In comparison to many of the CIS countries, Uzbekistan shows a high rate of child poverty as well.

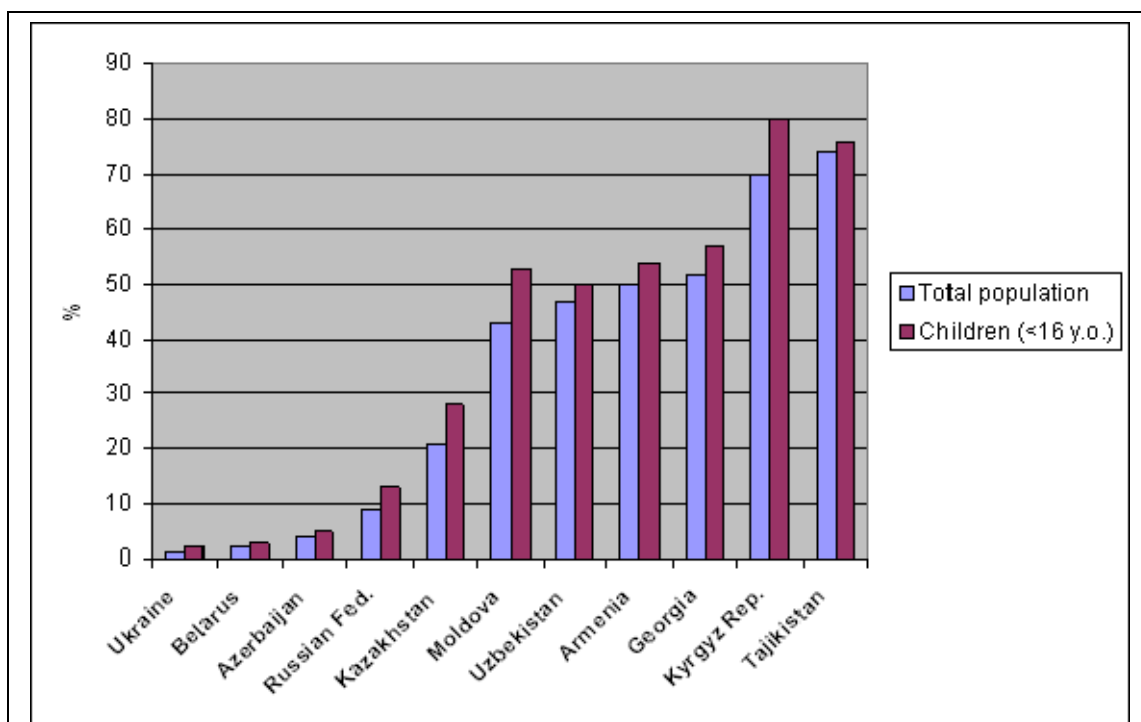| Table 2.2.5. Poverty rates and distribution by gender of Household Head according to the different national surveys						
Country	**Year**	**Poverty rate by age (%), $PPP 2.15/day**			**Poverty rate by gender of HH head (%), $PPP 2.15/day**	
		Children (<16 y.o.)	Adults (17–65)	Elderly (>65 y.o.)	Male	Female
Uzbekistan	2000/01	58	51	48	50	39
Uzbekistan	2002	45	40	35	38	27
Uzbekistan	2003	50	45	40	43	29

Figure 2.2.5. Poverty rate of the total population and among children in CIS countries in 2002/2003, $PPP 2.15.
Source: World Bank 2005

2.3. Geographic distribution of food poverty and poverty: Where are the poor in Uzbekistan?

2.3.1 Urban rural divide

- **Most of the poor and food poor are in Rural Areas.** With 63% of the Uzbek population living in rural areas, the 2001 and 2003 HBS data suggest that around 70% of the food poor and of the extremely food poor live in rural areas. Most of the poverty analyses underline the gap between urban and rural areas and the higher incidence of poverty and food poverty among the rural population. As we can see from the Table below, the incidence of food poverty is 22.5% in urban areas compared to 30.5% in rural areas. Similarly, the rate of extreme food poverty in rural area (11.2%) is higher than in urban areas (7,1%). The poverty incidence, **based on poverty line of $PPP 2.15,** shows a wider difference: The poverty rate, in 2001, was 60% in rural areas, compared with 44 % in urban areas.

Table 2.3.1 Food Poverty and Extreme Food Poverty rates in urban and rural areas of Uzbekistan								
	Incidence of food poverty				Incidence of extreme food poverty			
	2000-01 Original	2000-01 Revised	2002	2003	2000-01 Original	2000-01 Revised	2002	2003
Urban	22.5	27.8	21.8	22.6	7.1	8.9	9.7	9.1
Rural	30.5	33.6	29.4	29.8	11.2	12.1	10.8	12.6
National	*27.5*	*31.5*	*26.5*	*27.2*	*9.7*	*10.9*	*10.4*	*11.3*

Source: 2001, 2002 and 2003 FBS (WB 2005, WB 2007)

Table 2.3.2 Share of the food poor and the extremely food poor in Uzbekistan							
	Share of food poor				Share of extreme food poor			
	2000-01 Original	2000-01 Revised	2002	2003	2000-01 Original	2000-01 Revised	2004	2005
Urban	30.3	32.8	30.0	30.4	27.2	30.2	34.2	29.4
Rural	69.7	67.2	70.0	69.6	72.8	69.8	65.8	70.6
Total	100	100	100	100	100	100	100	100

Source: 2001 and 2003 FBS (WB 2003, MDGR 2006- calculated)

Tashkent and the "other urban" poor

- **This apparent urban/rural gap results from a massive categorization masks. In fact, a wider gap between the capital city (Tashkent) and the "other urban" secondary towns, where poverty and food poverty rates are close to the levels observed in rural areas, exists**. Actually, a large part of the the rural-urban gap results from the fact that **Tashkent** city, which accounts for a quarter of the total urban population and about 9% of the total population, registers relatively very low incidences of poverty and food poverty (24% **and 9.2% respectively in 2001)**. As the Figure and Table below show, the poverty and the food poverty rates in **Tashkent** city were, in 2001, more than three times lower than those in rural areas. The 2003 HBS data show that this gap has considerably widened: the poverty level in Tashkent city is almost 13 times lower than its level in the other urban areas and 14 times lower than its level in rural areas. Thus, although the rural areas have the highest poverty and food poverty rates, the most significant gap is between the capital city and the rest of the country, including secondary cities and small towns, rather than between urban and rural areas.

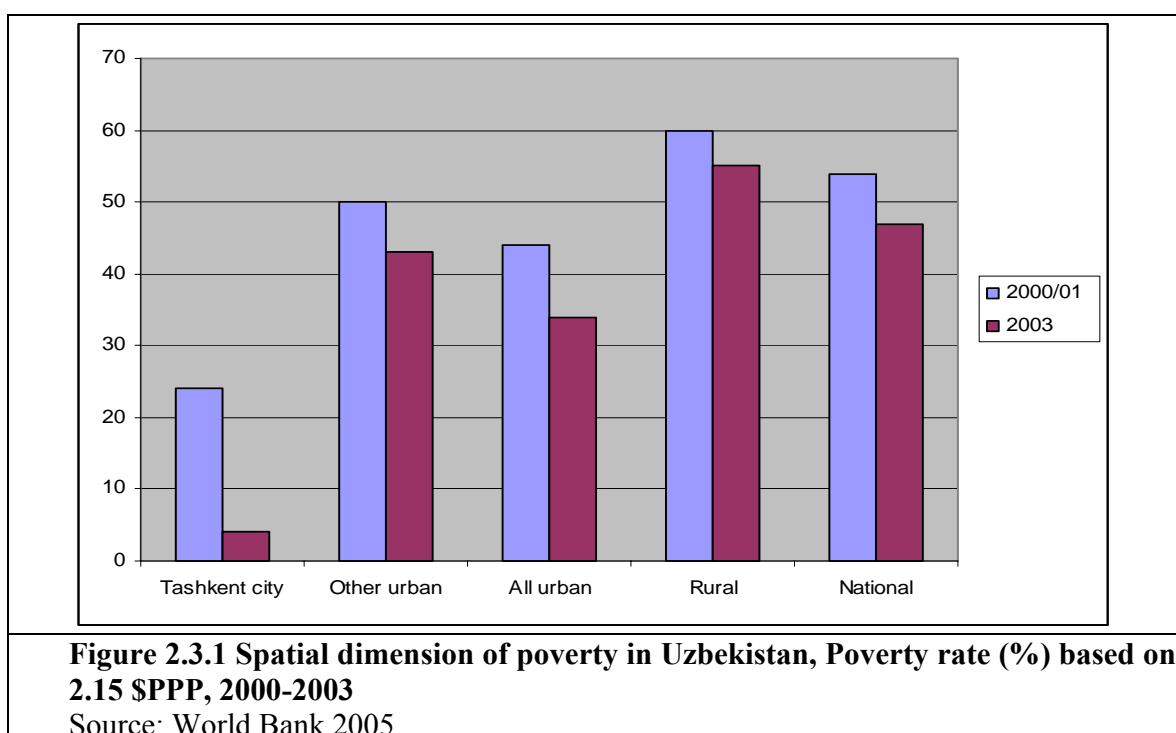| Table 2.3.3. Food Poverty and Poverty rates (%) in Tashkent city and in Urban and rural areas					
	Tashkent city	Other urban	All urban	Rural	National
Food Poverty rate (%)					
2000-2001	9.2	26.5	22.5	30.5	27.5
Poverty rate (%), $PPP 2.15/day					
2000-2001	24	50	44	60	54
2003	4	43	34	55	47
Source: WB 2005 (poverty rate) , WB 2005 (calculated)					

Figure 2.3.1 Spatial dimension of poverty in Uzbekistan, Poverty rate (%) based on 2.15 $PPP, 2000-2003
Source: World Bank 2005

Regional dimension of food poverty
- **The gap between regions is clearly more important than the urban/rural difference.** As the Table below shows, the 2003 poverty rates in Mirzachul region (37.9%) and in Ferghana (31.8%) are significantly higher than in Tashkent (17.5%) and Central region (25.6). The gap is even more pronounced when looking at the rates of extreme food poverty: they went from 4.8% in Tashkent and 6.4% in Ferghana to 19.6% in the Northern region and 26.9% in Mirzachul.
  However, the Frrghana region has the biggest share of the food poor in the country (32.2%) followed by the central region (18.7%) and the southern region (16.3%). In contrast, the central region has the highest share of the extreme food poor (22.2%) followed by the central and the northern regions.
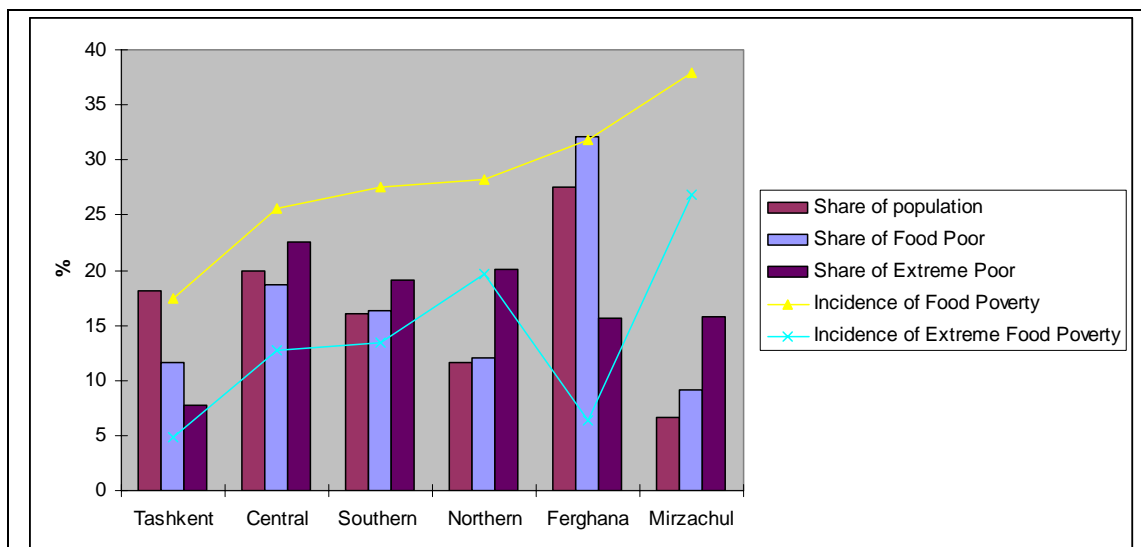
Figure 2.3.2. Geographic distribution of Food poverty and of Food Poor in 2003, by Economic region
Source: World Bank 2007 (LSAU)

Region	Incidence of Food Poverty	Incidence of Extreme Food Poverty	Share of population	Share of Food Poor	Share of Extreme Poor
Tashkent	17.5	4.8	18.2	11.7	7.7
Central	25.6	12.8	19.9	18.7	22.5
Southern	27.6	13.4	16.1	16.3	19.1
Northern	28.3	19.6	11.6	12.0	20.1
Ferghana	31.8	6.4	27.6	32.2	15.6
Mirzachul	37.9	26.9	6.6	9.2	15.7
National	27.2	11.3	100	100	100

Table title: **Table 2.3.4. Regional distribution of food poverty**

- The comparison over time reveals **important changes in the regional distribution of food poverty:**
    a. *The food poverty gap between regions has narrowed, even though it remains significant*. The difference between the poorest and richest region went from 27 percentage points in 2000-01 to 20.4 percentage points in 2003.
    b. **The ranking of the different regions according to the food poverty rate has been reversed**. As it can be seen **in the Table and in Figures below, the ranking** of all the Economic Regions, except Tashkent, **varies across surveys between 2001 and 2003.** However, the Southern Economic Region and the Mirzachul Region present the most striking

changes: In 2000-01 the Southern Economic Region had clearly the highest rates of food poverty (**47 percent)** and of extreme food poverty (**28 percent**). These rates fell dramatically by 2003 to **28 percent and 13 percent, respectively.** At the same time, the Mirzachul region experienced a dramatic rise in food poverty (from **26.5** percent to 37.9 percent) and in extreme food poverty (from **7.6** percent to **26.9** percent), making it the poorest region in the country.

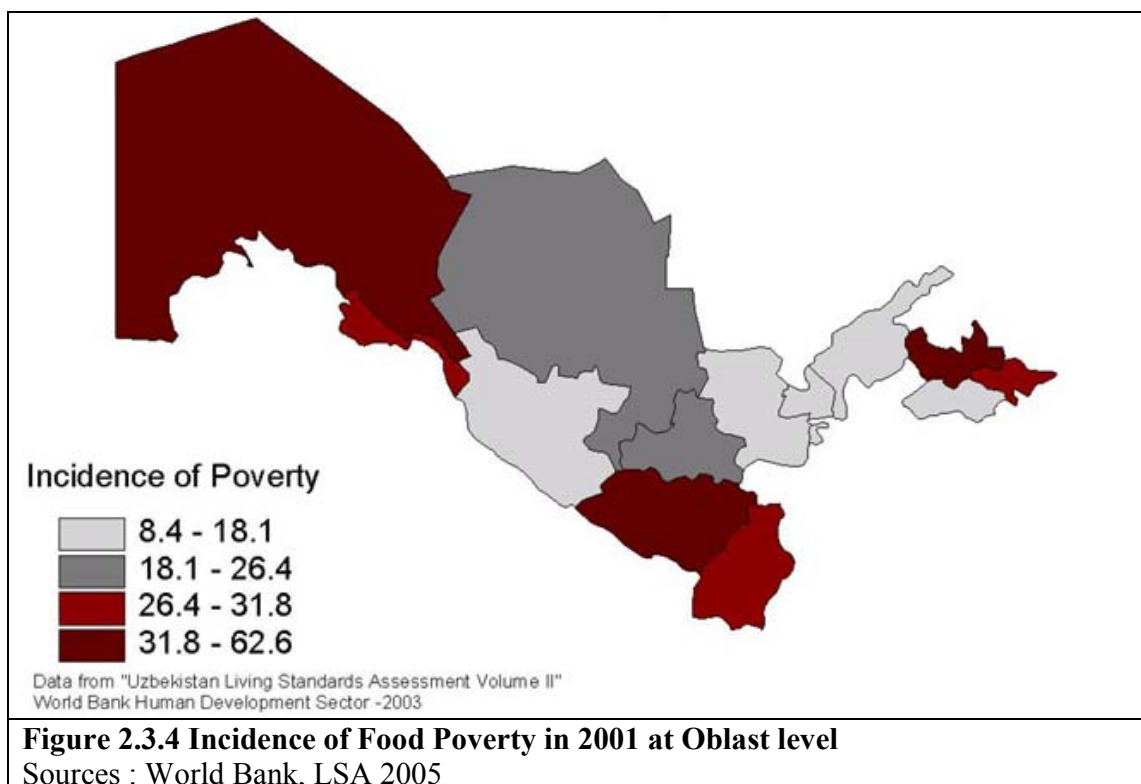| Table 2.3.5 Regional distribution of food poverty over time						
	Incidence of food poverty			Incidence of extreme food poverty		
	2000-01 R	2002	2003	2000-01 R	2002	2003
Tashkent	20.4	20.1	17.5	4.5	5.3	4.8
Mirzachul	26.5	34.5	37.9	7.6	25.1	26.9
Ferghana	34.6	22.9	31.8	9.9	10	6.4
Northem	32.7	24.7	28.3	8.3	10.4	19.6
Central	25.7	23.6	25.6	6.6	6.1	12.8
Southem Region	47.4	41	27.6	28.4	15.4	13.4
National	*31.5*	*26.5*	*27.2*	*10.9*	*10.4*	*11.3*
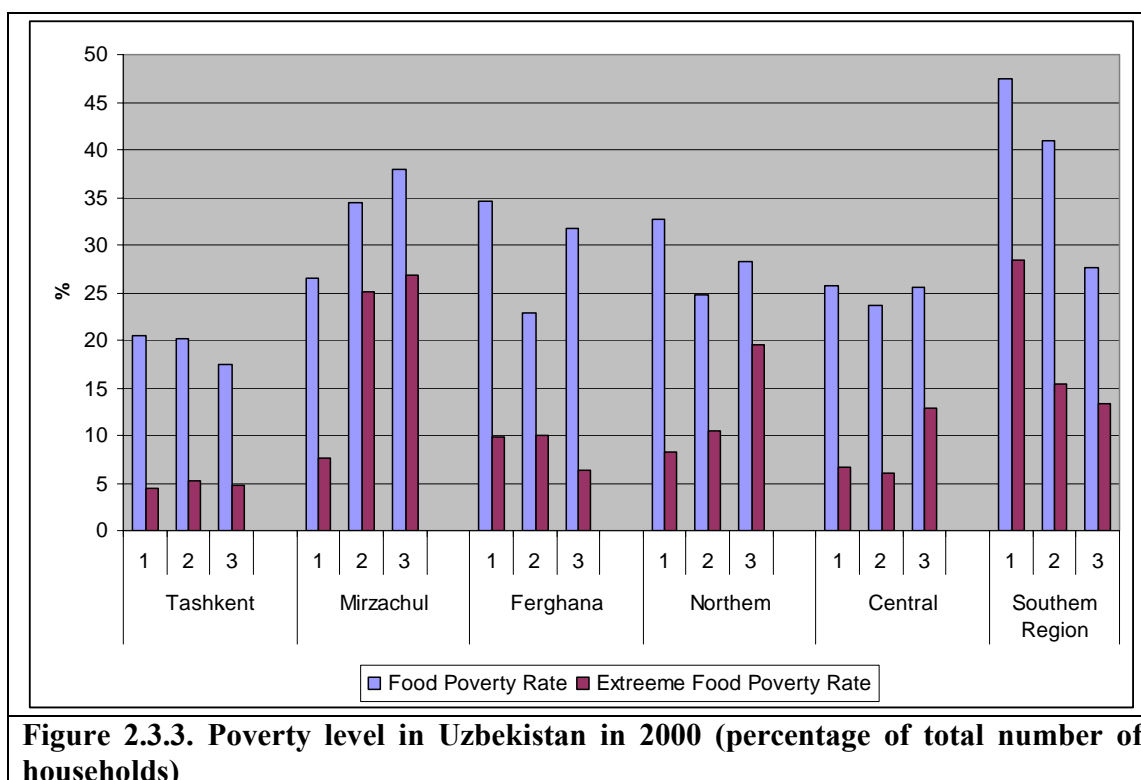
Figure 2.3.3. Poverty level in Uzbekistan in 2000 (percentage of total number of households)

c. *Decline of the food consumption of the poor in several regions*. In the Mirzachul region, in addition to the dramatic increase in food poverty rates, the decline in food consumption levels was so important that the decrease of the food poverty line by 10% led to a decrease of the food poverty rate by only 5%. In other words, food poverty is deeper than previously thought and the food consumption level of the poor is **further from** the **value of the food poverty line**. A comparable substantial decline in food consumption levels of the poor has taken place in the **Northern and in the Central regions. In the Northern region, despite the decrease in food poverty rate, the extreme food poverty rate has increased from 8 percent to 19.6 percent; Similarly, in the Central region, where the food poverty rate has not changed, the proportion of those living below the extreme food poverty line has doubled, passing from 6.6 to 12.8 percent. However, contrary to the situation in these regions, Ferghana region experienced, at the same time, an increase in food poverty rate and a decrease in extreme food poverty rate (from 8 percent to 6.4 percent).**

- *The available information does not allow understanding the determinants of regional variations in food poverty*. More quantitative and qualitative data are needed to understand why and how regional disparities affect the level of food consumption of the population and, more particularly, what factors and circumstances have led to the dramatic increase in food poverty in the Mirzachul region, and to its important decrease in the southern region.

- *The most recent available data, disaggregated only at the regional level, do not allow the analysis of the geographic distribution of food poverty at oblasts level.* **The food poverty ranking of the regions can be hardly used for policy targeting purposes.** Not only is the ranking of most of the region not robust (variations across surveys and sensitivity to small changes in poverty line), but also there are large disparities in food poverty across oblasts in most of the regions. This is what the 2001 survey data, which were disaggregated at the Oblasts level, had clearly demonstrated. Thus, as shown by the Table below, in **Mirzachul region, the rate of food poverty in Djizzak oblast in almost four times that in Syrdarya oblast. Similarly, in the Southern region, which was in 2001 the poorest in the country, the Kashkadarya oblast concentrated more than 20% of the total number of the food poor and 38% of the extreme food poor in the country, and had a food poverty rate (62.6%) more than twice as high as that of Surkhandarya oblast. Therefore, policy targeting requires an analysis of the geographic distribution of food poverty at, at least, oblasts level.**

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Table 2.3.6 Geographic distribution of the poverty at Oblasts level in 2001 (Original)		Incidence of food poverty	Incidence of extreme food Poverty	Share of population	Share of food poor	Share of extreme food poor
Tashkent	Tashkent City	9.2	2.9	8.7	2.9	2.6
	Tashkent Region	16.9	3.8	9.6	5.9	3.8
Mirzachul	Syrdarya	8.4	2	2.6	0.8	0.5
	Djizzak	29.7	7.2	4	4.3	3
Ferghana	Ferghana	18.1	4	10.9	7.2	4.5
	Andijan	31.8	9.1	8.9	10.3	8.3
	Namangan	39.7	12.2	7.8	11.3	9.8
Northern	Karakalpakstan	36.4	7.7	6.2	8.2	4.9
	Khorezm	30.1	8.3	5.4	5.9	4.6
Central	Bukhara	13.4	1.9	5.8	2.8	1.1
	Samarkhand	26.4	8.4	10.9	10.5	9.4
	Navoi	18.7	5.6	3.2	2.2	1.8
Southern	Kashkadarya	62.6	41.6	8.9	20.3	38.2
	Surkhandarya	28.4	9.7	7.2	7.4	7.2

Source: WB, LSA 2005

Figure 2.3.4 Incidence of Food Poverty in 2001 at Oblast level
Sources : World Bank, LSA 2005

2.4 Who are the food poor and why?

Large households with many children

Large households with many children face a greater risk of poverty and food poverty.

Poverty is related to demographic characteristics of the households. Poverty and food poverty rates increase significantly with the number of children living in the household. Thus, As the **Figure below shows, the** 2003 **poverty rate,** based on the international poverty line of $PPP 2.12 rose from 15% among households with no children, to 38% among households with two children, and to 56 % among households with three children or more. Similarly, the food poverty rate increased from 7.5% among households with no children, to 14% among HH with one child, to 34% among households with four children. (World Bank, LSA 2003)
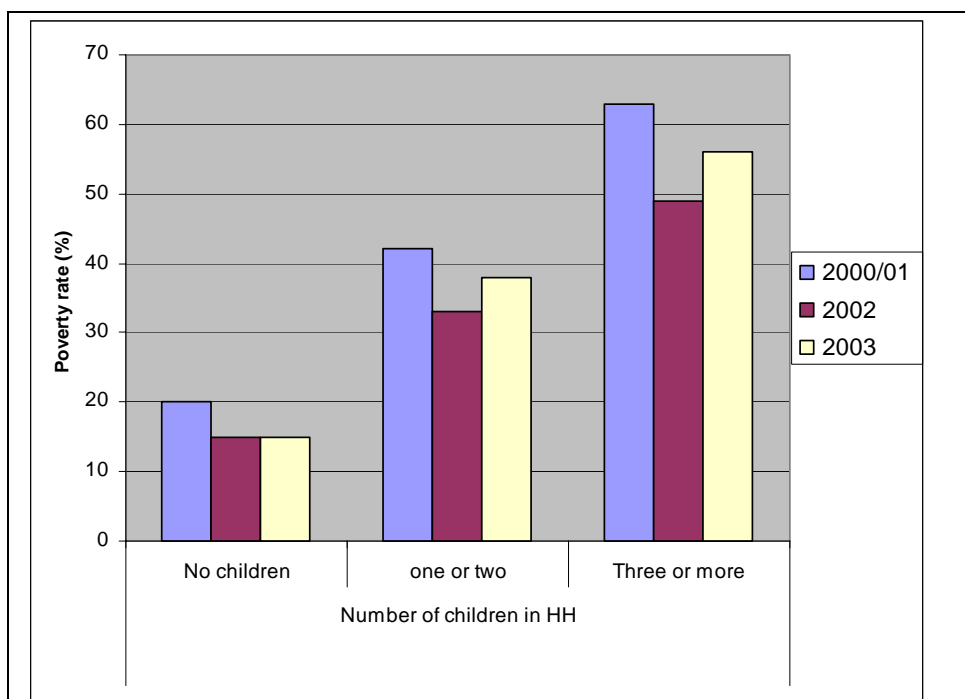
Figure 2.4.1 Demographic dimension of poverty in Uzbekistan: Poverty rate (%) number of children in households, based on the international poverty line 2.15 $PPP
Source: World Bank 2005

The *"discouraged" unemployed*

The "discouraged" and those working in the agriculture sector have the highest incidence of food poverty.

Food Poverty is relatively high among the unemployed and is disproportionately high among the "discouraged" unemployed. Unemployed individuals and their families are clearly at a high risk of living in food poverty. Their food poverty rate is 35%, compared to 25% of the employed). However, the unemployment rate in Uzbekistan is very low by the standards of transition economies. It is estimated at 3% in 2003 and 4% in 2005 (World Bank, 2007). In fact, this rate is based on a narrow definition of unemployment that excludes those who are in working age and would like to work but are not looking actively for a job because they do not believe that they can find one. Several studies have shown that the category of those *"discouraged workers" (*(according to the ILO definition) is significantly larger than the restrictive category of "unemployed". According to the World Bank, the proportion of "discouraged workers" is, in 2005, about 7% of the working age population in Uzbekistan.

More importantly, there is a dramatic difference between these two categories in terms of food consumption and food poverty levels. According to the 2003 HBS data, *29.9 % of the "discouraged workers" are in the poorest quintile (the bottom 20%) of per capita food expenditure distribution* (and, consequently, have total food consumption below the

value of 90% of the food poverty line or 1890 Calories per capita per day). In contrast, "only" 12.2% of the "unemployed" are situated in the lowest food consumption quintile.

Self employment, underemployment, informal and unstable employment are at higher risk of food poverty.
Indeed, work does not protect families from food poverty in Uzbekistan. A quarter of all the employed live in food poverty and as many as half of all the food poor live in households with employed heads. However there are considerable differences in the type of employment between the food poor and non-food poor. Those who are in food poverty are more likely to work in the informal sector, to have an unstable employment and to be self-employed. Thus, according to 2003 HBS data, 22 percent of the workers having temporary or seasonal employment are in the poorest quintile compared to 16 of workers having a stable employment. Similarly 19% of those having part time jobs are in the poorest quintile, compared to 1 2% for full time workers.

Surviving farmers
Agricultural workers face the greatest risk of low consumption

Among those who are working, farmers and other aagricultural workers, who account for nearly a third of all employment but about 49 percent of employment in rural areas, face the greatest risk of food poverty and extreme food poverty and are disproportionately represented among the food poor. According to the 2003 HBS data, more than half of the bottom three food consumption quintiles in rural areas are employed in the agricultural sector. In addition, 30 percent of agricultural workers are in the poorest food consumption quintile (having less than 1890 calories per capita per day).

Why are the agricultural workers living in food poverty?

Low productivity, underemployment and greater informality of employment arrangements in agricultural sector are certainly contributing to the high rate of poverty and food poverty among the aagricultural workers. However, the major factor that contributes to the very low wages and revenues and to high rate of food poverty among agricultural workers is the implicit taxation of Cotton and Grain. This taxation takes place through the low state procurement prices and marketing policy in cotton and wheat, and the overvalued exchange rate. In fact Uzbekistan's three million agricultural workers receive a fraction of the true value of the cotton and wheat which are acquired by the government via the system of compulsory state procurement. Thus, the low procurement price of wheat allows the government to achieve self-sufficiency and keep wheat and bread at an affordable consumption price in the local market. On the other hand, cotton is exported and the revenues, resulting from the differential between the very low procurement prices paid to farmers and the high tariffs obtained in the international market, are monopolized by the government. Cotton is thus a major source of tax revenue, in addition to its contribution to around 25 percent of foreign exchange revenues. According to the World Bank assessment, farms receive one third of the actual value of the cotton they produce. And even when all kinds of subsidies are taken into account, net transfer from the cotton sector (taxes – subsidies), between 2000 and 2004,

represented 31 to 66 percent of the gross farmer's income. Other surveys and observation draw an even bleaker outlook. According to a report by International Crisis Group, those who work on the cotton farms usually get far less than their official wages and sometimes receive goods only, such as cotton-oil, in kind. In any case, wage arrears are significant among those working in agriculture. According to 2003 HBS data, 54 percent of the workers in agriculture report wage arrears, compared to 34 percent for workers in construction and 21 percent for workers in industry. Moreover, wage arrears do not affect all groups of workers equally and are more significant among the low paid workers: 62 percent of those working in agriculture and earning less than the minimum wage reported wage arrears.

Most of the poor farmers would escape food poverty and poverty if the cotton and wheat they produced were sold at world market prices.
Another study (Lundell and all. 2002) simulated the impact on the gross incomes of cotton and grain farmers from an increase in the price of cotton and grain to world market prices. It shows that an increase in cotton prices to world market prices will increase gross annual incomes of all cotton farmers by 80 to 120 percent. More interestingly, this simulation showed that, since cotton comprises a larger share of the agricultural income of farmers from the lower income quintiles, such an increase will have a relatively greater benefit for those at the bottom o f the distribution.

Surviving thanks to small plots

The wages and income that the farmers and agricultural workers get from working in farm enterprises and private farms, which account for about 90 percent of the cultivated land for the great majority o f the production o f cotton and grain production, are clearly insufficient to procure the minimum food necessary to feed their families. However, the farmers are obliged to carry on in this system. Not only can they hardly find another employment, but also the acceptance to grow cotton and wheat on the farm for next to nothing, in the framework of the state procurement system, is, implicitly, the condition for continuing to cultivate the small plots that are given out by the local authorities, normally on a three-year lease. In fact, a significant part of their (insufficient) real income comes from these small plots of one or two hectares, where they grow grain or vegetables, and sometime raise cattle. A part of this own food production is consumed and another part is sold at the bazaar. Thus, in response to the widespread poverty and food insecurity the cultivation of household plots has been for the rural population, and especially the poor, the most important coping strategy to find an alternative source of income and food consumption.
Nationally, 82 percent of all households have access to household plots, 97 percent of all rural households have access to household plots. In urban areas the size of the land is small, and more than half of this is covered by buildings or housing. Rural inhabitants on the other hand, access more land on average, and a larger fraction (about 60 percent) is useable for agricultural purposes. As a result, the household plots play a more important role in rural than in urban areas. There are no available data that allow evaluating the revenues generated by different groups of the population from the cultivation of the household plots. However, a World Bank research (Lundell and Shamsiev, 2002) shows

that total income from household production constitutes, for rural households, the largest share of income (31 percent compared to 24 percent from labour income). In addition, the 2001 HBS data provide a clear indication of their importance for own food consumption, according to different welfare quintiles. It shows that more than a quarter of the food consumption *of rural households comes from own production and from household plots* (compared to 7 percent for urban households). The Table below presents the contribution of (non-purchased food) to food consumption according to different quintiles. It shows that own production accounts for a higher share of the total food consumption of the better of households: they account for about 30 percent of the total food consumption of the highest quintile, compared to 21 percent for the lowest quintile. Knowing that the land size is equally distributed among different welfare quintiles, researchers made the hypothesis that the poor might have access to poorer quality land or other agricultural inputs (Thurman and Lundell 2001, World Bank 2003). Nevertheless, by providing more than 20 percent of food consumption (and some revenues resulting from the sale of a part of the production) the household plots allow the food poor to survive and prevent an important part of the population from falling into food poverty. Without them, the poverty and food poverty rates among rural population would certainly have been considerably higher.

Table 2.4.1 Food consumption structure of Rural population (% of value of food consumption), by quintile						
	1	2	3	4	5	Total
Purchased food	79.30%	76.10%	73.90%	72.40%	70.30%	74.00%
Non purchased food	20.70%	23.90%	26.10%	27.60%	29.70%	26.00%
Total	100%	100%	100%	100%	100%	100%

Source: 2001 FBS data, World Bank, 2003

Table 2.4.2 Food consumption structure of urban population (% of value of food consumption), by quintile						
	1	2	3	4	5	Total
Purchased food	92.10%	92.80%	93.10%	92.70%	92.60%	92.80%
Non purchased food	7.90%	7.20%	6.90%	7.30%	7.40%	7.20%
Total	100%	100%	100%	100%	100%	100%

Source: 2001 FBS data, World Bank, 2003

3. Health and Nutrition status and health care in Uzbekistan

During the Soviet period, Uzbekistan, like the other counties of South-Eastern Europe and the Commonwealth of Independent States (SEE/CIS), had made important progress in the fields of health and nutrition. Although it is true that health indicators were among the lowest of the countries of SEE/CIS, these indicators were very high relative to the average level of income. Uzbekistan had succeeded for example in lowering child mortality rates, immunizing virtually all children, reducing the incidence of acute malnutrition and micronutrient deficiencies and bringing major communicable diseases under control. These achievements had been the result of the combination of several factors: health system and policies ensuring free access to needed health care services; good level of access to safe water and sanitation; generous system of social transfers; accessibility of the low income population to needed food; free access and good quality of education.

That progress came to an abrupt halt with the dissolution of the Soviet Union and the economic crisis during the transition period. In parallel to the increase in poverty and food insecurity, the socioeconomic and institutional crisis resulted in a crisis of the health care delivery system and, thus, in a drastic reduction in the accessibility to health care services and a dramatic deterioration in their quality. The combination of these factors contributed to the rise of malnutrition and to a decline in the health outcomes.

3.1 Crisis of the health care system

Sharp decline in public health expenditures
Health care up till the early nineties was largely funded by the state. Before independence the great majority of health expenditures were from public sources. The Government's contribution to health care at that time represented about 6 percent of GDP. Since independence, ***public health spending has been falling as a share of GDP, as a share of total budget expenditures, in real terms and in per capita terms.*** As a share of GDP, it has more than halved, falling from 6% before independence to 3% percent in 2000 and to only 2.4% in 2005. Per capita public expenditure on health decreased substantially: It fell to 27 current US$ per year in 1997, and to $17 in 2001, which is less than the low income country average ($23 in 2001). It is now only $8 per year, which is in fact among the lowest in the world.

This decline in public health expenditures has impacted strongly on the quality, affordability, and accessibility of health care services (World Bank, 200).

This situation was exacerbated by several interrelated problems: poor availability and accessibility of drugs and basic medical supplies such as anesthetics and antibiotics, especially in rural areas; mass emigration of Russian-speaking population, which deprived the health system of many doctors and other health professionals; sharp decline in the real value of public sector salaries, including those of health workers, which contributed to the rampant bribery and corruption and to the increasing inefficiencies of health services; Deterioration of health equipments and infrastructure; Fall in the number of hospital beds per head by almost 50% between 1992 and 2001.

Increase in formal and informal payments by patients

The fall in public health care expenditures has been accompanied by an increase in the private financing of health care partly as a result of transition from a "free" public to a mixed public/private system and the introduction of formal out-of-pocket payments for care in public institutions. According to the WHO, the formal out of pocket payments surpassed in 2004 public health expenditures and represented 2.5 % of GDP and 51% of total health expenditures. In comparison to other countries with similar per capita income and to other CEE-CIS countries, Uzbekistan have one of the lowest per capita public health expenditure and one of the highest share of out-of-pocket payments (see Figure below).
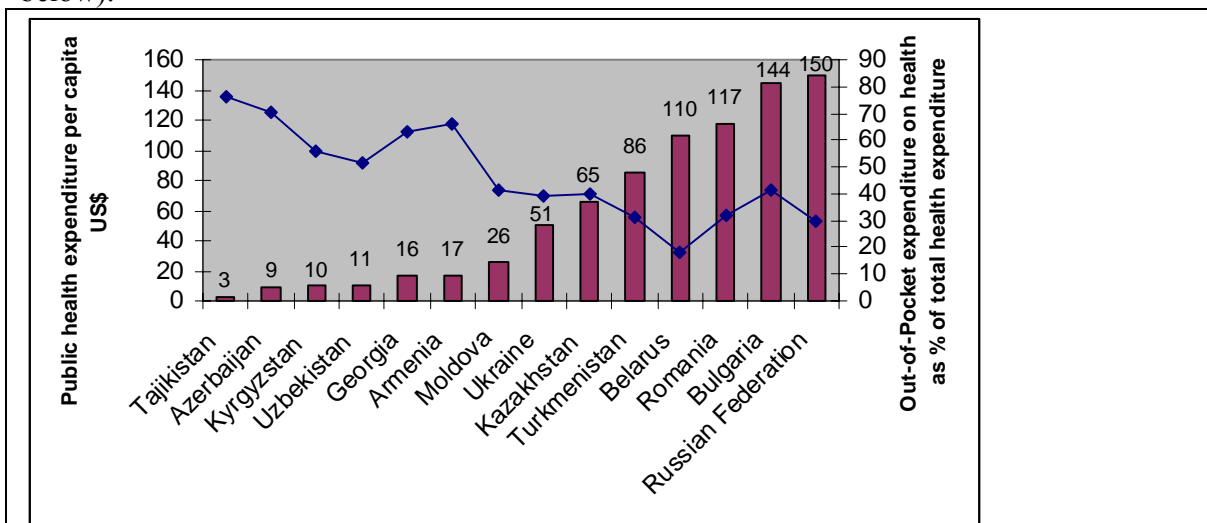

Figure 3.1.1 Public health expenditure per capita (in current US$) and out-of-pocket expenditure as a percentage of total health expenditure, Uzbekistan and selected CEE-CIS countries, 2004
(Source: WHO online database 2007)

Moreover, the fall of the real value of the public sector salary and the endemic corruption have led to a huge proliferation of *informal payments* -defined as payments to health care providers in cash or in kind and made outside official channels- by patients as the only means of access to health services and drugs.

The unofficial payments (ranging from bribery and informal payments to doctors and medical staff to payment for drugs and necessary medicine such as bandages and spirit) have become a significant burden on the household budgets, particularly on those of low-income. A large portion of these additional expenditures is directed toward the health sector employees who seek to compensate for their lower salaries by demanding informal payments for services and medicines that are supposed to be available at no cost.

According to a World Bank qualitative survey (2002), more than two thirds of health users interviewed reported making informal payments of cash and in-kind goods and services. These informal payments represent between 40 and 60 percent of total income of health providers (World Bank, LSA 2003). The 2005 LSAU underlined the importance of informal payments and estimated that they accounted for 50 percent of the formal ones. (World Bank, 2007)

Thus, although the public health expenditures have been drastically reduced (2.4% of GDP), the formal and informal out-of-pocket payments for care, estimated from the FBS, have increased to a level that put the total health care expenditure in Uzbekistan between 6-8% of GDP (World Bank, LSA 2003). However, a large amount of these resources (informal payments) bypass facilities and public channels. Therefore, instead of contributing to the reinvestment in the system, informal payments and practices have impeded the development of health services and reduced their quality, their accessibility and their accountability.

Formal and informal payments contribute to poverty and impoverishment and reduce access and utilization of health services by the poor.

Out-of-pocket payments impose a substantial financial burden on households. According to 2001 FBS, they constitute, on average, 18% of food consumption for those households reporting health expenditures in the month preceding the survey. The burden of expenditures falls disproportionately on the poor: the poorest households spend 22% of food consumption on health care[3] (table below).

Table 3.1.1 Expenditures on health care by income quintiles						
	Poorest	Second	Third	Fourth	Fifth	Total
Expenditure in soums	3899	4524	4123	5400	4898	4680
Expenditure as a share of household food consumption	22.1	19.1	15.8	20.5	14.6	17.6

Source: World Bank, LSA, 2003. Calculated for those households reporting expenditures

The 2001 FBS also shows that the impact of out-of-pocket expenses is especially severe in households with more vulnerable members such as children and individuals with chronic conditions. Households in the lowest income quintiles with children under 15 spent 28% of monthly food consumption on health care. For households with chronically ill or disabled members the potential impoverishment impact on non-poor groups from health care expenses is significant. Average health care expenditures constituted between half to 60% of food consumption for the second and third income quintiles.

This burden is, in fact, a major factor that affects the utilization of health services, particularly for the poor. A study in Ferghana region (Cashin 2001) confirmed the importance of financial barriers to obtaining health care, and found that 21% were not seeking care when sick due to inability to afford medical care. It also found that low income individuals were less likely to seek care than higher income individuals and, when they did, it was at a more severe stage.

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[3] Based on all households, including those who did not report health expenditure, the average Uzbek household spent, in 2000/01, 1422 soums per month on health, (and 2238 soums in 2003), which represent about 5% of average household food consumption. Households in the wealthiest quintile spend 1.9 times more on health than the poorest households (3 159 soums compared to 1646 among the poorest in 2003). (World Bank, LSA 2003 and 2007)

The burden of out-of pocket payments does lead to impoverishment in the case of health crises, such as an accident or chronic illness. Coping mechanisms to manage such large expenses were mostly informal (family, relatives, and friends) and were insufficient to stop people from falling into poverty. The typical ways of coping with such crisis were, for example, depleting savings, borrowing money, selling assets, such as sheep, cows and jewellery, and reducing certain expenses, including food. (World Band LSA2003 and 2007),

Public health expenditures aggravate rather than mitigate existing inequities. They tend to benefit the capital city and richer regions, while regions with higher incidence of poverty spend less per capita on health care (**Figures 3.1.2**). Kashkadarya for example receives the lowest per capita allocations for health despite the fact that it has the highest incidences of poverty. This budget allocation probably reflects the geographical distribution of health infrastructure. It also reflects the fact that public health expenditures favour inpatient care and hospitals, which consume more than two thirds of the health budget.

More importantly, the growing differences in the quality of the services provided, the differences in the physical conditions (state of repair and equipment) and staffing levels of the various facilities, and the system of formal and informal payments are preventing the poor population from using the health care system, especially the higher end facilities which are used mainly by better off households. If users cannot pay in advance for services, they are likely to be refused treatment, even for emergencies. Poor people living in remote regions are particularly disadvantaged, since they will incur transport as well as health care costs.

As a result, health resources are mainly consumed by the rich urban populations, who constitute the majority of those who seek care in hospitals and polyclinics. Thus, as the figure below shows, about 40 percent of public Expenditures on in-patient hospital visits are consumed by the richest quintile of the population.
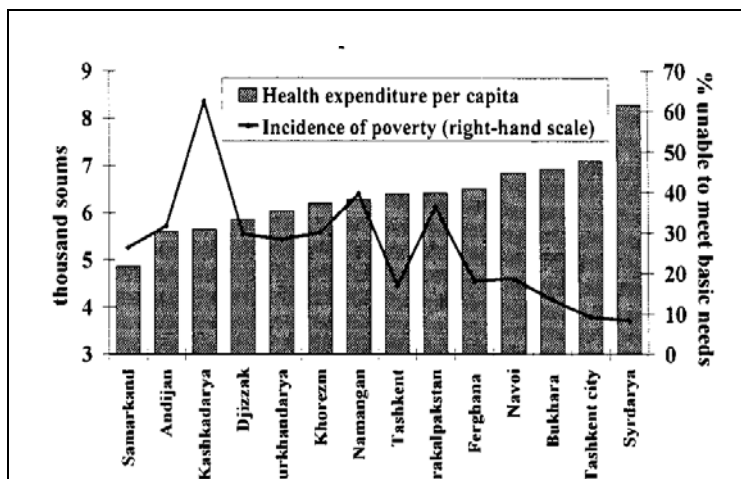

Figure 3.1.2 Poorest Regions Get a Smaller Share of Public Expenditures on Health Care
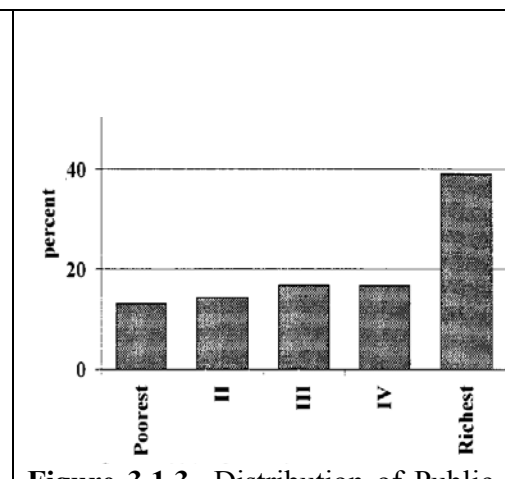*Source: World Bank PER 2005*

Figure 3.1.3 Distribution of Public Expenditures on In-patient Hospital Visits, by Quintiles
Source: World Bank LSA 2003

3.2 Nutritional Status of the Uzbek population

Child malnutrition

The prevalence of under-nutrition among children under the age of five is used as key indicator for measuring progress towards the achievements of the MDG goals, as the link between a better nutritional status in childhood and with improved cognitive development and school performance, on one hand, and an improved physical health and labour productivity on the other, both of which enhance income-earning potential later in adulthood, is well established (World Bank, 2006).

Malnutrition results in an increased risk of morbidity and mortality. It **also leads to** poor cognitive development and, consequently, **to** substantially lower school performance. Malnutrition also has intergenerational effects: infants born to women who were malnourished during early childhood are smaller than infants born to better-nourished women. Infants born at a low birth weight are at greater risk of morbidity and mortality compared with infants of normal birth weight.

Malnutrition is a direct result of inadequate food intake and infectious disease episodes.which, in turn, are the results of insufficient food at the household level, improper feeding practices, inadequate maternal and child care, insufficient health services, and an unhealthy environment (contaminated drinking water, poor sanitation, etc.). As a result of the synergistic interactions between poor nutrition and infectious diseases, the combined effects of malnutrition and infection are more profound than the sum of the individual effects of either one alone. This synergetic interaction results in a cycle of malnutrition-infection-more nutritional deterioration-more infection. Thus, the convergence between interventions to improve household food security, health care and care practices is necessary to reverse this cycle of malnutrition-infection.

Three standard indices are commonly used in assessing the nutritional status of children:

• **Height-for-age or Length-for-age** is a measure of growth. Low height-for-age index identifies past undernutrition or chronic malnutrition. It cannot measure short term changes in malnutrition. Deficits in height-for-age are referred to as **stunting.**

Weight-for-height describes current nutritional status. Low weight-for-height helps to identify children suffering from current or acute undernutrition or **wasting.**

• **Weight-for-age**. The advantage of this index is that it reflects both past (chronic) and/or present (acute) undernutrition (although it is unable to distinguish between the two). Low weight-for-age index identifies the condition of being **underweight**,

High level of child malnutrition: at least one in five children under five is malnourished in Uzbekistan

The 2002 Uzbekistan Health Examination Survey (UHES) gives a precise picture of the nutrition status of children. The results indicate that child malnutrition is a major cause for concern in Uzbekistan. The Table below shows the percentage of children under three and under five years of age classified as either severely (≤ 3 SD) or moderately/severely (≤ 2 SD) malnourished according to height-for-age, weight-for-height, and weight-for-age. Twenty-one percent of the children are moderately or severely stunted, 7 percent are moderately or severely wasted, and 8 percent are moderately or severely underweight. Based on the NCHS reference population, only 2.3 percent of healthy, well-nourished children would be expected to fall below -2 SD on each of these three indices. Thus, it is clear that in Uzbekistan, at least one in five children under five is malnourished.

Table 3.2.1. The percentage of children under three and under five years of age classified as either severely (≤ 3 SD) or moderately/severely (≤ 2 SD) malnourished			
MALNUTRITION TYPES	**Stunted** Low height-for-age	**Wasted** Low weight-for-height	**Underweight** Low weight-for-age
Children Under-Three years Moderate/Severe (<-2SD)	22.8	6.1	8.8
Children Under Five years Moderate/Severe (<-2SD)	21.1	7.1	7.9

Certain age groups among children are at a higher risk of under-nutrition. The Figure below shows the prevalence of undernutrition among children under five years aggregated by age. Stunting rises rapidly over the first year and reaches a peak at age 10-11 months (35 percent). It remains elevated through age 42-43 months (at 20 to 33 percent). This trend is different from that observed in most of other counties. According to the WHO, global prevalence estimates indicate a rise in stunting in the second or third year subsequent to extended periods of inadequate food intake and increased morbidity. Thus, unless exposure to infectious disease agents is especially high in this population, these data suggest that many infants in Uzbekistan are not receiving an adequate intake of breast milk and/or nutritional weaning foods during this normally rapid period of growth. The proportions of children moderately to severely underweight by age follows a similar pattern to that observed for stunting. In contrast, wasting increases rapidly over the fourth year of life and remains at the high level of 8.4% through age 4-5 years.
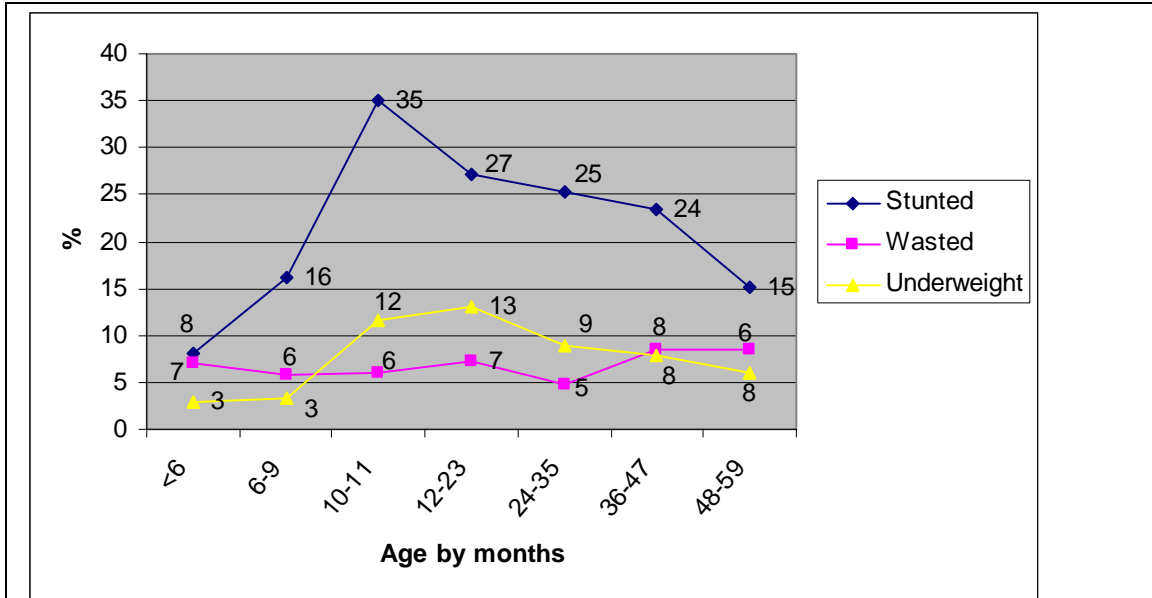
Figure 3.2.1 Prevalence of Under-nutrition among children under 5 represented by age groups
Source: 2002 UHES

This high level of child malnutrition is however lower than it was in 1996.
The comparison between the indices of nutritional status obtained in the 2002 UHES and the 1996 UHDS for all children under the age of three years show a significant decline in the level of child malnutrition between 1996 and 2002. As the figure below shows, the proportion of children under three who are stunted declined by one-third, and the proportions of the wasted and underweight declined by one-half.
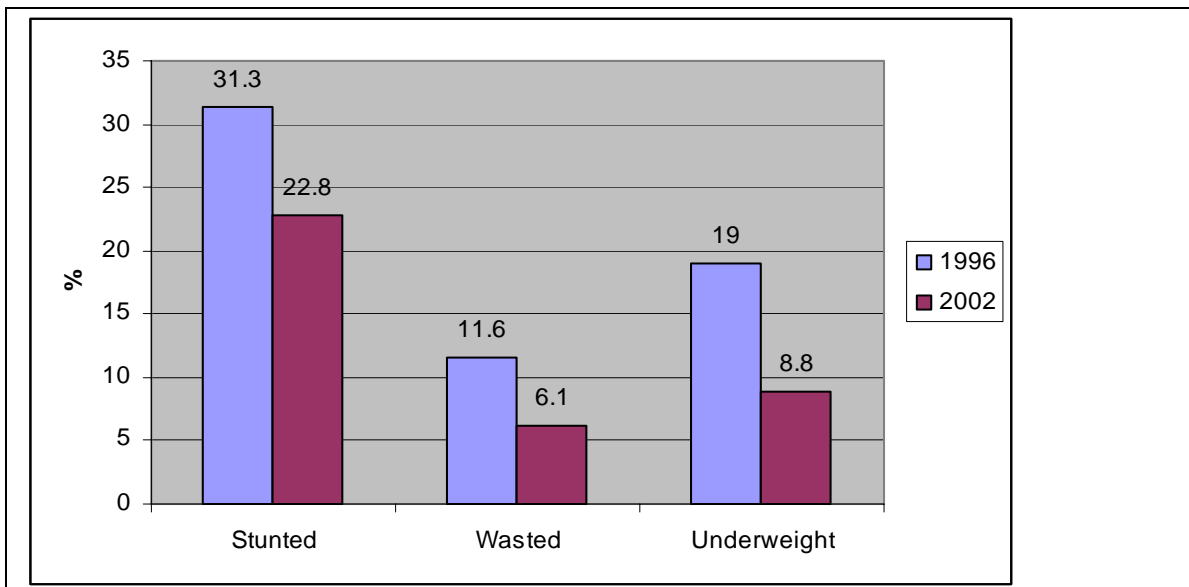
Despite the improvement between 1996 and 2002, child malnutrition rates in Uzbekistan remain among the highest in the region..
The Table below shows data on the prevalence of malnutrition in the FSU countries, presenting the three indices used for assessing the prevalence of under-nutrition (stunting, wasting, and underweight) among children **under three years of age**. These data are from different nationally representative surveys (HDS, HES, MICS) undertaken in these countries between 1996 and 2002. According to these data, the nutritional status of children in Uzbekistan is worse than in most of the other FSU countries. At comparable dates, only Turkmenistan seems to have higher rate of child under-nutrition. It is worth noting that Uzbekistan has (in 1996 and in 2002) **the highest wasting rate which reflects the current malnutrition situation of children.**

Table 3.2.2. Percentage of children under 36 months severely or moderately undernourished

	Survey year & type	Stunted Low height-for-age	Wasted Low weight-for-height	Underweight Low weight-for-age
Uzbekistan	**1996 (DHS)**	**31.3**	**11.6**	**19**
Uzbekistan	**2002 (HES)**	**22.8**	**6.1**	**8.8**
Kyrgyzstan	1997 (DHS)	24.8	3.4	11.0
Kyrgyzstan [a]	2006 (MICS)	13.7	3.5	3.4
Kazakhstan	1999 (DHS)	10	2	5
Turkmenistan	2000 (DHS)	24	6	13
Tajikistan [b]	2002 (NNS)	30.9	4.9	
Armenia [a]	2000 (DHS)	11	3	3
Azerbaijan [a]	2000 (MICS)	19.6	7.9	16.8
Georgia [a]	1999 (MICS)	11.7	2.3	3.1

Note: [a] rates are for children under five; [b] rates are for children 6 to 59 months.
Sources: DHS – Demographic and Health Survey, MICS–UNICEF Multiple Indicator Cluster Survey, NNS – National Nutritional Survey.

Poverty and under nutrition
Child under-nutrition is much higher among the poor. The 2002 and 1996 HES data, disaggregated by the World Bank (2006 and 2007), indicate that under-nutrition is more prevalent among the poor. As the Figures below show, the percentage of moderately to severely underweight or stunted children was significantly higher among those in the poorest quintiles. Moreover, children in the poorest quintile were three times as much at risk of being severely underweight than those in the highest income groups. However, the still high rate of stunting and underweight among children from the richest quintile suggests that under-nutrition can not be explained by food poverty alone. Food and care

practices (as breastfeeding) are probably contributing significantly to child under-nutrition in Uzbekistan.

Under-nutrition is also more prevalent in children living in large households. Among households with four or more children aged 0 to 6, there was more than a 90 percent chance that at least one of the children was anemic; while there was almost a 45 percent chance that at least one of the children was stunted.
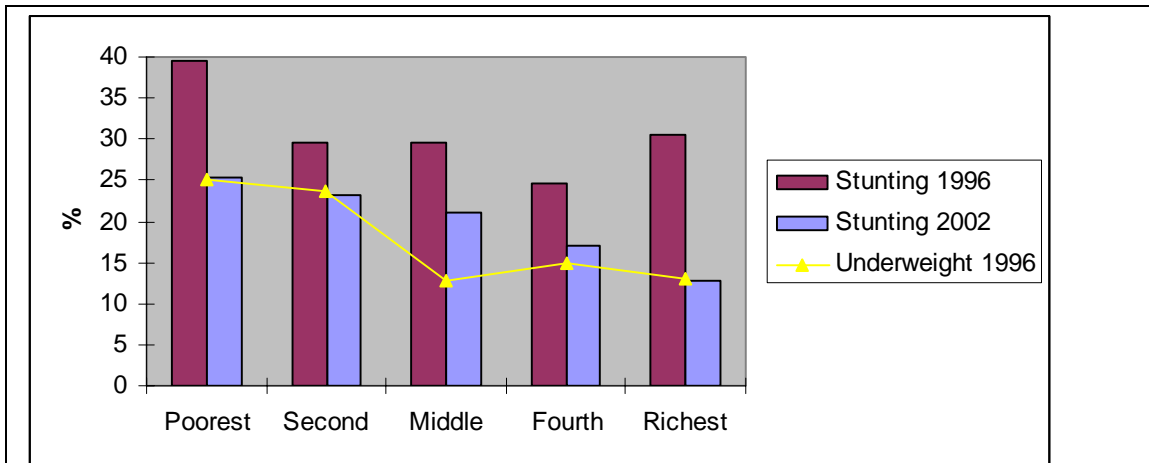

Figure 3.2.3. Prevalence of Under-nutrition among children under 6 represented by poverty quintiles in 1996 and in 2002
Source: World Bank 2005 and 2007, Findings from 1996 and 2002 UHES

Undernutrition is higher in rural areas

Significant urban-rural differences in rates of child under-nutrition
The percentages of stunting and underweight among children are 1.5 times higher in rural areas compared to urban ones. The gap is even wider in severe stunting: its rate in rural areas is twice higher than in urban areas.

Data from the 1997 DHS also show that stunting and underweight in children under the age of five are twice as high in rural areas compared to urban areas as the Table below shows.

The comparison of the 1996 and 2002 data shows a significant improvement in both urban and rural areas. However, this improvement has been more marked in urban areas and, as a result, the urban/rural gap has widened. Between 1996 and 2002, stunting has decreased by 50% in urban areas and only by 22% in rural areas; underweight declined by 65% in urban areas in comparison to 53% in rural areas. The better access of urban children to healthcare is probably one of the most important factors that contribute to the better (or less worse) nutritional situation of urban children.

Table 3.2.3 National Prevalence of under-nutrition in children <5 years in Urban and Rural Areas						
	Stunted (low height for age) Moderate & Severe (<-2SD)		Wasted (low weight for height) Moderate & Severe (<-2SD)		Underweight (low weight for age) Moderate & Severe (<-2SD)	
	1996	2002	1996	2002	1996	2002
Urban	32.6	16.3	10.2	6.7	16.6	5.8
Rural	30.7	23.8	12.2	7.9	19.7	9.1
Source: UDHS 1996 & UHES 2002						

Regional variations
There are significant regional differences in the rates of child under-nutrition.
Stunting is highest in the East (Namangan, Ferghana and Andijan Oblasts) and in the East-Central region (Samarkand, Dzhizak, Syrdarya and Tashkent Oblasts) (26 and 23percent, respectively). Underweight is highest in the East-Central region (Samarkand, Dzhizak, Syrdarya and Tashkent Oblasts) (13.4%). The lowest rate of stunting and underweight is found in Tashkent City (12 and 4 percent respectively)[4].
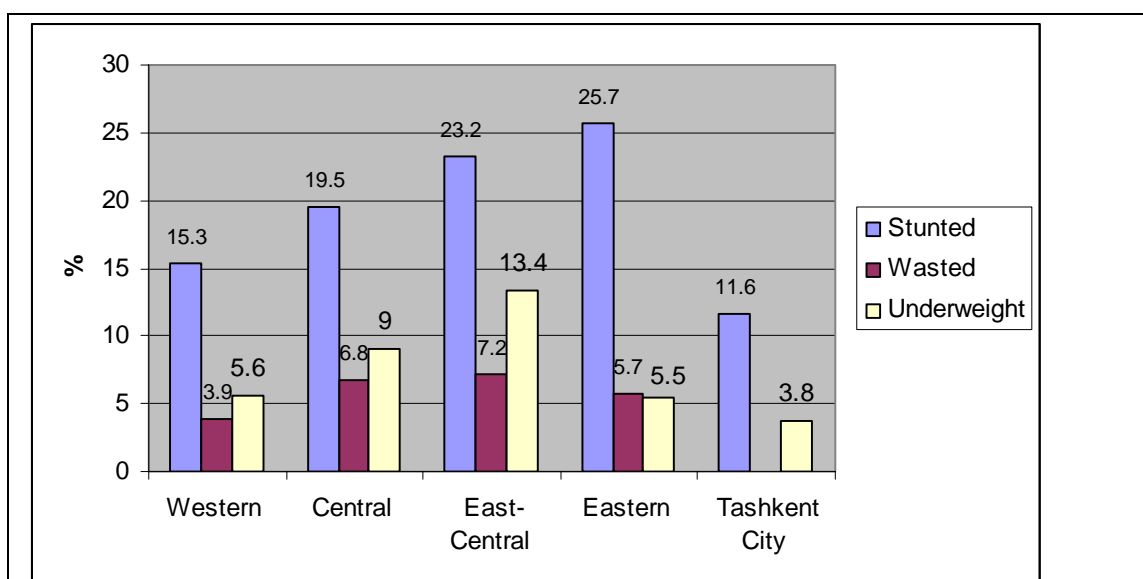

Figure 3.2.4 Prevalence of Under-nutrition among children under 5 represented by regions
Source: 1997 HDS

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[4] The UHES indicates for Tashkent City the highest rate of wasting (17%). This high rate is questionable, since it is inconsistent with the low rates of underweight and stunting.

Anemia in Children

Anemia is a condition characterized by a reduction in the red blood cell volume and a decrease in the concentration of hemoglobin in the blood. Nearly half of the anemia is due to iron deficiency, which, in turn, is largely due to an inadequate dietary intake of bioavailable iron. Children need to absorb an average of 1 mg per day of iron to keep up with the needs of their growing bodies. Since children only absorb about 10% of the iron they eat, most children need to ingest 8-10 mg of iron per day. Breast-fed babies need less, because iron is absorbed 3 times better when it is in breast milk. Anemia can also be caused by deficiency in the nutrients folic acid and vitamin B12, both of which are necessary for normal blood production. People who eat little or no meat, vegetarians or vegans, may not have enough vitamin B12 in their diets. A folate deficiency can develop from eating too few folate-containing foods such as vegetables or infants drinking only goat's milk.

It is estimated that about one-third of the world's population is anemic and that iron deficiency is the primary cause. Hence, iron deficiency is the leading micronutrient deficiency worldwide, surpassing both vitamin A and iodine.

With regard to its impact on children, iron-deficiency anemia is associated with impaired cognitive performance, motor development, coordination, language development, and scholastic achievement (UNDP 2005). Cognitive losses related to iron deficiency are estimated to be between 4% and 10% (UNDP 2005). In addition, anemia increases morbidity from infectious diseases because of its adverse impact on the immune system.

A very high prevalence of anemia in Uzbekistan: 58 percent of children under three and 49 percent children under five suffer from anemia.

The Figure below presents the prevalence of anemia in children age 6-59 month. According to the UHES data, the percentage of children with any anemia rises from 50 percent at age 6-9 months to a high of 70 percent in the second year of life, and then declines to 36 percent in the fifth year.

The short median duration of exclusive breastfeeding in Uzbekistan (0.6 months) and the early introduction of plain water and other (nonbreast) milk foods (58 percent of infants less than 2 months old) (UHES 2002) are certainly among the main factors contributing to the high rate of anaemia among children under two years of age. However, the persistence of high levels of anemia in children from two to five years indicate that anemia is also resulting from the low level of consumption of red meat and other iron-containing foods.
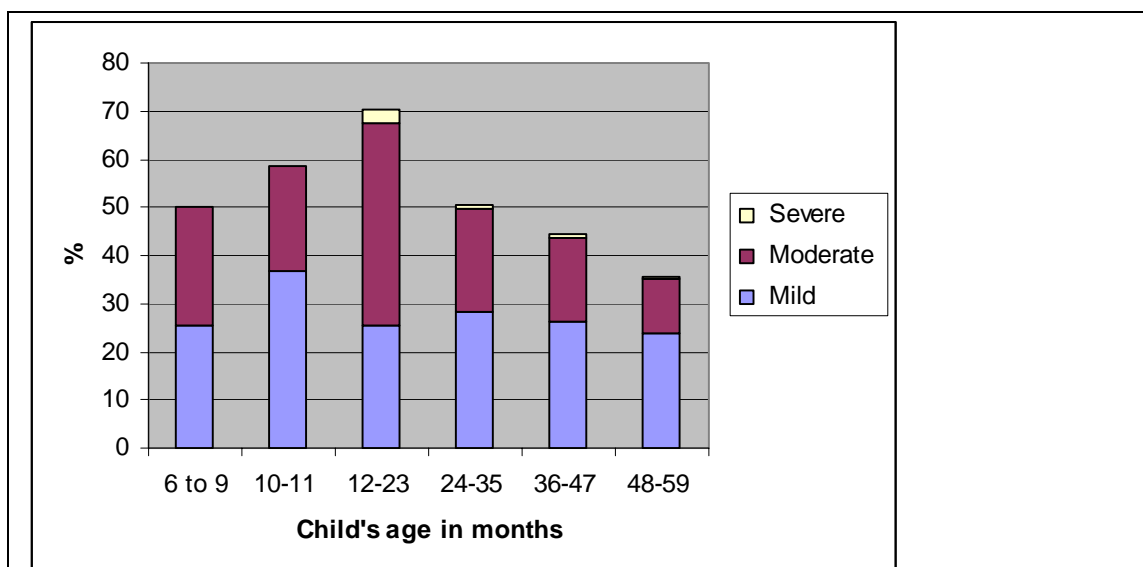
Figure 3.2.5 Prevalence of Anemia among children under 59 *months (%)* **by Severity of Anemia and Age**
Source: UHES, 2002

Report on micronutrient deficiencies in Uzbekistan

- 60% of children from 6 to 4 months of age in Uzbekistan are at risk for impaired intellectual and physical development. **Cause: iron deficiency.**
- According to estimates, in Uzbekistan, 400,000 mentally disadvantaged children are born annually due to iodine deficiency during pregnancy. As the prevalence of thyroid gland diseases account for 5-40% in Uzbekistan, moderate iodine deficiency disorders are so common that they lower the national average IQ by 10-15 points. **Cause: iodine deficiency.**
- The immunity of half (53%) of Uzbekistan's children is below normal, making them more vulnerable to diseases and poor development. **Cause: vitamin A deficiency.**
- Many young Uzbek women die each year during pregnancy and labour. **Cause: severe iron deficiency anaemia.**
- About 5,000 Uzbek infants per year are at higher risk of death before or immediately after birth. **Cause: severe anaemia in mothers.**

- Lower labour productivity. According to estimates, lower labour productivity in Uzbekistan lowers the GDP by 1. %. **Cause: iodine and iron deficiencies.**
Source: UNICEF/Micronutrient Initiative, 2004

Figure 3.2.6 Prevalence of Anemia among children under 59 *months (%)* by Severity of Anemia and Age
Source: UHES, 2002

In comparison to other countries in Central Asia, ***Uzbekistan has the highest level of anemia in children under three and a*** high rate among children under five but is in level with the Kyrgyz Republic and Tajikistan (Table 3.2.4).

Table3.2.4. Anemia Prevalence among children in Uzbekistan and other Central Asian countries		
Country	**Children under 3 years (%)**	**Children under 5 years (%)**
Uzbekistan (2002)	**57.9**	
Uzbekistan (1996)	**60.8**	49.2
Kazakhstan (1999)	48.9	36.3
Kyrgyz Republic (1997)	50.0	49.8
Mongolia (1999)	42.2	
Turkmenistan (1997)	35.8	35.8
Tajikistan (2003)		48.0
Source: Demographic & Health Surveys		

Regional differences in the prevalence of anemia among children: the secondary towns have the highest rate of anemia. As was the case with food poverty and under-nutrition, the most marked difference in anemia prevalence is that between Tashkent city and the rest of the country. Not only is the anemia rate in the capital city (20%) less than half of the overall rate, but also most of the anemia cases (80%) are mild.

In contrast, the rate of anemia in the "other urban" secondary towns and cities (54%) is almost three times higher than in Tashkent, and even higher than in rural areas (52%). This highlights once again that the apparent urban/rural gap results from a massive categorization and masks the real situation of the population in the secondary towns.

However, differences by region are also significant: the rate of anemia among children in the Central and East-Central regions is as high as 58 percent (compared to 46 percent in Eastern region).
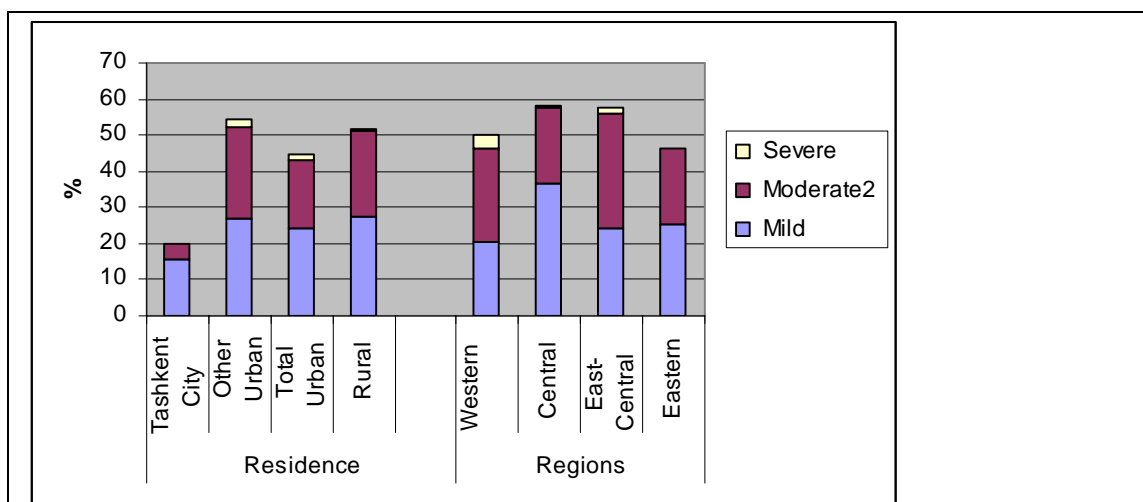
Figure 3.2.7 Regional distribution of Anemia in children age 6-59 *months (%)* **by Severity of Anemia and Age**
Source: UHES, 2002

Table 3.2.5. Distribution of anemia by residence and regions					
		Mild	**Moderate**	**Severe**	**Total**
Residence	Tashkent City	15.7	4	0.2	19.9
	Other Urban	27.1	25.1	2	54.2
	Total Urban	24	19.3	1.4	44.7
	Rural	27.5	23.6	0.8	51.9
					0
Regions	Western	20.6	25.6	3.7	49.9
	Central	36.7	21	0.4	58.1
	East-Central	24.2	31.7	1.8	57.7
	Eastern	25.5	20.6	0.3	46.4

Anemia is much higher among the poor children. Children in the poorest quintile are more at risk of having mild, moderate or severe anemia than those in the highest income groups (see Figure below).
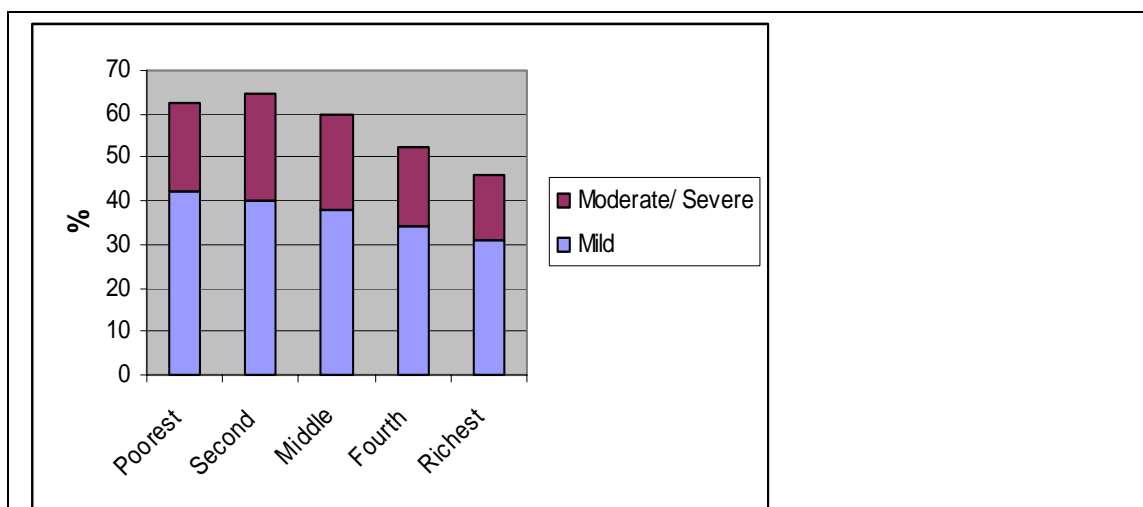
Figure 3.2.8 Prevalence of anemia among children under 6 by severity of anemia and by poverty quintiles in 2002
Source: World Bank 2007, Findings from 2002 UHES

Other micronutrient deficiencies among children

Vitamin A deficiency damages immune systems among young children so that illness and infections become more common, and the children ability to resist diseases such as diarrhea, measles and acute respiratory infections is greatly hampered. Lack of vitamin A can also cause eye disease and can lead to blindness.

It is estimated that *more than half of the children under five (53% or about 2 million of children) suffer from either moderate or severe vitamin A deficiency*. The highest rate of VAD is found among children aged 12-23 months (61%). It is worth noting that this age group suffers also the highest rate of anemia and that this is the age when any form of malnutrition does the most irreparable damage.

Adult malnutrition

Malnutrition among adults is characteristic of transition. Uzbekistan is facing a double burden of undernutrition and overnutrition.

The adult population in Uzbekistan, especially women in child-bearing age, also suffers from energy deficiency.

According to the 2002 UHES, 6 percent of women are undernourished (BMI less than 18.5). The highest rates of undernourishment are found among women aged 15-24 years (8 to 13 percent), women living in the Western and Eastern regions (7 and 9 percent), and women with no education or only a primary/middle school education (9 percent).

In addition, 21 percent of women are overweight, and 7 percent are obese. There is a very strong positive relationship between age and BMI scores. While 8 percent of women aged 15-19 are overweight or obese, the figure for women aged 45-49 is 54 percent; more than

sixfold increase. Overnutrition also increases with the increase in the level of education and place of residence. Women living in Tashkent City have the highest rate of overweight/obesity combined (34 percent), while women from the Eastern region have the lowest (24 percent).

The nutritional status of women in a child bearing age is as important for her well-being as it is for that of her children. An under-nourished mother has higher risks of delivering low birth babies and an obese mother has higher risks of having complications during delivery.

Micro-nutrient Deficiencies

Uzbekistan has the highest anemia rates among women in reproductive age in the region. According to the 2006 MDG Report, Anemia is found in 65% of women in the 15-49 age group nationwide. In 2004, the Uzbek Ministry of Health reported that 74.4% of all pregnant women suffered anemia with significant regional differences: the proportion of pregnant women with anemia ranged from 39.1% in Tashkent city to 99.3% in Karakalpakstan.

The prevalence of anemia in pregnant women greatly increases the risk of maternal death and impacts on the health of the newborn. Anemia is associated with early and late reproductive losses and is an important contributing factor to giving birth to Low Birth Weight babies (LBW).

3.3 Overall deterioration of other health indicators

The government of Uzbekistan reports an overall improvement of health indicators since independence and more particularly since 1995. The Government claims that these improvements have resulted from a general reduction in disease incidence and a certain success in combating certain infectious diseases. (MDG 2005)
However, official figures are unreliable. Data and estimates from international sources show that, contrary to official claims, health indicators in Uzbekistan deteriorated significantly early in the 1990s, in the beginning of the transition, and have not registered any significant improvement since the middle of that decade (1990s).

Decline in life expectancy
Life expectancy at birth is the average number of years a newborn infant would be expected to live if health and living conditions at the time of its birth remained the same throughout its life. Based on the mortality rates measured in that year, it reflects the health of a country's people and the quality of care they receive when they are sick.

While the official statistics claim that life expectancy has increased from 69.3 in 1990 to 72.5 in 2005, other estimates show that, on the contrary, an important decrease in life expectancy has taken place. According to the World Bank, combined life expectancy at birth for males and females decreased from 69.3 in 1990 to 66.4 in 2005 (World Bank,

2007). WHO estimates are even lower, suggesting a life expectancy of 66 years in 2003. This decline in life expectancy followed the same trend for both males and females. During the same period, life expectancy worldwide had risen on average by about 4 months each year (World Bank). Consequently, the gap between life expectancy in Uzbekistan and in the EU (78.9 in 2003) has dramatically widened. In 2005, life expectancy at birth in the EU15 exceeded the estimated rate in Uzbekistan by 13 years[5] (WHO Regional Office for Europe 2007).

Table 3.3.1. Life Expectancy in Uzbekistan			
	Official data 2004	**World Bank estimates (2005)**	**WHO (2003)**
Combined life expectancy (years)	72.5	67.4	66
Female	74.7	70.7	68
Male	70.0	64.2	63

High Infant and Under-5 mortality rates

According to official data, infant and under-five mortality rates have continuously improved during the last 15 years: Infant mortality fell from 34.6 (per 1000 live births) in 1990 to 25.6 in 1995 and to 15.2, in 2004; Under-five mortality rate fell from 47.5 in 1990 to 42.5 in 1995 and to 21 in 2004 (MDG 2006). However, more reliable survey data show that infant and under five mortality levels in Uzbekistan are of concern as they are significantly higher than suggested by official statistics, and the trend, if not worsening, does not show any improvement. Thus, as the Table below shows, infant and under five mortality rates as estimated in three national-level surveys (HDS, MICS, UHES) are 2-3 times higher than reported by the Uzbek MOH. According to Uzbekistan Health Examination Survey (UHES) 2002, the average infant and under-five mortality rates for the period of 1998-2002 were, respectively, 62 and 73.3 per 1,000 live births.
Acute respiratory infections and diarrhea continue to be main causes of under-five mortality.

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[5] The unreliability of official figures on life expectancy at birth is mostly due to under registration of child mortality, which is a result of two main factors: the use, by the official Uzbek statistics, of the old restrictive Soviet definition of a live birth, which does not count neonates dying in the first seven days of life. According to different international estimates, this continued use of the Soviet definition accounts for about one third of the difference between officially recorded rates and estimates based on survey data (World Bank 2004a; Aleshina and Redmond 2003; Ahmedov and all 2007). The second factor is the misreporting of births and infant deaths by medical staff, partly due to the fear of negative consequences by medical personnel. According to the UHES (2004), about two thirds of the difference between official and survey data is due to infants dying after seven days of life, indicating general underreporting of infant deaths in the registration system.

Table 3.3.2 Comparison between Survey Infant and Child Mortality Rates and Government Rates		IMR		U5MR	
		Survey	Official	Survey	Official
UHES	1998-2002	62	19.1	73.3	26.4
MICS	1996-2000	52	27.2	69.0	32.6
UDHS	1992-1997	64.1	35.5	76.6	43.0
Sources: Uzbekistan Health Examination Survey, 2002.					

Moreover, The IMR and under-5 mortality rates in rural areas are almost twice that in urban areas. It is especially so for regions with high poverty rates. This is largely characterized by the lack of appropriate health care facilities in rural and remote areas and low living standards. (World Bank, 2005)