

**CHAPTER 2**

**PRESENT STATUS OF WATER SUPPLY SERVICES IN  
UZBEKISTAN**



## Chapter 2 Present Status of Water Supply Services in Uzbekistan

### 2.1 Socioeconomic Conditions

#### 2.1.1 Overview of the Country

##### (1) Geographical Features

The Republic of Uzbekistan ("Uzbekistan" hereinafter) is located between the rivers of Amu Darya and Syr Darya in the middle of Central Asia and covers an area of 447,400 km<sup>2</sup>, which is slightly larger than California. Uzbekistan shares borders with Afganistan (137 km), Kazakhstan (2,203 km), Kyrgyzstan (1,099 km), Tajikistan (1,161 km) and Turkmenistan (1,621 km). It does not have any coastline of its own, but it borders the shrinking Aral Sea in the West.

The territory of Uzbekistan is a combination of plains and mountains relief. The mountains belong to the Eastern Tien Shan and Gissar-Alai ranges.

The climate of Uzbekistan is continental, with sharp amplitudes of day and night, summer and winter temperatures. The average annual precipitation falling on the plains is 120-200 mm and 100 mm on the highlands. About 10% of the country consists of intensely cultivated, irrigated river valleys.

Uzbekistan is rich in natural resources. Deposits of oil and gas, gold, silver, copper, uranium, wolfram, lead and zinc, tungsten, molybdenum, coal, and natural salts, among others are of significant value. According to the Ministry of Macroeconomics and Statistics, the total mineral and raw material potential of the country exceeds US\$ 3 trillion.

## **(2) Political Structure**

On August 31, 1991 the independence of Uzbekistan was proclaimed. The sovereignty of the country is recognized by more than 150 countries in the world. On March 2, 1992 the country was admitted to the United Nations.

Uzbekistan is a democracy headed by an elected President. The President is elected for a term of 5 years. Oliy Majlis<sup>1</sup> is the highest legislative body. Oliy Majlis is unicameral and consists of 250 deputies elected by territorial one-mandatory electoral districts for a period of 5 years. The Cabinet of Ministers is the highest executive body.

The Republic of Uzbekistan includes the autonomous Republic of Karakalpakstan, 12 provinces, 163 rural regions and 119 cities in its administrative and territorial structure. The Hokims<sup>2</sup> of these territories are appointed by the President and are the representatives of power in the respective provinces, regions and cities.

## **(3) Population**

The population of Uzbekistan is about 24 million. The largest ethnic groups are: Uzbek (77%), Russian (6%), Tajik (5%), Kazakh (5%) and others (8%). About 38% of the population live in urban areas and about 62% in rural areas. Russians form the largest minority group, accounting for 8% of the population in 1989. Their share has dropped because of a lower birthrate. The overwhelming majority of Russians live in Tashkent City and other industrial cities including Chirchik City.

The total population of Uzbekistan has increased by about 17% over the last 9 years at an average annual growth rate of 1.9%, as indicated in Table 2-1-1. Natural increase was the main factor for the population growth during this period. Almost four-fifths of the total growth was in rural areas.<sup>3</sup>

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<sup>1</sup> The Parliament.

<sup>2</sup> The Governor.

<sup>3</sup> The UNDP Human Development Report 1998

**Table 2.1.1 Selected Statistics on Demography**

(units: thousands of people)

Year	Total Population	% Share of Urban Pop.	Natural Increase	Net Migration	Net Increase
1990	20,420	40.5	567	-180	388
1991	20,863	40.1	593	-96	497
1992	21,360	39.7	570	-74	496
1993	21,853	39.2	544	-54	490
1994	22,282	38.8	509	-139	370
1995	22,690	38.4	534	-89	445
1996	23,130	38.1	494	-50	444
1997	23,560	37.9	472	-49	423
1998	23,967	37.7	416	-52	364

(Source: Uzbek Economic Trends, First Quarter 1999 (TACIS))

Net migration has remained negative during the last 9 years. Annual fluctuations have been large, with peaks in 1990 and 1994. Emigration flow has been directed toward Russia and immigration has been mainly from neighboring countries such as Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan.

#### (4) Economic Policy

Following its independence in 1991, according to the TACIS Report, "Uzbekistan sought to prop up its Soviet-style command economy with subsidies and tight controls on production and prices." However, faced with a high rate of inflation, the government began to introduce reforms in mid-1994 by introducing tighter monetary policies, expanding privatization, slightly reducing the role of the state in the economy and improving the environment for foreign investors. Nevertheless, the state continues to be a dominating influence in the economy, particularly imports, access to foreign exchange market, prices, banks and banking activities, and corporate governance.

Gradualism represents the basic principle of the reform program of Uzbekistan. In his speech titled "Karimov" 1996, the President Karimov declared that "In principle, the transition to the market mechanism should be carried out step-by step and without revolutionary leap nor experimental measures." Five principles mentioned below form the basis of economic policy adopted since its independence in 1991.

The five basic principles of economic transformation advocated by the President can be briefly summarized as follows:

- 1) priority of the economy over politics;
- 2) the state as the chief reformer of the economy;
- 3) law predomination;
- 4) social protection for the population; and
- 5) step-by-step and consistent reforms

This gradualism and preservation of state control are expressed in several spheres of the country's economic system, viz. land ownership, partial state order, in agriculture, import and foreign exchange restrictions, protection of the least favored social group.

#### **(5) Privatization**

Statistical information on the results of enterprise privatization in Uzbekistan is quite limited. Information on privatization results by sector is not available, nor the results by enterprise size.

During 1998, 451 enterprises were transformed into new forms of property in accordance with a Program for decentralization and privatization. As the result, the portion of state-owned enterprises decreased during the year from 12.1% to 11.1% out of the total number of registered entities.

However, it appears that small companies still account for the majority of privatized enterprises. Thus, about 36% of the GDP and the industrial production in 1998 was still produced in the state sector and more than 48% of the public services to population were provided by state-owned enterprises. The share of employees engaged in the state sector has decreased by 2.9% during 1998 but still made up 25.8% of the total work force.

The most privatized sectors until 1998 were agriculture and retail trade, where the percentage of state-owned enterprises was only 1.3% and 4.7% (% of total volume of trade), respectively.

The implementation of regional programs for the support of small and private businesses has resulted in creating about 15 thousand new small private enterprises.

#### (6) GDP

According to the official statistics<sup>4</sup>, the real GDP for the year 1998 increased by 4.4% over that of 1997 and amounted to 1,358.8 billion sum. GDP per capita grew by 2.6% in 1998 and amounted to about 56.7 thousand sum (equivalent to US\$ 515 when converted at sum 110/US\$).

All major components of the GDP, which is calculated in Uzbekistan as gross value added by goods production, and services production plus net taxes on products and export-import operations, grew at almost the same pace throughout 1998.

GDP yearly changes over a longer term are available only from other sources.

**Table 2.1.2 Real GDP Growth Rate and Nominal GDP**

Year	Real GDP Growth Rate (% change on previous year)	Nominal GDP (B. Sums)
1992	-11.2	0.44
1993	-2.3	5.11
1994	-5.2	64.88
1995	-0.9	302.79
1996	1.7	559.07
1997	5.2	976.83
1998	4.4	1,358.78

(Source: Uzbek Economic Trends, First Quarter 1999 (Taxis))

Sector contribution to GDP is summarized in Table 2-1-3. Agriculture accounts for about one fourths of GDP in Uzbekistan in 1997, and is an essential sector of the economy.

<sup>4</sup> See *The Basic Indicators of Social and Economic Development of the Republic of Uzbekistan in 1998*. Tashkent, 1999.

**Table 2.1.3 Gross Domestic Product by Sector (% of Total)**

	1993	1994	1995	1996	1997
Agriculture	27.9	34.5	28.1	22.4	25.8
Industry	22.4	17.0	17.1	17.8	16.5
Construction	5.5	5.8	7.3	8.2	8.1
Transport & Communication	5.5	5.8	7.3	6.7	6.3
Trade	6.2	7.5	5.2	7.0	8.2
Other Services	19.6	19.8	22.1	23.3	23.6
Net Indirect Taxes	9.4	8.2	13.1	14.4	11.5

(Note) Because of the limited availability of relevant data, EIU's data was quoted for this purpose.

Source: EIU Country Profile 1999/2000

### (7) Industry

According to the official statistics<sup>5</sup>, industrial growth amounted to 5.8% in 1998, with the fastest growth being achieved in the chemical and oil-chemical industry (24.6%), the food industry (10.5%) and the fuel industry (6.6%). Production of user goods increased in total by 7.2% or by 5.4% per capita. However, production in the electric-power industry, the ferrous metallurgy sector and the building materials industry decreased during the same period.

Industrial growth was essentially influenced by high investment activities. In accordance with the structural reorganization of economy, 56.7% of all capital investments were directed to industry.

**Table 2.1.4 Total Industrial Output by Sector (current prices; B. Sums)**

Year	Electricity	Oil, Gas, Coal	Iron & Steel	Non-ferrous Metals	Chemicals and Chemical Products	Machinery and Equipment	Building Materials	Textile, Clothing, and Footwear	Food & Beverages	Other	Total
1994	3.4	5.7	3.7	0.5	2.0	4.3	9.2	12.8	8.0	2.0	51.5
1995	34.5	3.2	3.0	23.7	12.5	20.6	15.5	46.5	21.8	24.0	233.6
1996	60.1	68.1	40.7	40.7	24.6	43.8	23.4	85.4	34.5	60.0	446.8
1997	71.3	100.1	65.7	65.7	29.5	85.4	30.6	135.6	78.1	101.0	704.5
1998	95.5	141.7	89.9	89.9	48.0	111.3	37.5	168.7	110.2	138.0	950.4
(%)	(10.0)	(14.9)	(1.1)	(9.5)	(5.1)	(11.7)	(3.9)	(17.8)	(11.6)	(14.5)	(100)

(Source: Uzbek Economic Trends, Q1 1999)

<sup>5</sup> See *The Basic Indicators of Social and Economic Development of the Republic of Uzbekistan in 1998*. Tashkent, 1999.

## (8) Agriculture

Irrigated oasis agricultural areas is primarily the nature of agriculture in Uzbekistan, where daylight is sufficient in most of its land on the one hand, but rainfall is generally scarce on the other. Therefore, most of the cultivated areas in the country are the results of irrigation. For the land not cultivated, people live nomadic lives. Another aspect is monocultural agriculture which arose as a consequence of production-sharing among the Republics of the former Soviet Union. Cotton growing was in Uzbekistan, Kyrgyz and Turkmenistan, cereal farming was in Kazakhstan and cattle breeding in the Republic of Kyrgyz.

The abandonment of this production-sharing system after independence in 1991 resulted in an unsecured and unsatisfactory position for these five Republics who wished to become self-sufficient in food production and also to establish procurement, processing and distribution systems for their agricultural produce and materials in each county. This explains the most fundamental reason for the weak performances of the agricultural sector in all the Republics after their independence, as represented in Table 2.1.5.

**Table 2.1.5 Growth Rate of GDP and Gross Agricultural Production  
of Central Asian Countries**

	1993		1994		1995	
	GDP	Agriculture	GDP	Agriculture	GDP	Agriculture
Kazakhstan	-15.6	-10.0	-25.0	-23.0	-8.9	-21.3
Kyrgyz	-16.0	-10.0	-26.5	-15.0	1.3	4.0
Tajikistan	-11.1	-4.4	-21.5	-36.2	-12.5	-21.1
Turkmenistan	-10.0	8.0	-18.8	-11.0	-12.0	-10.0
Uzbekistan	-2.4	-0.7	-3.5	2.7	2.7	-3.0

- (Source: "Central Asian Experiments in the Transition to a Market Economy: Present Stages and the Work to be Done," Edited by Manabu Shimizu)

President Karimov proclaimed that Uzbekistan would become self-sufficient in food supply by the end of 1996, which he later withdrew. In the same year, the country had to rely on emergency food imports because of an unexpected crop failure.

The following problems related to water utilization for agricultural purposes have been pointed out as significant reasons for the less than effective performance of the agriculture sector:

1) More than half of the 4.2 million hectares of the irrigated land must be maintained by irrigation machinery. But most of the irrigation facilities there, especially the pumping stations, can be regarded as obsolete and more than half of the trunk irrigation channels are in need of repair and improvement.

2) Agriculture continues to have dominant share of the country's economy, accounting for 26% of the GDP in 1996. Cotton is the primary crop. Cultivation of cotton requires large amounts of water, and economic planners during the Soviet era directed the development of an inefficient irrigation system for its cultivation. Since 1960s, the irrigation system has diverted so much water from the rivers feeding the Aral Sea that the sea is dying up.

3) Along with the privatization policy which started in 1993 as part of the reform process, almost all agricultural organizations have been or are in the process of being privatized. Kolkhozy and sovkhozy as well as agricultural lands are being privatized under this policy. As the process goes on, administrative functions that used to be borne by the smallest administrative units like kolkhozy and sovkhozy tend to perform less effectively since those organizations are deserting their responsibility for the control of agricultural water.

4) To date, very few meters for water supply services to residential users have been installed. For agriculture water as well the metering devices have not been sufficiently introduced, which has caused waste and loss of water. On the user side, the problem is that water conservation awareness has remained at a low level.

### **(9) External Trade**

According to TACIS<sup>6</sup>, Uzbekistan's exports dropped by almost 20% in 1998 and imports of goods and services declined by 27% last year. According to the official information, a positive balance of external trade was achieved. This tendency, according to TACIS, has been partly due to tight import controls with restrictions on access to foreign exchange and is also supported by a rapid increase in the surplus of the balance of services.

Cotton still represents nearly 40% of all exports. However, the government aims to increase the share of industrial goods. The share of exports to CIS countries decreased to 26% of total exports in 1998, compared to 34% in 1997, mostly because of the financial crisis in Russia in August 1998. Russia was the largest single buyer of Uzbek products, purchasing with 14.9% of its exports in 1998. Switzerland, the UK and South Korea follow in the list of major countries to which Uzbek products are exported.

More than 47% of all imports into Uzbekistan are machines and equipment, of which 28% come from CIS countries. Russia was the largest import channel to Uzbekistan with a 16.0% share of all imports in 1998. Other major imports come from South Korea, Germany and the USA.

### **(10) Foreign Direct Investments**

According to TACIS<sup>7</sup>, foreign direct investments (FDI) amounted to US\$ 313 million in 1998. The City of Tashkent remains the major recipient of foreign investments - about 40%. The leading sectors for FDI have been transportation, textile and footwear, as well as the oil and communications sectors.

Sectoral distribution of FDI (including foreign loans) during 1996 to 1998 is shown in Table 2-1-6. Transportation sector has sustained major position during the period, around 19%. In 1998, other leading sectors were textile and footwear (16.8%), oil (13.8%), and communication (11.4%). According to Tacis Report, a significant change in sectoral distribution of FDI was seen in the first

quarter of 1999. During the period, 20.1% went into communication industry. On the contrary, only 2.8% went to light industry, sharp decline from 16.8% during the same period of the previous year.

**Table 2-1.6 Distribution of Foreign Capital (FDI and Loans) by Sector, 1996 – 1998 (%)**

	Oil Sector	Chemicals	Engineering	Textiles, Footwear	Food	Transportation	Communications	Other Sectors	Total
1996	-	-	4.0	16.3	11.5	18.8	9.0	40.4	100.0
1997	6.7	4.5	2.5	5.0	22.7	19.3	18.9	20.4	100.0
1998	13.8	3.2	6.7	17.6	6.3	19.1	18.9	20.4	100.0

(Source: Tacis Report)

Although foreign direct investment with 100% ownership is not officially restricted in Uzbekistan, FDI in the country consist mainly of joint ventures with local capital participation, according to Tacis Report. "The State Property committee disclosed in April 1998 that there were more than 3,300 registered entities with foreign capital, including around 610 wholly-owned subsidiaries and 2,600 joint ventures." "Turkey and the USA are the largest joint venture partners, and South Korea, Indonesia, UK, Germany and Japan are also major contributors."

#### (11) Public Finance

The state budget is not publicly available in Uzbekistan. It is known only from official sources<sup>8</sup> that the public deficit was reduced to 2.1% of GDP in 1998. Income in the State budget, according to the same source, accounted for 101.9% of the planned figure and expenditures, 99.2%.

The low fiscal deficit reflects progress in revenue raising measures and expenditure control. These revenue measures for the year 1998 included: raising the VAT from 18% to 20%, raising resource taxes (land, water), increasing local fees, imposing taxes on dividends and on the profits of commercial banks amongst others. The apparent spending reductions were accomplished by lending to agriculture (as an off-budget item) and cutting expenditures in other areas including routine maintenance, health and education and also by tighter requirements for budgetary allowances.<sup>9</sup>

<sup>8</sup> See *The Basic Indicators of Social and Economic Development of the Republic of Uzbekistan in 1998*. Tashkent, 1999.

It should be noticed, however, that according to the ADB Report, "adopting the IMF definition, which includes off-budget accounts and net lending, the consolidated fiscal deficit could be as high as 7-8 percent".<sup>9</sup> The budget deficit was financed largely by the domestic banking system. Also, the Annual Report 1999 of the World Bank notes the problems of public finance, saying "CIS countries will need to improve public finances by redressing tax evasion and wide-spread nonpayment of utility charges while prioritizing public expenditures in favor of the most vulnerable."

### (12) Inflation

The producer price index increased by 49% during 1998<sup>11</sup>. Principally, the sharp increase in fuel and energy prices in July 1998 contributed to this increase. According to the same source, user price inflation amounted to 25.9% in 1998 which somewhat exceeded inflation forecast. The inflation trend looks like it is heading downward, as indicated in Table 2.1.7, especially as it has remained 30% during the last two years.

**Table 2.1.7 Inflation Trends**

Consumer price Year	1994	1995	1996	1997	1998
CPI (% change from previous year)	1,281.4	117.3	64.3	27.6	25.9

(Source: Ministry of Macroeconomics and Statistics quoted in *Uzbek Economic Trends, First Q. 1999 TACIS*)

### (13) Labor Market

The average annual number of the population engaged in economic activity increased by 1.4% and reached 8.8 million in 1998. According to the Ministry of Labor, official unemployment is very low at 40.1 thousand (1998), i.e. only 0.5% of the economically active population. However, the actual

<sup>9</sup> See *Asian Development Bank. Country Economic Review. Uzbekistan. April 1999.*

<sup>10</sup> See *Asian Development Bank. Country Economic Review. Uzbekistan. April 1999.*

<sup>11</sup> See *Economic Trends. Quarterly Issue. Uzbekistan. January-March 1999. TACIS, May 1999.*

unemployment might be much higher. Thus, TACIS<sup>12</sup> referring to calculations made in accordance with the methodology recommended by ILO, states the real rate of unemployment at about 5.3%.

Official monthly average wages and salaries of employees in December 1998 were as follows:

	(in sum)	(in U.S. dollar) US\$1 = 110 Sum
Republic of Uzbekistan	8,194.5	(\$ 74)
Tashkent Province	10,968.1	(\$100)
City of Tashkent	13,742.2	(\$125)

With the official exchange rate being 110 sum per 1 US Dollar as of December 31, 1998, the average wages and salaries in the areas presented above were about 74, 100 and 125 US Dollars, respectively at the end of 1998. However, it should be stressed that the above translation into US Dollars does not indicate that it can be realized in practice since the sum is not a convertible currency. According to TACIS<sup>13</sup>, in December 1998, the sum was actually 3.1 times weaker when exchanged into US Dollars in unofficial exchange markets compared to the official exchange rates.

#### **(14) Environmental Problems**

In December 1999, the National Environmental Action Plan (NEAP), which received financial assistance from the Swiss Confederation and the World Bank, was finalized and published.<sup>14</sup> According to NEAP, about half of the population of the country live in unsafe environmental conditions as a result of the economic activities, especially unsustainable agricultural practices for cotton, as represented by the Aral Sea crisis. Having put a higher priority on this issue, the Government of Uzbekistan considers it important to integrate environmental concerns into the process of general political, economic and social reforms which are presently being carried out in the country.

The key environmental problems are summarized as follows:

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<sup>12</sup> See *Economic Trends. Quarterly Issue. Uzbekistan. January-March 1999. TACIS, May 1999.*

<sup>13</sup> See *Economic Trends. Quarterly Issue. Uzbekistan. January-March 1999. TACIS, May 1999.*

<sup>14</sup> See *UZBEKISTAN: NATIONAL ENVIRONMENTAL ACTION PLAN 1998*

### **1) Insufficient Supply of Safe Drinking Water**

- The quality of the drinking water is often unsatisfactory. More than one-third of the population uses drinking water that does not meet national standards.

### **2) The Scarcity and Pollution of Water Resources**

- The main reasons for this are 1) poor irrigation practices in cotton farming; and 2) ineffective water resources management and the lack of incentives for water conservation. Increasing salinity of surface and ground water due to water drained from irrigated fields is the most serious problem forced in providing clean drinking water.

### **3) Salinization and Degradation of the Land**

- Soil salinity is one of the consequences of large-scale irrigation practices. Also, over-use of pesticides and fertilizers in the cotton fields and the subsequent contamination of the soil have resulted in contaminated food products. The high water table in Bukhara and Khiva threaten certain unique cultural monuments as well as buildings and the urban infrastructure. Protection of the country's cultural heritage is of high national and international significance.

### **4) Air Pollution in Large Cities and Industrial Centers**

- The ambient levels of air pollution in most cities demonstrate a high concentration of particulate, especially compared to WHO guidelines, with the highest levels registered in Navoi, Nukus and Tashkent. A recent sampling of children's blood indicated significant levels of lead among the groups of children exposed to lead emission. The increasing number of vehicles and the use of high-octane gasoline with lead additives will rapidly worsen the problem unless preventive measures are taken.

### **5) Municipal and Industrial Waste**

- Municipal garbage collection has been deficient in many cities especially in the most populated areas in Tashkent. Hazardous industrial waste and dumping sites for the mining industries are also issues of serious concern.

### **6) Desertification and Loss of Biodiversity**

- The main concern with respect to the loss of biodiversity in the country is the desertification of the Amu Darya delta, as well as the disappearance of aquatic and wetlands biological populations.

## 2.1.2 Transition to a Market Economy

### (1) Overview

The purpose of this section is to trace the institutional and legislative progress of the transition to a market economy. Starting in the 1980s, many countries began dismantling controls on the movement of capital and adopting a more favorable stance toward foreign direct investments (FDI). The government of Uzbekistan ( "GOU" hereinafter) initiated its economic reform process in the early 1990s by taking a "step-by-step approach" while maintaining the central government's strong leadership as well as traditional values and social stability in the country. Drastic economic and social changes entailed by the sudden and hastened introduction (like a "big-bang" market economy) adopted in certain formerly socialistic countries have been carefully and clearly avoided in Uzbekistan.

The structure of the central government has been reorganized since independence in 1991 to put the country under a market economy system and to implement privatization.

Major changes in the structure of the GOU are as follows:

- 1) Abolition of agencies under the old Soviet-style political system, and agencies only purposeful under a centrally planned economy;
- 2) Abolition of agencies engaged in the allocation of resources;
- 3) Priority in the improvement of communal services is in the rural areas.

The available economic indices show that, overall, the macroeconomic management after Uzbekistan's independence in 1991 has been successful when compared with the four neighboring CIS countries. Foreign direct investments in the country have been active; some structural reform

measures have been adopted and implemented; social peace and order have been well maintained; corruption among politicians and government officers has been insignificant, etc. However, certain problems and constraints which are yet to be addressed have been mounting. The foreign trade deficit, fiscal deficits, the protracted high level of inflation and delays progress towards the privatization of state-owned enterprises are generally recognized as the major issues. International organization such as IMF and ADB stressed that GOU needs to accelerate the pace of structural reform processes necessary to achieve competitive and efficient market-oriented economic and social system in order to ensure sustained medium- and long-term growth.

## **(2) Foreign Direct Investments**

Some foreign enterprises operating here disclosed their strong opposition to the law which currently requires them to sell 50% of their foreign exchanges (formerly 30%) obtained by exports into som, effective January 1999. The business environment in the country has become even worse by this law. The GOU needs to regain foreign investors' confidence by securing the sum's convertibility, which is generally expected within 2000. This is definitely the first priority among the many tasks to be addressed. Revision of the foreign investment rule and guarantees and measures for the protection of foreign investors' rights, as well as the disclosure of the proposed privatization list of state-owned enterprises would make Uzbekistan more investor-friendly. At the same time, development of a comprehensive, coherent, and internally consistent reform program is a matter of urgency.

Major legislative measures to promote privatization and the introduction of foreign capitals are listed and classified by purpose as follows:

### **1) Most Fundamental Law**

- Law on Denationalization and Privatization enacted on November 19, 1991 and amended on May 7, 1993 and September 23, 1994.
- Law on Foreign Investment enacted in 1994.

### **2) Orders Targeted at Accelerating the Pace of Privatization**

- - Presidential Decree on Measures to Promote Economic Reform Process dated January 1994.
- - Presidential Decree on Priority Direction of Further Development of Denationalization and Privatization in the ROU dated March 15, 1994.

### **3) Improvements of Business Environment**

- - Law on Property Rights effective September 1994; Company Law effective September 1994;
- - Bankruptcy Law effective May 1994; Law on Securities Business and Securities Exchanges enacted in 1993.
- - Creation of a securities market, an organization for the deposit of securities and state investment funds.
- - Revised Tax Code effective January 1, 1998.

### **4) Latest Legislative Changes**

- - Presidential Decree No. UP-1919 dated January 19, 1998 on Additional Measures for Stimulating Realization of Investment Projects.
- - Law No. 609-I dated April 30, 1998 on Foreign Investments.
- - Law No. 611-I dated April 30, 1998 on Guarantees and Measures for the Protection of Foreign Investors' Rights.
- - Presidential Decree No. 477 dated November 18, 1998 on Measures to Encourage the Attraction of Foreign Capital in the Course of Privatization of State Property.

### **(3) Communal Services Reform**

In the areas of fiscal and communal services reform, it is understood that the GOU decided to tackle fiscal and legal reforms sometime in 1993. The GOU's commitment to fiscal reform is represented in Resolution of the Cabinet of Ministers No. 363 dated July 7, 1993 on Transition to the Contract System for the Settlement of Accounts for the Maintenance and Servicing of Housing, and Resolution of the Cabinet of Ministers No. 54 dated February 7, 1994 on Step-by-Step Transfer to Self-Supporting Communal Services, which aimed at eliminating subsidies not only to its industries,

but also, in variety of forms, to its people in genera. The elimination of subsidies has resulted in legal reforms of state-owned enterprises and communal services. These were either privatized or denationalized and, at the same time, both are now required to be managed using their own financial resources and this concept is reflected in the Presidential Decree on the Improvement of Municipal Services dated July 15, 1993. The process of reform of the legal foundations and of communal services has been described in detail in Section 2.2.

Reorganizations of the central and local governments, communal service utilities and enterprises (both state-owned and private) are equally important, together with the related legislative measures, for the people of Uzbekistan to adjust to a market economy. Also, the people as a whole need to change their minds to be receptive to the new economic system and the on-going reforms. Reforms in communal services, especially the water sector and the development of financial discipline and self-supporting of water services are definitely high priority objectives of the reform process.

The major issues to be addressed for the improvement of sector management will be the rationalization of the water tariff, both for the water supply and the sewerage system, and an acceleration of the transfer to a metered rate system from a fixed tariff. Reformation and rationalization of these organizations, including the line ministries and local governments, and the related legislative measures are still under implementation.

#### **(4) Individual Users Concerns about Communal Services**

Traditionally in Uzbekistan, most communal services and infrastructure facilities had been provided either free of charge or at highly subsidized rates, especially during the era of the Soviet Union. Improving the efficiency of the public sector, especially public utilities, and introducing cost recovery are key challenges in the short- to medium-term in the country.<sup>15</sup> In general, these two challenges are the priority issues in any economy in transition, where the transition from a socialistic system to a market economy is pursued with the highest priority not only as economic policy, but also as a political one. These challenges are equally important in developing countries, where the transition from government-led economic development to privatization and in the participation

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<sup>15</sup> The World Bank Project Appraisal Report on Tashkent Solid Waste Management Project

private sector is pursued because of the scarcity of the government's financial resources. One inevitable result of these measures in these countries is an increase in tariffs. (Refer to Project Appraisal Report of World Bank on Tashkent Solid Waste Management Project.)

As tariffs for communal services have increased in Uzbekistan, especially over the last couple of years, the users appear to be getting more concerned about the quality of the respective services. This is supported by the results of a Questionnaire Survey conducted by the JICA Study Team in 1999. In Question No. 13 for individual users asks about areas for improvement of the water supply. 72% out of the respondents in Tashkent City replied that the quality of water supply services should be improved. Keeping the water level safe for health – 44%; stable water supply – 28%. Reduction or improvement of the current water tariff followed, but it got only 18%. In Chirchik City, 82% requested quality improvement more than other items: the former – 50%; the latter – 32%. Reduction or improvement of the current water tariff got only 16%. Quality improvement is the priority with regard to repair services as well. Tashkent City – 60%; Chirchik City – 55%. The replies to Question No. 5 about the need for disclosure of the cost components and an improvement of the operating efficiency of the Vodokanal - 88% in each city responded with “Yes” - again showing increase with interest of the people in communal services.

### 2.1.3 Summary of Socioeconomic Conditions

Among the five CIS countries in Central Asia, Uzbekistan has been regarded as having the highest potential for development because of its large population and its industrial base of electrical, machinery and airplane industry, in addition to its natural resources of oil, gas, gold and other rare metal and jewels. Despite the concerted efforts of the government to promote economic reform and privatization since its independence in August 1991, progress in privatization and liberalization had lagged behind that of the neighboring CIS countries. At the same time, Uzbekistan has faced the challenges of macroeconomic management.

As the Law on Denationalization and Privatization dated November 19, 1991 defines, Uzbekistan adopted a strategy aimed at bringing about step-by-step changes and creating an efficient, socially oriented, free market economy. It rejected the “Big Bang” approach and instead opted for a gradual

approach to transition and structural reforms. Due to this lag in the implementation of measures to open its markets, and its inefficient legislative and institutional structure, more and more enterprises already operating in Uzbekistan, as well as potential foreign investors are looking to other countries such as Kazakhstan. One significant problem for foreign investors is the insufficient and unsecured currency convertibility of the local currency, the sum, to hard currency. According to the Asian Development Bank, 200 foreign companies left the country in the last two years. Other sources say that 17 US companies closed their offices or plants last year. Some of them are said to have moved to neighboring Kazakhstan, where currency convertibility is secured and the demand for imported goods is strong. Since 1998, however, additional measures have been introduced to speed up the privatization of state-owned enterprises and to accelerate the inflow of foreign capital. These measures are expected to continue to be a priority to the economic development of the country.

Substantial macroeconomic stability was achieved in 1998. Inflation (CPI yearly change) was 25.9%, under 30% for two years in a row; 27.6% in 1997. This represents a major step forward toward macroeconomic management. The government budget deficit remained stable at less than 3% of the GDP. External trade was almost balanced, although this was largely due to import contraction. The GDP growth rate was 4.4%, which continued to be relatively high in the midst of a sluggish economy worldwide, especially following the Russian crisis which started in August 1998. The economic recovery is reportedly going on in 1999. The industrial output in the first half of 1999 rose by 5.6% over the same period in 1998, while it was down by 10.0% in the Kyrgyz Republic and by 4.1% in Kazakhstan. (World Bank "Transition," August 1999)

The Government of Uzbekistan must prove to the people of the country and to the world in the not too distant future that they can build a newly restructured society and yet retain their old character. There is still a long way to go to achieve these goals.

#### **2.1.4 Socioeconomic Conditions in the Study Area**

##### **(1) Tashkent City**

The City of Tashkent (hereinafter referred to as "Tashkent" or the "City") is the capital of Uzbekistan. It is the industrial, scientific and cultural center of Uzbekistan with about a two-

The City of Tashkent (hereinafter referred to as "Tashkent" or the "City") is the capital of Uzbekistan. It is the industrial, scientific and cultural center of Uzbekistan with about a two-thousand year history. Tashkent has a population of 2.2 million<sup>16</sup> and occupies a territory of 340 sq. km. The City is divided into 11 administrative regions ("rayons").

The number of people engaged in economic activity in Tashkent is 990 thousand. Tashkent's contribution to the total GDP of Uzbekistan is about 14%, which is more than that of any province of Uzbekistan, as indicated in Table 2.1.12.

**Table 2.1.8 Gross Domestic Products by Region**

	Billion Sums (%)	% to 1997
Republic of Uzbekistan	1,358.8 (100)	104.4
out of:		
Republic of Karakalpakstan	44.2 (3.2)	98.3
Andizhan	96.4 (7.1)	106.0
Bukhara	75.3 (5.5)	110.2
Djizhak	32.3 (2.4)	107.5
Kashkadarya	94.4 (6.9)	105.9
Navoi	47.6 (3.5)	100.8
Namangan	58.3 (4.3)	100.4
Samarkand	100.2 (7.4)	107.6
Surkhandarya	63.0 (4.6)	109.7
Syrdarya	29.6 (2.2)	106.1
Tashkent	121.8 (9.0)	104.9
Fergana	127.5 (9.4)	97.4
Khorezm	63.5 (4.7)	105.8
City of Tashkent	191.7 (14.1)	95.6

(Source: The Basic Indicators of Social and Economic Development of Uzbekistan in 1998)

It should be mentioned, however, that the GDP of Tashkent decreased by 4.4% in 1998. Moreover, the gross value added by the goods and services produced in the city dropped significantly, with the exception of construction, which grew marginally in 1998. This drop was compensated somewhat by an increase in net taxes on products and export-import operations, which resulted in a significant

<sup>16</sup> All statistical data in this chapter are based (unless a different source is mentioned) on official data contained in *The Basic Indicators of Social and Economic Development of the Republic of Uzbekistan in 1998. Tashkent, May 1999* or provided directly by Departments of Statistics of the City of Tashkent and of Tashkent Province.

increase in the share of these taxes in Tashkent's GDP, which rose 30.5% in 1998 from 22.9% in 1997.

Structure GDP of Tashkent City is shown in Table 2.1.9.

**Table 2.1.9 Structure GDP of Tashkent City**  
(million Sums; in current prices)

	1998	(%)
Total GDP incl. taxes	191,661.9	100.0
Taxes	58,531.5	30.5
GDP without taxes	133,130.8	-
Industry	32,969.2	17.2
Construction	24,037.0	12.5
Trade and Food Industry	28,630.3	14.9
Other Material Production	24,921.4	13.0
Non Production Sectors	22,572.2	11.8

(Source: Tashkent City)

Machinery and metal industries, included in Industry sector in Table 2.1.9 above, accounts for 35.6% of the total volume of industrial production in Tashkent. Other major sectors are: food industry 24.3% and light industry 11.1%.

About 37.6 thousand enterprises (including public services providers) are registered in Tashkent, which is about 20% of all enterprises registered in Uzbekistan. A breakdown of these enterprises by sector and by size is presented in the table below:

Table 2.1.10 Industrial Composition of Tashkent City

Sector	Total	Large	Middle	Small	Very Small
Industry	6,743	312	369	1,905	4,157
Agriculture and forestry	344	45	26	53	220
Transport and communication	657	240	34	92	291
Construction	4,459	455	752	920	2,332
Wholesale	5,490	76	550	1,838	3,026
Retail trade and catering	12,209	837	1,429	3,208	6,735
Logistics	487	98	36	82	271
Procurement	97	11	6	20	60
Information technology	151	23	6	24	98
Real estate	104	6	5	15	78
Other commercial activities	1,259	49	52	177	981
Geological exploration	73	17	4	14	38
Other production	274	36	28	64	146
Housing & municipal economy	273	164	46	22	41
Sundry services to population	379	57	58	114	148
Medicine	880	271	112	198	299
Education	423	210	54	64	95
Culture	530	110	77	148	195
Science	911	219	125	253	314
Finance	327	109	51	68	99
Management	910	233	52	51	574
Public organizations	625	103	121	175	226
Total in Tashkent	37,615	3,681	3,994	9,505	20,434

(Source: Board of Statistics of Tashkent City)

Machinery and metal industries (included in the Industry sector in the table above) account for 35.6% of the total volume of industrial production in Tashkent. Other major sectors are: food industry - 24.3% and light industry - 11.1%.

Even though the percentage of the number of state-owned enterprises operating in Tashkent is the lowest in Uzbekistan (only 7.4%), state-owned enterprises employ 36.6% of the people engaged in the City's economy. It appears that the concentration of large companies still owned by the state is very high in Tashkent, especially in the sector of public services to the general public.

There are 1,434 joint ventures operating with foreign capital in Tashkent, which is more than 70% of all joint ventures in Uzbekistan.

According to the official statistics, about 25% of the investment activities in Uzbekistan in 1998 are carried out in Tashkent. The share of FDI in Tashkent was even higher and accounted for about 40% of the total FDI in Uzbekistan.

The balance of external trade of Tashkent is negative. The City's imports exceed three times its exports.

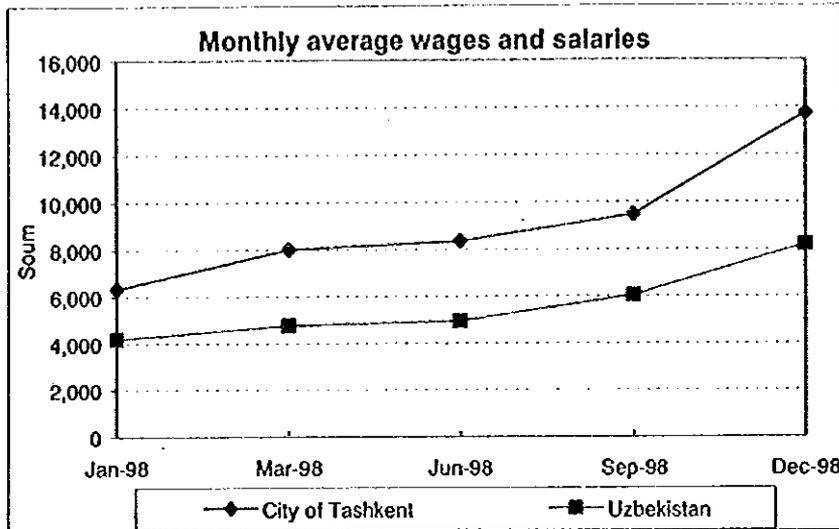
The production of user goods production in Tashkent in 1998 decreased from that of 1997. The retail trade turnover in Tashkent increased, however, by 10% in 1998 (in comparable prices) and accounted for 27% of the total for Uzbekistan, i.e., exceeding three times the average level per capita.

Consumer goods production per capita in Tashkent in 1998 was Sum 36,172.9, which is a decrease of 2% compared to 1997. Retail trade per capita in Tashkent was Sum 88,063, which is an increase of 9% in 1998 (in comparable prices).

For fiscal year 1998, about 492 thousand sq.m of residential buildings and schools for 2,800 pupils were put into operation. In total, about 24% of the total volume of construction work in Uzbekistan was in Tashkent.

The average wages of salary of employees in Tashkent was 8,902 soum in 1998. The comparison of the monthly average wages and salaries in Tashkent City with the average figures for Uzbekistan is presented in the following graph. In 1998, Tashkent was about 70% higher than the average.

Figure 2.1.1 Monthly Average Wages and Salaries



(2) Chirchik City

The City of Chirchik ( "Chirchik" hereinafter), with a population of about 145 thousand, is a medium-size city located in Tashkent Province about 20 km north-east from the City of Tashkent. Chirchik was founded in 1935 and its the 60th anniversary was celebrated in 1995. Nowadays Chirchik can be easily reached from Tashkent by car or by local train.

The table below provides a comparison of Chirchik with other cities and rural regions of Tashkent Province:

**Table 2.1.11 Regions in Tashkent Province**

Cities and rural regions	Territory (thousand sq.km)	Population (thousands)
Total Tashkent Province	15.30	2,341.2
<i>Of which:</i>		
<i>(Big Cities)</i>		
Almalyk	0.10	115.4
Angren	0.11	129.9
Bekabad	0.03	85.4
Chirchik	0.03	145.3
Yangiyul	0.01	58.8
<i>(Rural Regions)</i>		
Akkurgansky	0.40	82.8
Ahangaransky	3.18	74.7
Bekabadsky	0.75	123.9
Bostanlyksky	4.93	140.7
Bukinsky	0.59	98.2
Zangiatsinsky	0.23	141.5
Kibrajsky	0.56	153.8
Kuyichirchiksky	0.56	93.8
Parkentsky	1.08	106.8
Pskentsky	0.79	83.2
Tashkentsky	0.17	126.8
Urtachirchiksky	0.49	153.0
Tchinazsky	0.34	110.1
Yukorichirchiksky	0.44	107.0
Yangiyulsky	0.42	148.5

- Note: A "Big City" is a city with a population of more than 50 thousand.
- Source: Tashkent Province General Dept. of Economic Statistics

Chirchik is a multinational city which, according to the Hokim<sup>17</sup> of Chirchik, has 72 nationalities living there. The majority of the population speaks Russian (about 48%). For this reason, Russian is often used as the working language in Chirchik. The Uzbek language remains, however, the official language as everywhere else in Uzbekistan despite the fact that it is the native language for only about 20% of Chirchik's population. The other significant ethnic groups living in Chirchik are: Kazakh 8%, Tajik 4% and Tatar 4%.

<sup>17</sup> The Mayor

The industrial production of Chirchik is dominated by five big production plants, which were relocated there from other regions of the former Soviet Union during World War II.

These plants are:

- 1) Elektrohimprom - chemical industry, with approximately 8 thousand employees,
- 2) UzKTZhM - metallurgical industry,
- 3) Uzbekchimmash - machinery for the chemical and the oil & gas industry (turbo-compressors, pumps, heat-exchange equipment, etc.) and also user goods, with 1.4 thousand employees; 25% state-owned,
- 4) Chirchikselmash - agricultural machinery, and
- 5) Transformatorny Zavod - machinery for the electrical industry.

The number of persons engaged in economic activity in Tashkent Province is about 882 thousand, with about 80 thousand of them living in Chirchik. About one-fifth of Chirchik's labor force works for the five plants mentioned above. It should be mentioned that these plants still have an obligation to support those objects of Chirchik's social infrastructure (residential houses, kindergartens, medical institutions, etc.) which were allocated to them during Soviet times.

In total there are 26 large and medium-size industrial companies operating in Chirchik (of the total 227 in Tashkent Province), with only 7 of them remaining, according to official statistics, state-owned, and 13 having the legal form of joint stock companies. Ten joint ventures (out of 107 in Tashkent Province) with foreign capital, such as former Soviet Union countries, Germany, USA, Turkey and China, are registered in Chirchik. Also, there are about 1,000 small companies of different legal forms in Chirchik operating in different sectors of the economy. It appears that, despite the work force cuts which have taken place at the bigger production plants, unemployment has not become a serious social problem in Chirchik due to the development of small businesses.

Similar to the situation in other regions of Uzbekistan, 43 non-governmental public organizations or "Mahallynskye committees" have been established in Chirchik, which are starting to play a more

active role in assisting the Hokimyat<sup>18</sup> of Chirchik to solve its day-to-day problems, including collecting the fees for communal services.

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<sup>18</sup> The Mayor's office

## **2.2 Institutional and Management Aspects of Water Supply Services**

### **2.2.1 Legal Foundation**

#### **(1) Legal Basis of Sector Reform**

The current administrative structure and the system of communal services in the country have been defined and given their legal basis by the following two batches of regulations.

(Note: For an understanding of the legislative structure of Uzbekistan, refer to the following notes.)

1) Presidential Decree No. UP-617 dated July 15, 1993 on "Improvement of the Management of Municipal Services in the ROU;"

Resolution of the Cabinet of Ministers No. 371 dated July 22, 1993 on "Issues of Organization and Activities of the Ministry of Communal Services;" and

Order of the Ministry of Housing and Communal Economy No. 100 dated July 29, 1993.

2) Resolution of the Cabinet of Ministers No. 211 dated April 25, 1997 on "Measures for the Improvement of Communal Services for the People under a Market Economy;" and

Resolution of the Cabinet of Ministers No. 461 dated November 3, 1998 on "Concept of Strengthening Economic Reform in Communal Services."

Presidential Decree No. UP-617 dated July 15, 1993 above initiated the reform movements to raise the role of local authorities and outlined improvements in the quality of communal services. It should be noted that the latter issue was seen as inevitable when the country embarked on the road to the privatization of state housing and a full-fledged transition to a market economy, with self-supporting communal services. Issues relating to the transition to self-supporting communal services are discussed in 2.2.3.

The ensuing Resolution No. 371 laid the practical foundation for the former issue by constructing an administrative structure for communal services. The following points in Resolution No. 371 are closely associated with the new administrative structure:

- 1) The liquidation of Uzvodokanal;
- 2) The establishment of the TCMA's and approval of their standard structure;
- 3) The TCMA's shall be subordinated to the Ministry of Communal Services and their Hokimiyat, and the city/provincial Vodokanals shall be subordinated to the TCMA's and their Hokimiyat; (each TCMA itself is subordinated to the Hokimiyat, and therefore each Vodokanal is indirectly subordinated to the Hokimiyat)
- 4) The heads of the TCMA's shall be appointed by the Ministry of Communal Services on the introduction of the corresponding Hokim, and the heads of subdivisions of the TCMA shall be appointed by the head of the corresponding TCMA on the introduction of the corresponding Hokim;
- 5) The head of each TCMA shall be a Deputy Hokim; and
- 6) A description of the role of the Ministry of Communal Services.

Order of the Ministry of Housing and Communal Economy No. 100 declared that the Ministry of Communal Services shall be considered the successor to the Ministry of Housing and Communal Economy; it ordered that the TCMA to be established in the provinces and Tashkent City. The Order also outlined the main responsibilities and directed of the activities of the Ministry of Communal Services, which are summarized in 2.2.2.

It should be noted that the transition of the servicing and maintenance of state housing to a self-supporting business was implemented in parallel with other communal services. With the purpose of providing detailed orders and implementing the related measures, the Order of the Ministry of Housing and Communal Economy No. 99 dated July 23, 1993 on "Transition to a Contract System for the Settlement of Accounts for the Servicing and Maintenance of Housing Funds" was issued.

Note: Legislative Structure of Uzbekistan

1. Codes
2. Legislative acts consisting of: Laws passed by the Oliy Majlis as well as any changes and amendments to these laws.
3. Presidential Decrees
4. Resolutions of the Cabinet of Ministers

5. Normative acts: Instructions, orders, and ordinances of different ministries, state executive bodies or organizations issued with the aim of implementing the enacted laws.

#### **1) Acceleration of the Reform Process**

On the basis of the slow progress and unsatisfactory results of the reform process since 1993, Resolution of the Cabinet of Ministers No. 211 was prepared with the clear intention to speed up the reform of communal services by providing the necessary conditions and creating a competitive environment for an effectively functioning market economy. It was pointed out that a full realization of the targets envisaged in Resolution No. 211 was dependent upon the implementation of these measures. The major points in the Resolution are summarized as follows:

- i) Previous activities conducted by the related ministries and agencies have been unsatisfactory;
- ii) Measures to improve the system for the maintenance and repair of housing must be implemented during 1997;

The transition of KEU and JEK to self-supporting organizations was envisaged;

- iii) The Ministry of Communal Services jointly with the other related ministries must develop legislative measures by the end of 1997 to maintain housing and communal services economically as well as on a self-supporting basis. Employees engaged in certain communal services were to be transferred to a contract system for payment for each individual job;

- iv) When approving the tariffs on the housing and communal services, Hokimiyats of provinces and Tashkent City must follow the guidance of existing rules about cost composition and steady cost reduction;

The Committee on demonopolization and the development of competitiveness under the Ministry of Finance must provide systematic controls over decisions on tariffs for communal services, giving attention to the specific rationale for each branch of services.

## **2) Resolution No. 461, Providing Basic Directions for the Reform of Communal Services**

One of the objectives of Resolution No. 461 was to implement the decisions adopted by Resolution No. 211. As noted in its introductory note, it also confirmed the concepts envisaged in Resolution No. 211 concerning the improvement of the quality of communal services and a step-by-step realization of the privatization of these services with diversified ownership of the enterprises in this sector in a competitive business environment. Resolution 461 represented the government's intention to strengthen and accelerate the process of economic reform in this sector.

The major tasks associated with the water supply sector were noted in Article 3 of the Resolution. These are summarized as follows:

i) The Council of Ministers of the Republic of Karakalpakstan, at the Hokimiyats of the provinces and Tashkent City within 3 months:

- develop complex regional programs for the reform of communal services on the basis of the concept of strengthening the economic reform of the system of communal services;

- determine the borders of the pre-housing territories serviced at the expense of the owners and holders of apartments in multi-story buildings up to the end of 1998 and also determine the parameters for the self-supporting housing and operational organizations and the users of land plots, and their mutual relationship for the joint maintenance of these plots;

- take practical measures to strengthen logistical basis for housing and operational organizations, and on this basis complete their transition to being fully self-supporting by the end of 1998;

complete work on the installation of recording and regulatory devices for the consumption of heating supplies, gas and water on the leads-in to all multi-story residential buildings until the year 2000. Jointly with the Ministry of Finance, determine the sources of financing for these projects.

ii) The Ministry of Communal Services within 2 months shall:

- develop jointly with the Ministry of Finance and the Ministry of Macroeconomics and Statistics, the Council of Ministers of the Republic of Karakalpakstan, and the Hokimiyats of the provinces and Tashkent City, a state program up to the year 2005 for the overhaul of public sites and facilities of residential buildings which were built before 1991, taking into account the determination of the sources of financing and their transfer, after repair, to full maintenance by the owners of the apartments;

## **(2) Major Thrusts by the Ministry of Communal Services**

The most urgent and challenging tasks at the moment for the Ministry of Communal Services in the water sector are understood to be: 1) an improvement of water supply in rural areas, 2) an acceleration of the installation of water (and gas) meters in private houses and apartments. The following regulations have been issued as proactive responses to these challenges:

### **1) Improved Administration of Water Supply**

- Resolution of the Cabinet of Ministers No. 185 on "Approval of Regulations on Installation of Water and Gas Meters in Houses and Apartments and Social and Cultural Objectives" dated May 26, 1995.

- Resolution of the Cabinet of Ministers No. 462 on "Improvement of Settlements with the General Public for Communal Services and Electro-energy" dated November 4, 1998.

- Resolution of the Cabinet of Ministers No. 280 on "Measures for Providing Houses and Apartments with Water and Gas Meters and Production in the Republic of Uzbekistan dated June 1, 1999.

## **2) Development of Water Supply in Agricultural Areas**

- Resolution of the Cabinet of Ministers No. 117 on "Program to Supply the Agricultural Population with Drinking Water and Natural Gas from 1998 to 2000 dated March 17, 1998.

- Under Decree No. 117 dated March 17, 1998 on "Transformation of the Agrovodokanals to the Ministry of Communal Services," Agrovodokanals which were under the control of the Ministry of Agriculture and Water Resources were transferred to the control of the Ministry of Communal Services. This transfer was to be finalized by the end of September 1999.

- Resolution of the Cabinet of Ministers No. 278 on "Measures for the Further Improvement of the Water Supply and Natural Gas Supply to Agricultural Areas" dated June 1, 1999. This Resolution targeted improving the status of water and gas supply in rural areas. To realize these objectives, the Ministry of Communal Services was to prepare water supply layouts for the year 2010, so that 85% of the projected level of water supply to rural areas can be achieved by 2005. For gas supply, the corresponding target was 82%. The Ministry of Communal Services and Ministry of Finance set up an annual investment program and established financing sources including foreign investments, soft loans, and grants. The structural transformation in governing the water supply sector must be carried out through the transfer of the current departments to the authority of the TCMAAs.

### **2.2.2 Overall Sector Administrative Structure**

#### **(1) Ministry of Communal Services**

As briefly explained in 2.1.1, President Decree No. UP-617 dated July 15, 1993 on "Improvement of the Management of Municipal Services" initiated a reorganization of related ministries and agencies of the central government in order to improve water sector administration. To implement the objectives stipulation in this decree, Resolution of COM No. 371 dated July 22, 1993 "The organization and Activities of the Ministry of Communal Services" was issued, which defined the current administrative structure of communal services as described in Appendix 3.1.1. The figure indicates that the area-wide administrative structure of

the ministry was split into four areas: the provinces, Tashkent City, the inter-regional pipelines and the Republic of Karakalpakstan.

### 1) Major Roles of the Ministry

With the reorganization of the sector, major roles of the Ministry of Communal Services were reduced to the overall coordination of the sector and the provision of technical assistance to the sector agencies. A detailed description is provided in the Order of the Ministry of Housing and Communal Economy (the predecessor of the MCS), No. 100 dated July 29, 1993. There are briefly summarized as follows:

“ ... the main tasks and direction of the activities of the ministry shall be the following:

- formation and implementation of state policy in the sphere of the use of and provision of security for housing services, and the development of communal services in the Republic;
- development of concepts, prospective programs and schemes for the development of communal services for the full satisfaction of the needs of the population;
- implementation of an intergrated scientific and technical policy, studying and sharing the experience of other states in the issues of design, construction and operation of communal objectives;
- oversight of complex decisions on such issues as the design, construction, repair and maintenance of the engineering constructions networks (water pipelines, sewerage services, heating and gas supply);
- assisting enterprises and organizations entering into the Ministry's overall plan in their transition to a market economy and in their step-by-step transformation into joint-stock companies, collectives, and leasing and other organizational and legal forms.”

## **2) Functions of the TCMA's and the Water Service Utilities**

Order No. 100 also stipulates that the Ministry provide communal services to the population on a contract basis through the TCMA, and that the Ministry shall be responsible for the centralized budget for the funding of capital investments. Order No. 100 also outlines the rationale for the maintenance and development of communal services in the country. The legal and institutional bases of the TCMA's in Tashkent City and Tashkent Province and their respective sector management structures are described later.

The responsibility for day-to-day services and their related administration now fall under the authority of the local governments (the "Hokimiyats") and their related agencies. A legislative analysis of Resolution No. 371 is included in 2.1.1. As shown in the figure, the Ministry of Communal Services directly controls six interregional water service providers in the country, in particular, the development of the interregional water pipelines. The provincial governments and Tashkent City, on the other hand, are responsible for the overall communal services in their own territories. In terms of developing the policy and planning aspects of these sectors, the Ministry of Communal Services undertakes the overall coordination function.

## **(2) Development of and Budget for Public Works**

The Ministry of Macroeconomics and Statistics is responsible for the overall investment plan of public works and for the distribution of the funds, while the Ministry of Finance is responsible to develop the plans for budgeting and financing.

In principle, public works investments in the water sector in urban areas have been implemented by the central government. In agricultural areas, residents and enterprises bear their share of investment costs. They bear 30% of the cost of investments in the water supply network, whereas the purification and water treatment plants are built by the central government.

The program for water sector development through 2005 is now being reviewed to extend this into a longer-term program with the target year of 2010. In its planning process, the local governments

and the related agencies, both local and central, prepare their individual drafts and the Ministry of Macroeconomics and Statistics completes the final program. The Ministry recognizes the water supply sector as a priority sector among all public works and communal services; in particular, the supply of water to agricultural areas is deemed significant and is given a high priority. The following decree and resolution comprise the related legislation:

- 1) Presidential Decree No. 117 dated March 17, 1998 on "Transformation of the Agrovodokanals to the Ministry of Communal Services"; and
- 2) Resolution of the Cabinet of Ministers No. 278 dated June 1, 1999 on "Measures for the Further Improvement of the Water Supply and the Natural Gas Supply to Agricultural areas."

### **(3) Merger of Agrovodokanals and Vodokanals**

The provincial Agrovodokanals responsible for the water supply and sewage services in rural areas and the provincial Vodokanals were merged to form the new provincial Vodokanals on October 1, 1999 in accordance with Resolution of the Cabinet of Ministers No. 117 dated March 17, 1998 on "Program on Supply the Agricultural Population with Drinking Water and Natural Gas for the Period from 1998 to 2000." The Uzagrovodokanal, which used to control all the Agrovodokanals in the country, has been dismantled. The related section in the resolution concerning the merger of these two organizations is quoted below:

9. "The Ministry of Communal Services and the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan within 3 months shall prepare and submit to the Cabinet of Ministers proposals on the creation of a single service for the drinking water supply operation in the Republic of Karakalpakstan and the provinces."

The overall water sector administrative structure starting from October 1, 1999 is presented in DATA 2-2-2. The responsibility for the operation and maintenance of the irrigation canals will remain under the control of the Ministry of Agriculture and Water Resources.

#### **(4) Housing Maintenance Office (JEK)**

The City of Tashkent is divided into 11 administrative districts. There is a Communal Maintenance Board in each district, commonly called "KEU," which is subordinated to TCMA of the City of Tashkent. KEU provides management of the Housing Maintenance Office, commonly called "JEK." On the average, 8 to 10 JEKs are subordinated to under each KEU. This means that each JEK is responsible for providing repair and maintenance services to about a hundred of blocks of apartment buildings. Another function of the JEKs in Tashkent City is tariff collection under contract with the Vodokanal. Based on the terms and conditions of the contracts, the Vodokanal pays 54% of the amount collected to JEK/KEU, of which 50% is technical compensation for repair and maintenance services and the collection of the fees, and the remaining 4% is handling commission payable to the banks. This will be detailed in Section 3.3.2. On the other hand, in Chirchik City, the JEKs are not currently involved in the tariff collection process. JEKs can receive approximately 25% of the tariff collected by Chirchik City Vodokanal on a contract basis. The percentage may vary according to the contract between each JEK and the Chirchik Vodokanal.

JEK is a kind of enterprise responsible for providing communal services to the residents living in apartment blocks. Each block of apartments is assigned to a certain JEK. Thus, JEK is responsible for repair and maintenance work in the buildings, for the water, heating, gas, and electricity supply and for other similar communal service, and the tariff collection. The responsibility of JEK with regard to repair and maintenance are limited to work inside the buildings, whereas the responsibility for maintaining the water supply service outside remains with the Vodokanal.

#### **(5) Mahallinskye Committees**

The Mahallinskye Committees (or the "Committees") have existed all over Uzbekistan as community organizations for a long time. Their present status is based on a law entitled "On Institutions for the Self-Governance of the Citizens" dated April 14, 1999. Recently an additional function has been given to the Committees by the central and local governments regarding the collection of fees for communal services. The above law outlines the rights and responsibilities of

these Committee, which act as executive bodies and are elected at general meetings of the residents of the respective districts.

According to the Tashkent Province TCMA, the Committees and the Councils of House Owners are distinctly different institutions. The establishment and role of the Councils were defined in a recently issued Resolution of the Cabinet of Ministers No. 462 dated November 4, 1998. The Councils residue purely technical issues for their respective buildings (e.g. developing plans for repair work), whereas the Committees have much wider rights and responsibilities and cover larger territories.

Amongst other tasks, the Committees participate in collecting the communal fees (they customarily review the lists of outstanding fees, talk to delinquent payers and explain the importance of timely payments to them, etc.).

The role of the Committees in collecting communal fees is regulated by "Regulations for Stimulating Institutions for the Self-Governance of the Citizens by Providing Full Payment by Population for Housing and Communal Services" issued by the Ministry of Finance, the Ministry of Labor and the Ministry of Communal Services No. 683 and registered with the Ministry of Justice on March 30, 1999.

According to the above regulations, the Committees are entitled to a bonus of 10% of the fees collected in their respective territories if from 75% to 100% of the communal fees are collected. If the actual collection is 100% or more, the bonus is 20%. Of the bonuses obtained, the Committees are obliged to spend 60% on subsidies to poor families to pay their outstanding communal fees. The Committees can spend the remaining 40% for their own needs.

There are 43 Mahallinskye Committees in Chirchik. They have a proven record of contribution to the tariff collection from the residents, especially in the area of poor families. But, as Vodokanal officials commented to the Study Team, unless all workers in the city can receive their salaries, it will be difficult for Vodokanal to reduce incidents of non-payment or overdue accounts any further.

### 2.2.3 Transition to Self-Supporting Water Service Utilities

In accordance with the direction set by the Presidential Decree No. UP-617 dated July 15, 1993 and the Resolution of the Cabinet of Ministers No. 363 dated July 17, 1993, the Resolution of the Cabinet of Ministers No. 54 dated February 7, 1994 on the step-by-step transition to self-supporting communal services was issued to proclaim "the transition to a new settlement system providing that the expenses for communal services be covered at the expense of the owner and leaseholder and shall be accomplished step-by-step from April 1, 1994 by annually reducing the level of the subsidy by 10% on average". The subsidy rate, which is currently 60%, is expected to be reduced by 10% annually until it reaches to 0% in 2003. Resolution No. 54 approved the work of the related ministries on the creation of normative acts and the legal basis for a step-by-step transition to self-supporting housing and communal services.

The self-supporting nature of housing and communal services was further provided in the Resolution of the Cabinet of Ministers No. 271 dated July 30, 1996. It should be noted, however, that Article 3 of Resolution No. 271 stipulates the necessity of social security measures including targeted subsidies even during the transition towards self-supporting operations. This represents the government's consideration for the poor and vulnerable families and for a selected group of people, as detailed in 4.5.

The costs for the installation of the water meters are required to be fully paid by the residential users, as defined in the Resolution of the Cabinet of Ministers No. 185 dated May 26, 1995.

An increase in water tariffs and the installation of water meters seem to have been the targets selected from among several alternative measures for improving the financial position of the Vodokanal and for enforcing its capability for effective management of Tashkent City's water service utilities. These measures would definitely affect both sides: an improvement of the cost recovery ratio on the Vodokanal side and an increase in the amounts billed, especially to the residential users, on the consumer side. It must also be noted that the water tariffs charged to industries and other users except for the residential users will not decrease on account of the increase in the tariff imposed on the residential users.

## 2.2.4 Transition to a Metered System

### (1) Meter Installation Program

Meter installation programs have been adopted in Uzbekistan as one of the means for achieving a step-by-step transfer to self-supporting communal services and in a market economy. The following two resolutions were issued to establish a legal basis for implementing the meter installation programs.

1) Resolution of the Cabinet of Ministers No. 185 dated May 26, 1995 on "Approval of Regulations for the Installation of Water and Gas Meters in Houses and Apartments" and "Objectives of Social and Cultural Significance.

2) Resolution of the Cabinet of Ministers No. 461 dated November 3, 1998 on "Approval of the Concept of Further Reforms in the System of Communal Services for the Population."

In the initial year of the installation program, Vodokanal officials appeared to be rather concerned about the implementation. Tashkent City Hokimiyat issued te Hokim's Decision No. 111 dated February 23, 1999 on "Tariff Changes for Cold Water Supply and Seweage Services and Installation of Equipment for Metering Drinking Water "as their own program. Later, however, Resolution of the Cabinet of Ministers No. 280 dated June 1, 1999 on "Measures for Providing Houses and Apartments with Water and Gas Meters and their Production" ordered the related organizations (Hokimiyats, TCMA's, Vodokanals and others) to ensure execution of the installation programs for the years 1999 to 2004, as provided in the Appendices to the Resolution.

The detailed meter installment schedule for Tashkent City provided in the Appendices to Resolution No. 280 is summarized below:

- Number of apartments (houses) with centralized water supply - 550,270
- Meters installed as of February 1, 1999 - 2,800
- Meters to be installed - 547,470, yearly breakdown shown below:

**Table 2-2.1 Meter Installation Program of Tashkent City**

<b>Meter</b>	<b>Yearly Distribution</b>					
<b>Total number to be installed</b>	1999	2000	2001	2002	2003	2004
547,470	18,460	28,000	58,000	100,000	128,000	215,010

Tashkent City Vodokanal disclosed that 180 families living in apartments have their own separate meters installed as of the date of this report.

For the city of Chirchik, the detailed installation program is outlined in the Hokim's Decision of Chirchik City No. 250 dated April 26, 1999 on "Meter Installation in Private Houses and Multi-story Apartments." The related laws and regulations previously issued are: 1) Resolution of the Cabinet of Ministers No. 185 dated May 26, 1995; 2) Resolution of the Cabinet of Ministers No. 461 dated November 3, 1998; and 3) the Tashkent Province Hokim's (Governor) Decision No. 64 dated February 26, 1999. The detailed meter installation schedule for Chirchik City provided in Hokim's Decision No. 250 is summarized below:

**Table 2.2.2 Meter Installation Program of Chirchik City**

<b>Meter</b>	<b>Yearly Distribution</b>					
<b>Total number to be installed</b>	1999	2000	2001	2002	2003	2004
46,638	300	4,634	6,951	9,268	11,585	13,900

This schedule may be revised later in accordance with Resolution No. 280.

## **(2) Cost of Meter Installment**

Unlike Japan, "the cost of meters while their installation shall be fully compensated at the expense of the owner of a private house and apartment" (Article 4 of Tashkent City Hokim's Decision No. 111). One meter costs 12 thousand sum. In Chirchik City, meters for gas and heat supply are going to be installed almost at the same time, which would cost 36 thousand sum per household. When the average per capita monthly income in the city is 10 to 12 thousand sum, an additional payment of 36 thousand sum for the cost of these meters would be a severe financial burden for an average wage earner, although the cost may be paid proportionally month by month over one year.

According to the Resolution No. 280 dated June 1, 1999, the Cabinet of Ministers required the local governments to pursue "organizing financing for purchasing water and gas meters with the attraction of alternative sources." What alternative sources for the residential customers were intended by this Resolution was not known to the JICA Team as of October 1999 except that payment in 12 monthly installment was stipulated. It is recommended that more alternatives be developed, and especially that more consideration be given to lower income families.

Also, Resolution No. 280 does not specify how the Vodokanals are to finance their purchase of the meters from the manufacturers and nor how they should cover the installation cost. The Ministry of Communal Services, the local governments and the TCMA's should assist the Vodokanals to finance these payables.

### **2.2.5 Government Financial Assistance to Water Supply Services**

#### **(1) Moves toward Reduction/Elimination of Subsidies to Water Supply Utilities**

Vodokanal is in its current concept treated as financially autonomous for its own operations and maintenance. Therefore, no subsidy is being given in principle for normal operations and for the maintenance of the water supply and sewage system. However, other communal services such as heating supply and housing have been subsidized up until now. In 1999, residential users paid only 60% of the unit production cost, but this subsidy to the residential users is not a financial burden on local government. The remaining 40% is cross-subsidized by the higher tariffs charged to industries.

This cross-subsidy system will continue to be valid until 2003, with the cross-subsidy rate being decreased by 10% every year. From 2004, the rationalization of the tariff will have been completed.

**(2) Budget for Capital Investments for Water Supply by the Ministry of Communal Services for the last 3 Years**

The budgets to cover the cost of installation of large inter-regional water pipes for the past three years are summarized in Table 2.2.3 below. The costs are paid through the Ministry of Communal Services to the Republican Amalgamation for the Maintenance and Development of Regional Water Supply on a contract basis.

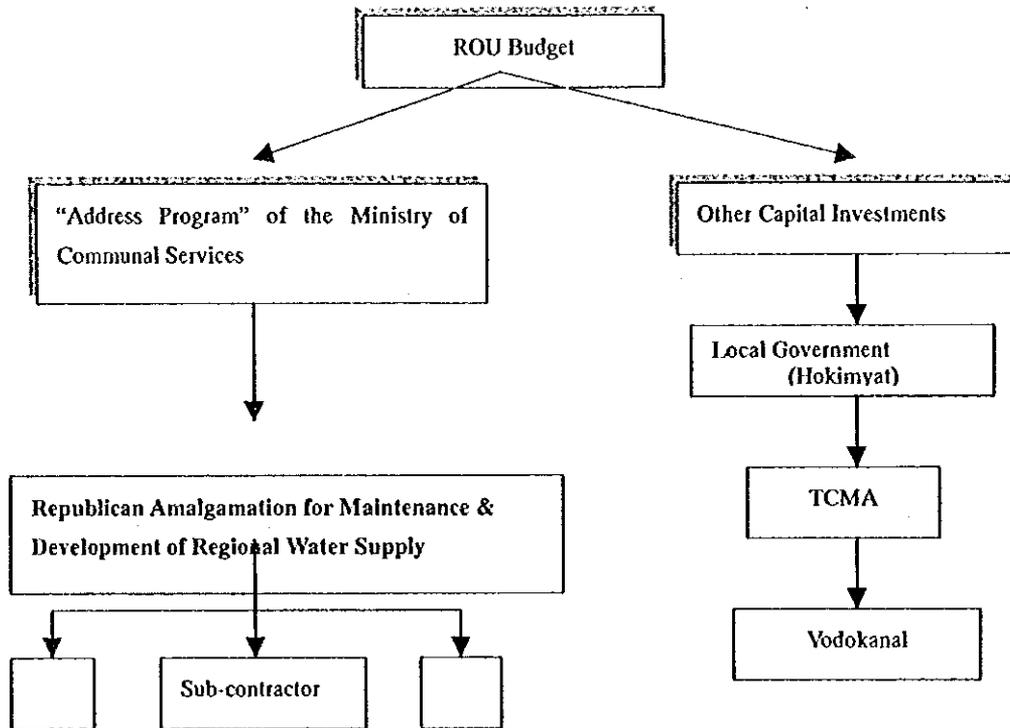
**Table 2.2.3 State Budget for Investments in Large Inter-regional Water Pipe**

(Unit: Millions of sum)

<b>Year</b>	<b>Budget</b>	<b>In 1991 Cost</b>
1997	1,043	14.5
1998	1,306	13.4
1999	2,000	19.8

When costs of capital investment by state-owned enterprises are financed by the state budget, this is regarded as a kind of state subsidy. For the water sector in Uzbekistan, capital investment costs are provided from the state budget to the regional Vodokanals through each Hokimyat as shown below. Therefore, the Ministry does not specify a separate amount to be invested in the water sector nationwide.

**Figure 2-2.1 Disbursement Process of Capital Investment Cost**



**2.2.6 Overdue Accounts Settlement System**

As reported later in the section on financial and management analysis, both Tashkent City and Chirchik City Vodokanals have faced such serious liquidity problems that they often could not pay their debts relating to various current transactions including the payment of monthly salary to their employees. Therefore, the Vodokanals in the two cities, and probably all over the country, as customers and users of goods and services, could have caused the indebtedness to the budgetary organizations and bigger industrial enterprises who have supplied the Vodokanals. They seem to have been almost equally in a difficult financial situation.

### **(1) Mutual Offset System**

To overcome these liquidity problems, barter trades and different offset schemes are quite common in most of the former Soviet Union countries. For example, 60 to 80% of the business transaction in Ukraine are reportedly settled by barter basis. In Uzbekistan, however, straightforward barter trades among public service utilities, state-owned enterprises and budget organizations were banned a couple of years ago. For the settlement of outstanding accounts between the Vodokanals and a group of customers and suppliers, a unique mutual offset system is used in the country. Customers eligible for the offset system are budget organizations, communal service providers and state-owned enterprises. Outstanding accounts arising from most of the communal services provided in the country, including water supply and sewerage system, cooperate under system.

By definition, overdue accounts are receivables older than 91 days. (Refer to the Presidential Decree dated July 19, 1999.) Every three months, all receivables and payables among these entities are selected and registered to form a table of intra-settlement accounts. Actual settlements are negotiated and settled at the ministerial level without the use of cash or bank accounts/credits. According to Tashkent City Vodokanal, an airplane manufacturing enterprise and Uzbek Agricultural Machinery Holding, which used to be customers with significant overdue accounts are included in this scheme. Overdue accounts of residents, private companies, and even certain state-owned companies are not included in this system, which is said to be administered by the Ministry of Finance.

Regarding the measures to improve the settlement of the overdue accounts of the residents, Resolution of the Cabinet of Ministers No. 462 dated November 4, 1998 clearly sets forth the intention of the government.

In addition to the above offset system run by the ministries, two-party non-cash transactions between Vodokanal and its customers are also quite common. Such transactions happen in respect of those Vodokanal's customers who experience certain liquidity problems and for this reason do not have enough cash to settle the outstanding invoices, but who are able to supply certain goods or

render services considered by the Vodokanal as necessary. It should be noted that, strictly speaking, Vodokanal does not enter into so-called barter agreements which would assume a direct exchange of goods/services with these customers; all non-cash deals of this kind are formally split into three independent steps: (1) water sales, (2) purchase of goods and/or services from the same customer, and (3) offsetting receivables and liabilities resulting from the two previous steps. For example, an offset agreement is signed with a furniture factory who is a customer of Vodokanal in order to offset the debt from this factory against the liabilities resulting from the purchase of furniture from this factory. Other examples of possible offsets: with a paper factory for the paper delivered, with a repair workshop for the repair services provided, with any company which sells its assets (e.g. computers), etc to the Vodokanal. All offset agreements, however, require the approval of the Ministry of Finance.

Revenue from the offsetting of accounts companies at least 60%-70% of total revenue in the case of both Tashkent and Chirchik City Vodokanals.

In Presidential Decree and Resolution of the Cabinet of Ministers dated July 19, 1999 on "Partial Amendment of the Presidential Decree about the measures on increasing the responsibility of the heads of enterprises and organizations for making settlements of accounts in the national economy," the government expressed serious concerns on the mechanisms used for account settlements and on economic activities. The effects of this government declaration are not very much clear at this moment and need to be confirmed by the various parties concerned. One official of Tashkent City Vodokanal disclosed his approval of the above Resolution, saying that:

"The action of the Resolution was so effective that the banks began working actively on ways to grant short-term target credits (to the state sector) for the repayment of their accounts payable. So the (Vodokanal's) accounts receivable from GAO TAPOiCH, GAJK and others have been paid. As for the budget organizations of central and local governments, outstanding accounts receivable from them have also been paid recently using funds financed by the target credits.

Also work on the transfer of certain cases to the economic court was strengthened. From July 1999 to the present, 46 cases in the amount of 84,037.8 sum have been transferred to the economic.”

The most essential reason for the problem of overdue accounts is that legislative, institutional and financial discipline in a market economy has not yet been fully realized in the ROU. For the state-owned enterprise sector, the reform and restructuring of the institutional, managerial and financial activities have not been sufficiently transformed into a market economy and they cannot pursue their own economic objectives against their will. For the state sector, ministries and agencies often lack the cash to implement their budgeted plans and programs. With the current political and economic background, therefore, the mutual offset system in Uzbekistan cannot be claimed to represent backwardness nor should this be regarded as a totally unnecessary economic and social practice. The system has actually reduced the balance of accrued indebtedness, not entirely but at least for a certain period and on a regular basis. Similar settlement systems may be found in countries such as the People’s Republic of China and the Philippines.

The point is whether or not the government of Uzbekistan recognizes that this mutual offset system and settlement of overdue accounts by financing short-term target credits through additional central bank credits should remain only as a short-term provisional means, which should be discontinued when the targets of its structural macroeconomic reforms have been fulfilled. Actually, it is reported that the government of Uzbekistan has commenced certain treasury reform within the Ministry of Finance with foreign assistance from USAID.

## **2.2.7 Social Safety Net**

### **(1) Operation of the System**

Implementation of the measures for the social protection of the population, first of all, for its socially vulnerable people, has been officially declared in Uzbekistan as one of the priorities of the economic policy. This principle assumes an effective mechanism for social protection and social guarantees. According to the ADB report<sup>1</sup>, “...the Government has provided significant social protection to its

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<sup>1</sup> See *Asian Development Bank. Country Economic Review. Uzbekistan. April 1999.*

low-income population, those with large families, the disabled, invalids, widows, pensioners and single-parent families.”

The responsibility for providing targeted support by identifying low-income families has recently been entrusted to the Mahallinskiye Committees who determine the eligibility of families for social aid and who make the payments to such families. The central and local governments' budgetary funds remain the main source of financing the subsidies to families with low income. As it appears from the ADB report, poverty is more rampant in the rural areas compared to the urban areas because of the lower average wage and the larger families in rural areas.

The present pension system in Uzbekistan provides for three types of pensions: old age pensions that account for the major share of all pensions, disability pensions and survivor pensions. All pensions are paid from the statutory Pension Fund which accumulates and distributes the contributions made by enterprises and employees. It should be mentioned, however, that timely indexation of pensions to keep pace with the rate of inflation is an important social issue for Uzbekistan with its inflationary environment.

## **(2) Eligible Recipients**

In respect of payments for communal services, including water tariffs, there exist allowances for a number of different categories in the population. These allowances are regulated by many different pieces of legislation, with the majority of them dating back to the era of the Soviet Union. Therefore, it is difficult to identify all the relevant legal foundation, which enables the classification of these allowances beneficiary groups, kind and level (percentage and/or amount). These allowances may account for 30%, 50% or even 100% of the standard fees depending on the category to which the person belongs and depending also on other circumstances.

The most significant categories of the population entitled to an allowance for the payment of their fees for communal service are listed below:

- 1) invalids who are veterans of the Great Patriotic and Afganistan Wars and their families (allowance up to 100% allowance in accordance with Resolution of the Central Committee of the Communist Party of the Soviet Union and the Cabinet of Ministers of the USSR No. 304 dated April 18, 1975, Resolution of the Central Committee of the Communist Party of the Soviet Union and the Cabinet of Ministers of the USSR No. 175 dated February 21, 1980, and other resolutions);
- 2) single pensioners (100% allowance in accordance with Edict of the President of Uzbek SSR dated May 27, 1991 and Resolution of the Cabinet of Ministers of Uzbek SSR No. 145 dated May 28, 1991);
- 3) blind people (an allowance up to 100% in accordance with Resolution of the Cabinet of Ministers of Uzbek SSR No. 251 dated June 28, 1990);
- 4) Honorary Pensioners and their families (50% allowance in accordance with Resolution of the Cabinet of Ministers of the USSR No. 1128 dated December 19, 1977 and Resolution of the Cabinet of Ministers of Uzbek SSR No. 11 dated January 14, 1978);
- 5) teachers of secondary and professional schools (50% to 100% allowance in accordance with Edict of the President of Uzbek SSR dated November 13, 1990 and Resolution of the Cabinet of Ministers of Uzbekistan No. 3 dated January 8, 1992);
- 6) certain veterans of the Great Patriotic and Afganistan Wars (Resolution of the Central Committee of the Communist Party of the Soviet Union and the Cabinet of Ministers of the USSR No. 812 and 813 dated July 26, 1984, Resolution of the Cabinet of Ministers of the USSR No. 1121 dated September 18, 1986, Resolution of the Cabinet of Ministers of Uzbek SSR No. 315 dated September 21, 1990, and other resolutions);
- 7) Chernobyl victims (Resolution of the Supreme Soviet and the Cabinet of Ministers of Uzbekistan No. 170 dated April 6, 1992);
- 8) officers of the special force brigade (50% allowance in accordance with Resolution of the Cabinet of Ministers of Uzbekistan dated May 19, 1999) and other categories of the population.

### **(3) Present Situation in Tashkent City**

According to the Tashkent City Hokimiyat, the number of beneficiaries of various allowances is approximately 350 thousand, and the amount involved is roughly 450 million sum.

In the water sector, a rough estimate of the amount granted by the two Vodokanals would be 48 million sum for Tashkent City Vodokanal and 7 million sum for Chirchik City Vodokanal.

The development of various policies and schemes relating to the social safety net has been the responsibility of the central government. Local governments, even that of Tashkent City, have followed those developed and outlined by the central government. One example in granting the privileges to a certain selected group of people is exhibited in Resolution of the Cabinet of Ministers No. 347 dated July 19, 1999. In Article 4, it states:

“With the purpose of repayment of the actually formed indebtedness for the use of communal services and power supply, to grant rights to families with scanty means, single pensioners, and elderly and disabled persons to accomplish on the results of the 1 half of the year and the year 1999 on the whole the early use of the funds from the special accounts “Indexing” in the size of the volume of indebtedness.”

In developing future schemes to ensure the social safety net, the financial constraints faced by the Vodokanals should be given thorough consideration by the central government. The financial burden from providing these allowances, currently borne by the Vodokanals, should eventually be transferred to and carried by the central and local governments.

#### **(4) Reduction of Water Tariff in Tokyo**

The Japanese system of reduced water tariffs for residential users, represented by those who are served by the Tokyo Metropolitan Waterworks, is summarized in Table 2-2-4 below. The Japanese system is simpler than that of Uzbekistan because the residential users are well defined and are limited to persons and/or families to be protected or supported by only a couple of laws.

In defining the recipients under the Uzbekistan system, a huge number of laws and sundry instructions are applied. In Japan, other than residential users, there are certain reduced tariffs applied to public baths, organizations working for public welfare, and industries engaged in the

leather industry and the plating industry. In addition, public utilities such as street lighting and public water consumed in parks, etc. are given a certain tariff reduction.

**Table 2.2.4 Reduction of Water Supply Tariff in Tokyo**

Recipient	Rate or Amount of Reduction	Applicable Law
Persons receiving public assistance based on the Livelihood Protection Law	Amount obtained by the calculation = Base Rate x 1.05	Water Supply Ordinance of the Tokyo Metropolitan Government (Article 30, Clause 1 or 2)
Persons receiving public assistance based on Law for Special Allowances for Dependent Children		
Persons receiving Survivor Pensions based on the National Pension Law, who are entitled to Welfare Pension for Fatherless or Quasi-Fatherless Families based on the Former National Pension Law		
Families receiving education, housing and medical support based on Livelihood Protection Law, Article 11, Clause 1, Para. 2 through Para. 4 (Recipients who are entitled to a reduced tariff based on Tokyo Water Supply Ordinance, Article 30, Clause 2 are excluded.)	If the diameter of service pipeline is bigger than 30 mm, Amount obtained by the calculation = (Base Rate + Tariff up to 10m <sup>3</sup> /month) x 1.05	Water Supply Ordinance of the Tokyo Metropolitan Government (Article 30 Clause 1)

It should be noted that the costs for the reduction of these tariff for the Tokyo Metropolitan Waterworks are reimbursed from the general budget of the Metropolitan Government. This is an important difference from the current Uzbekistan system.

#### 2.2.8 Other Laws Related to Water Supply Services

To give a perspective of the legislative structure of the water sector in Uzbekistan in comparison with that in Japan, the following summary table has been prepared.

Table 2.2.5 Comparative Table of Water Sector Laws

Uzbekistan Law	Japanese Law	Reference
Law on Water and Water Use No.837-XII dtd. May 6, 1993 with amendments on April 25, 1997 and August 29, 1998	Waterworks Law (stipulating basic management of waterworks, such as licensing for business and operation, water quality standards, construction and administration of water supply system, planned improvement of facilities, and liabilities of the personnel concerned.)	Regulation of rational water use by the people and the national economy; protection from water pollution.
Presidential Decree on Improvement of the Management of Communal Services No. UP-617 dtd. July 15, 1993; Resolution of COM No.371 dtd. July 22, 1993 on Issues of Organization and Activities of the Ministry of Communal Services	Local Public Enterprise Law (stipulating the basic management of local public enterprises, such as organization, finance and personnel.)	“Trust” Vodokanal is one of several. State-owned companies, which has a separate legal basis from private/commercial companies. TCMA accomplishes communal services with the service providers.
Law on Water and Water Use No. 837-XII dtd. May 6, 1993; with amendments on April 25, '97 and August 29, 1998); Order of MCS No. 144 dtd. September 16, 1994 on the approval of the rules to use the communal water supply and sewage systems; Resolution of COM No. 371 on the issues of organization and activity of the Ministry of Communal Services dtd. July 22, 1993; Resolution of COM No. 165 dtd. Mar.31, '97 about measures on the Law “On competition and limitation of monopoly activities on the commodity markets”;	Local Government Law (stipulating rules, such as for establishment, management and water tariffs of water supply systems as public facilities for the public welfare.)	Water supply and sewage systems are defined as natural monopolistic activities in Article 15 of Resolution No. 165, and their tariffs are subject to state price regulation. “Methodical Recommendations issued by the Ministry of Finance dtd. Jul. 7, '95 outlines the procedures for tariff setting.
Law on Water and Water Use No. 837-XII dtd. May 6, 1993; with amendments on April 25, 1997 and August 29, 1998	River Law (stipulating the rules governing rivers, such as licenses for the use of flowing water, construction of structures, and administration of dams, etc.)	

<p>Law the Protection of Nature No. 871-XII dtd. May 7, 1993;</p>	<p>Fundamental Environmental Law (stipulating rules governing designated rivers for integrated development and utilization of such rivers, and also stipulating water quality standards of these rivers.)</p>	
<p>Resolution No. 174 dtd. April 7, 1992; Regulation on Water Protection of Reservoirs and Other Storage Lakes, Rivers, Main Canals and Collectors;</p>	<p>Prevention of Water Pollution Law (stipulating the discharge of water from factories and offices to prevent public water pollution, etc.)</p>	
<p>Order of MCS No. 144 dtd. September 16, 1994 on the approval of the rules governing the usage of the communal water supply and sewerage systems; Related Mayor's Decisions.</p>	<p>Water Supply Ordinance of the Tokyo Metropolitan Government Law (stipulating the rules for water supply conditions, such as water tariffs, cost-sharing of water service installation work, and matters required for the proper maintenance of water supply.)</p>	

## **2.3 Other Influential Aspects**

### **2.3.1 Present Status of Computerization in the Country**

In this section, we study the present status of computerization in Uzbekistan to find out how to utilize computer systems was effectively.

After a computer system is installed, it is operated and maintained by the systems engineers within Vodokanal and external human resources. Therefore it is necessary for the country as a whole to maintain an appropriate level of information technology.

The level of information technology in Uzbekistan is investigated in this section. We also researched the condition of the systems used each section of the two Vodokanal: Tashkent and Chirchik. We focused on the tariff collection procedures in detail in order to learn how to use the computer systems are used for their work.

After preexisting an overview, we described it in terms of four categories – telecommunication, IT industry, education, and banking systems. These categories are especially related to the tariff collection.

#### **(1) Outline of Computerization**

##### **1) Information Technology Industry**

It is important that the information and computing services industry in the country can provide adequate services and products to domestic customers for their stable and uninterrupted operations.

We interviewed the Ministry of Macroeconomics and Statistics in order to understand the present status of computerization in the ROU. The Ministry consists of two sections situated at two separate premises: the central body and the Department of Statistics. This department

collects all information on the industry of the country, summarizes it and issues statistical bulletins (including communal service enterprises) in Uzbekistan. However, statistics concerning information technology or the scale of computerized trading were not obtainable from the department. We then analyze the computer industries in Uzbekistan from certain other reports and statistics.

The information technology and computer services industry consisted of 0.1% of Uzbekistan's total gross domestic product (GDP) in 1994, 0.3 % in 1995, and 0.5 % in 1996. It can thus be said that the IT industry in Uzbekistan is still very small but is steadily growing. (*"CIS Statistical Yearbook '97" (1998)*).

As for computer companies in Uzbekistan, which are categorized into computer sales companies and computer service companies, "the computer market in Uzbekistan has grown rapidly in the last five years. Currently, approximately 70 small and medium-sized companies and associations are operating in the market. Although a few American companies have established direct distribution relations with local computer firms, approximately 70% of the computers come from Asian suppliers." (*Soros Foundation, 5<sup>th</sup> August 1996*)

The number of employees in the information technology and computer services sector was only 2,800 in 1994, and consisted of only 0.03% of all employees. On the other hand, the information technology and computer services consists of 0.1 % of GDP as stated above, and therefore the IT industry in Uzbekistan, although it is still developing, is more efficient than other sectors. However, it is also notable that the number of employees decreased after independence in 1991 (13,500 in 1990, 12,000 in 1991). (*"The Study Report of Development Assistance for Central Asia Region", p. 65, International Development Center, 1996*)

## 2) Comparison with Other Countries

### i) Information Service Industry in Asia and the Pacific Rim

The GDP of Uzbekistan in 1997 was estimated at 1,358.8 billion sum, equivalent to 12,353 million US dollars (1 US Dollar = 110 sum was the official exchange rate on the 31<sup>st</sup> of December 1997).

In comparison with Asia and the Pacific region (Asian-Oceanian Computing Industry Organization (ASSOCIO), 1998, Supporting Report, Table S.2.3.1), it is thought that Uzbekistan has still a lot of room for development in the information technology and computer services sector.

### ii) The Situation in Other Central Asian Countries

The Table 2.3.1 outlines the information technology and computer services industry in five Central Asian countries including Uzbekistan.

**Table 2.3.1 Information & Computing Services in Central Asia  
- the Ratio of Information & Computing Services to Total GDP**

(Unit: %)

	1996	1995	1994	1993	1992	1991	1990
Uzbekistan	0.5	0.3	0.1	3.8	0.3	0.1	0.1
Kazakhstan	0.9	1.0	0.3	0.0	0.8	0.1	0.1
Kyrgyz	7.4	8.9	4.5	1.7	0.5	0.1	0.1
Tajikistan	N/A	0.0	1.0	0.2	0.1	0.0	0.0
Turkmenistan	N/A	2.1	0.2	3.5	0.4	0.0	0.0

*CIS Statistical Yearbook '97 (1998)*

The information and computing services industry in Uzbekistan, Kazakhstan and Kyrgyz is more developed than in the other two countries in the region. In particular, the growth rate in Kyrgyz is remarkable. In Uzbekistan, the sector receded in 1994, as the number of employees in the sector decreased by half.

We studied the trade of electronic data processing equipment between Central Asia and OECD countries in 1996 (See "1996 Supplement to World Trade Annual," the United Nations, 1997, Supporting Report, Table S.2.3.2). The level of imports by Uzbekistan and Kazakhstan was high (18,982 thousand US dollars and 14,320 thousand US dollars), respectively. It was assumed that these two countries had more domestic demand for the use of information technology and computers and that this sector was active.

### 3) The Government Actions in IT Industries

The Government of Uzbekistan has announced and undertaken various policies in order to promote computerization.

A government decree issued on 25 December, 1998, specifies that newly established banks are to be given tax allowances for two years to investments in computers and communication equipment and that these investments are tax deductible. According to this decree, "scientific research and innovation in the framework of state contracts or scientific technical programs of the State Committee of Science and Technique of the Republic of Uzbekistan is exempted from VAT.

Small enterprises, which are defined in the decree, do not have to pay value added tax (VAT) and their income taxes are 25% (trade), 5% (agricultural), and other economic branches (10%), which are lower than those of larger companies. It is assumed that many computer companies in Uzbekistan will benefit from this order, as most of them are still small. (Refer to "Letter of the State Tax Committee of the Republic of Uzbekistan, January 13, 1999)

The Center for New Technologies was organized in 1996 as a self-supporting institution by the Government of the Republic of Uzbekistan. It is a subdivision of the Uzbekistan Tax Committee according to the government decree. Their activities are divided into three parts: design and development of software, training of specialists, and repair of all types of computer equipment.

#### 4) Status of Systematization of Industries

##### i) Situation of Computerization in Industry

The present situation of computerization in various industries in Uzbekistan was studied (Table 2.3.2). We interviewed seven industries that were thought to have better infrastructure in terms of their information technology and computer equipment. The relatively big companies are selected from the directory "*The Best in Tashkent (manual)*" (Issued by Shark Printing House, 1998) and "*Manual of the Tashkent Telephone Network*" (Issued by Shark Printing House, 1995).

The banking sector is the most highly computerized. It was pointed out, however, that even if personal computers are installed, many of them are not connected to the network system. Therefore it is thought that computerization in Uzbekistan is still in its infancy and that certain sectors where computers can improve their business quite efficiently have just started to computerize their operation.

Table 2.3.2 Status of Computerization of Industries

Companies	Nationality	Departments	Computerized	Comments
<b>Banks</b>				
1 National Bank of Uzbekistan	national	All departments	yes	NBU, the biggest bank in Uzb., has branches at all districts of Tashkent, and in every region of Uzbekistan. All branches are computerized and use the Abraxsys program (computer application program specifically for banks, made in USA)
2 AKBK Turon	national	All departments	yes	It is Stock Commercial Consolidation Bank and all branches are computerized. According to the director of the computer center, all banks in Uzbekistan are to be computerized, otherwise it will not get a license for activities in the territory of Uzbekistan
3 Palcha Bank	national	All departments	yes	According to their computer specialist they have one of the best computer networks in Tashkent. All branches have links with each other.
<b>Trading</b>				
1 Central Universal Shop	national	Some trading	yes	They have a computer network, a computer center. They also have VISA and *sums Card service for customers and *sums Card is a debit card by which one can settle payment in sums in the territory of Uzbekistan.
		Accounting	yes	
		Planning	yes	
		Human resources	no	
2 Saodat Supermarket	private	All departments	no	The interviewee said that they do not have money to buy computers.
<b>Transportation</b>				
1 "Uzbekistan Khavo Yullari", airline	national	No answer	No answer	
2 Trans Continental JV (forwarding and logistics company)	private	All departments	yes	They said that they have a computer network which functions efficiently.
<b>Travel</b>				
1 "Tashkent" hotel	national	Accounting	yes	They have some computers but no network.
		Mini telephone station	yes	
		Cash office	yes	
		Reservation	no	
2 "Turon" hotel	national	Accounting	yes	They have some computers but no network.
		Reservation	no	
		Secretary's room	yes	
<b>Mass media</b>				
1 TV & Radio	national	All departments	yes	TV and radio are located in two different buildings. They have 150 computers, but there is no network. Each department has computers without a network, so it is difficult to send video information from one computer to another.
<b>Communication</b>				
1 Gileypochamp, main post office	national	Telegram acceptance office	yes	Every department where a computer is necessary has one and the communication department will be provided with computers soon. They are planning to get a network.
		Accounting	yes	
		Planning	yes	
		Human resource	yes	
		Subscription	yes	
		Communication	no	
<b>Entertainment</b>				
1 Drama theatre named after A.Navoi	national	Cash office	no	They have 5 computers. 4 are without a network in the accounting department and 1 is in the secretary's room.
		Reservation	no	
		Accounting	no	
2 Museum of applied arts	national	Secretary's room	yes	They have only one computer.

## **ii) Large Computer Systems**

The large domestic reference sites for computerization will be explained in this section. The inter-banking system, whose main user is the Central Bank of Uzbekistan, is one of the examples. It will be detailed later in this section.

Secondly, the Scientific Information Center for New Technologies, which we explained before, has a Tax Collection Computer System and a Tax Identification Card System (TIN). There are 14 regional centers and the Tax Committee of Uzbekistan, with 233 tax inspectors offices all over Uzbekistan. There are approximately 7,000 computers in the tax computer system. The system has a master file where all legal citizens of the Republic of Uzbekistan are registered. They can file the monthly, quarterly and semiannual reports from taxpayers in the system. Tax inspectors can also get all information about every taxpayer from a bank via floppy disk, which enables them to check the information easily. The system was developed in an MS-DOS environment and the database used is Oracle. In the Tax Committee some computers operate on Unix, and others have Windows NT. The programming language is Delphi (a kind of PASCAL).

Other large systems are shown in Table 2.3.3.

**Table 2.3.3 The Large Computer Systems in Uzbekistan**

Market Area	Company name	Hardware	System Function
Banking	National Bank	IBM AS 400, 6xCPU, RAID 128Tb, Mirror, 4Tb RAM.	Cluster server
Government bodies & institutes	Information classified	IBM 370, 8xCPU, RAID 56Tb, Mirror, 4Tb RAM	Mainframe
Education & public organizations	Tashkent State Economic Univ.	i Pentium II 300 64, 6,4Gb, 15", multimedia, modem	Internet access gate
Science facilities & Institutes	Cybernetics Research Insti- tute	i Pentium 200 MMX 32, 2,5Gb, 14", Multimedia	Document proc- essing
Industry	Foton	i Pentium 200 MMX 16, 3,2Gb, 14"	Document proc- essing
Private Companies	Naytov	IBM 2.3.0 4X. 1Gb RAM, Mir- ror,	LAN server

*JICA Study Team, 1999*

There mainframe systems are very few in Uzbekistan. Even the largest system is a local area network consisting of a server and a number of personal computers. The specifications for computer hardware are generally outdated, as Intel Pentium 200 MMX 32 is still considered to be at the high end.

## **(2) Telecommunications Sector**

A telecommunications infrastructure is crucial to support and enhance computer systems. In this section we study the telecommunications sector in Uzbekistan.

### **1) The Present Status of the Telecommunications Industry**

Telecommunications in Uzbekistan are supervised by the Ministry of Telecommunications and operated by twenty subsidiaries of Uzbekistan Telecom. The telecommunications infrastructure had been planned in Moscow by the former Soviet Union until 1991, and most facilities were constructed in Russia. It was observed that 80% of the facilities are now outdated. The

rate of digitalization is about 1%, which is low. It has been difficult to import parts needed for repairs from Russia and therefore the level of telecommunications services has declined.

*"Telecommunications in Uzbekistan," Y. Sugiyama, ITU Journal Vol.26, No. 7, pp.46-49.*

Table 2.3.4 presents the statistics related to telecommunications in Uzbekistan.

**Table 2.3.4 Telecommunications in Uzbekistan**

	Uzbekistan	Japan	(Units)
Main Telephone Lines	1,531.3	*58,474	Thousand
Main Telephone Lines per 100 inhabitants	6.7	*46.4	Lines
Waiting List	329.3	None	Thousand
Digital Lines to Main Telephone Lines	2.8	N/A	%
Largest Cities - Main Lines	493.5	-	Thousand
Largest City Main Lines to Main Telephone Lines	32	-	%
Cellular Mobile Lines	9.5	20,877	Thousand
ISDN	N/A	1,107	Thousand
Internet Host	122	*1169000	Hosts
Internet Host per 10,000 inhabitants	1.29	*98	Hosts
Internet Users	50,000	*13,500,000	Users
Internet Users per 10,000 inhabitants	9.79	*1072	Users
Personal Computers	N/A	*32,800,000	Hems

\*: Data from 1998

*"Way of Cooperation to Central Asia Region," International Cooperation Center, 1995.*

*"Information White Paper," Japan Information Processing Development Association, 1999.*

It was observed that telecommunications in Uzbekistan in 1999 are not adequate, as traffic interruptions sometimes occur and as communication between Tashkent and areas outside Tashkent is sometimes difficult.

## 2) Private Users/ E-mail

As stated above, the telecommunications infrastructure is crucial to promote information technology and the computer services industry. Accessibility to telecommunications by individual users is the key element to ensure the sustainable development of the telecommunications sector.

Table 2.3.5 indicates the e-mail services available in Uzbekistan. Certain domestic internet service providers (ISP) and international ISP were studied.

**Table 2.3.5 E-mail Services Available in Uzbekistan**

Abroad E-mail services:

Protocol	Provider name	Status and comment	
Ppp	Russia Online	Present	Available through the Naytov ISP
	MSN Hotmail	Present	Available through any ISP.
	IBM network	N/A	Recently closed
	AT&T	N/A	
	AOL	N/A	Closed few years ago
	Compuserve	N/A	Closed 3 years ago.
Uucp	N/A	N/A	
WWW	MSN Hotmail	Present	WWW based mailbox is very useful for people who use numerous Internet access points. It is quite slow and has certain traffic limitations though.
	USA.net Chat.ru	Present	
	Yahoo	Present	
	Rocketmail	Present	
	Mail.ru	Present	
		Present	Non free of charge email services are loosely available and require payment to be made by credit card.

*JICA Study Team, 1999*

Local Providers' E-mail Services:

Protocol	Provider Name	The number of subscribers	Comments
Ppp	Naytov	*4,350	This type of email is usually supplied with WWW Internet service. It is moderately expensive but very useful and has no restrictions on traffic.  UzNet in the future will have the monopoly on telecommunications channels. All providers will have to pay a fee for the right to use it.
	EANetways	*1,000	
	Ishonch	463	
	Eastlink	*1,900	
	UzNet	800	
	Globalnet		
Uucp	Eastlink	*300	UUCP mail is a cheap solution for low-end systems
	Perdca	3,000	PERDCA provides free email service at their office.
	Globalnet	800	
WWW	N/A	N/A	There is a rumor that there is be a WWW based email service in progress at Naytov.

Note: Figures marked \* are approximations made by the companies' staff.

(JICA Study Team, 1999)

The total number of e-mail users who benefit from domestic ISPs was 12,613 in 1999, while the total number of users of international ISPs was about 50,000 in 1996 (see Table 2.3.4).

According to the web information issued by a domestic ISP, "The Internet first appeared in Uzbekistan in 1995. Only 3 percent of the people in 1996 had access to the Internet. Today, only 15% of the universities in Tashkent have access to e-mail and the Internet. The Internet is becoming more and more important for non-governmental sectors." (*Uzland*)

### **(3) The Situation of Information Technology Industry**

#### **1) Computer Companies**

The computer companies in Uzbekistan are categorized into computer sales and computer services. In 1999, the number of computer firms in Uzbekistan was estimated at around 300. One of the computer companies to open at early age in Tashkent was IBM, which has already closed its branch. Microsoft has also closed its branch office.

We interviewed certain companies which were extracted from the local Yellow Page directory (Table 2.3.6). Most international companies are struggling, and only Siemens has achieved better results. Naytov seems to be reputable among the domestic companies. The main business of large computer companies in Uzbekistan is to provide hardware solutions and to sell to handle computers.

As for the design and development of application software, the market is still small, and only the banking systems are noteworthy. ASBT provides software development services, but packaged software applications currently dominate sales in Uzbekistan.

Table 2.3.6 Information Technology Companies

Foreign Companies

Company Name	Status	Services	Year of Formation	Number of Staff	Annual Revenues	Main Clients	Comments
IBM	Office closed	N/A	N/A	N/A	N/A	N/A	N/A
Siemens	In operation	Hardware Solutions	1995	4 Specialists	10,000,000 DM	Central Bank, Customs, Taxation Dept.	Siemens is one of the World's largest IT companies. However, high prices are not popular in Uzbekistan
Sovam Teleport	Status changed	N/A	N/A	N/A	N/A	N/A	N/A
Oracle *	In operation	Database, Consulting.	1994	(10,000 specialists)	(\$7.144bln)	Entire Banking System of Uzbekistan	Oracle is the de-facto standard in the database market in Uzbekistan
Microsoft	Office closed	N/A	N/A	N/A	N/A	N/A	N/A

\* Oracle have provided the information for Oracle Worldwide

Local Companies

Company Name	Status	Services	Year of Formation	Number of Staff	Annual Revenues	Main Clients	Comments
Naytov	In operation	Solution Provider	1994	100 Specialists	Sum 3 billion	Ministries, National Bank, President App	Naytov is the biggest IT company in the market.
Naytov ISP	In operation	Internet Service Provider	1997	8 Specialists	N/A	Trust Banks	Internet services provided by Naytov are of the best quality but highly priced.
HiTech	In operation	Hardware Solutions	1994	42 Specialists	Sum 1.2 billion	JICA Team, Taxation Dept	HiTech is the second largest hardware solution provider.
Micros	In operation	Hardware, Network tech Training	1995	50 Specialists	\$350,000	Asakabank, Uzneftegaz	Micros is one of the 3 companies in Central Asia which has MCSE certification.
ASBT	In operation	Software Development	1997	12 Specialists	Sum 40 million	SANIIRI, Commercial Banks	Company production ranges from banking automation systems to a groundwater simulation model.

JICA Study Team, 1999

## 2) Production Costs

Table 2.3.7 indicates the average market prices of computer hardware while Table 2.3.8 indicates the average market prices of software. The tables were compiled from computer magazines and from interviews with personnel of computer companies.

**Table 2.3.7 Cost of Hardware**

(Unit: Sum)

Type	Manufacturer	Performance	Specifications	Average Cost	Sales company
PC	Americomp	High	PII 333, 32M RAM, 3,2G HDD, 15"	456,666	Naytov
		Mid	PII Celeron 300A, 32M RAM, 3,2G HDD, 14"	385,140	Naytov
	Dell	High	PII 450, 128M RAM, 10G HDD+SB, CDROM+LAN	1,414,800	Dell Technology
		Mid	PII 350, 32M RAM, 4,3G HDD + LAN	526,541	Dell Technology
	Local company	High	PII 450, 64 RAM, 8,6 HDD, 15" + SB, CD	550,689	Optimum
		Mid	PII 333A Celeron, 32 RAM, 4,3 HDD, 14"	339,500	NG Market
		Low	P166, 16M RAM, 2G HDD, 14" + Sb, CD	306,900	Khamid Computech
Note-book	Dell	High	PII 300, 64M RAM, 3,2G HDD, 13" TFT + SB, CD	1,729,200	HiTech
		Mid	P 233, 32M RAM, 3,2G HDD, 12" TFT + SB, CD	1,123,980	HiTech
Printer	HP	Heavy duty	Laser Jet 5000, A3, 16 pages/min, 1200 dpi	1,202,580	Naytov
		Heavy duty	Laser Jet 5C, A4, 10 pages/min, 1200 dpi	2,400,000	Naytov
		Regular duty	Laser Jet 1100, A4, 8 pages/min, 600X600 dpi	245,000	Sarkor Computech
		Professional	Desk Jet 1120 C, A3, 4-8 pages/min, 600X600 dpi	347,412	Agata Impex LTD
		Home use	Desk Jet 420, A4, 3-6 pages/min, 300X300 dpi	88,818	Naytov
	Lexmark	Home use	Lexmark 1000, A4, 300X300, 3 pages/min	68,000	REM
	Epson	High	Epson Lx 1050 dot matrix printer	208,290	Agata Impex LTD

Table 2.3.7 Cost of Hardware (continued)

Type	Manufacturer	Performance	Specifications	Average Cost	Sales company
Modem	US Robotix	High	Courier 56k External Modem	189,062	Modern Technologies
		Mid	Sportster 33,6 External Modem	46,475	Naytov
	Noname	Mid	Rockwell 36.6 internal	36,920	REM
Scanner	HP	High	HP ScanJet 6100	271,800	NG Market
	Mustek	Mid	Mustek Scanexpress 6000P	62,500	Semurg Tennis
	Genius	High	Genius Color Page	96,000	Raduga Orgtech
UPS	APC	High	UPS 675 VA PNP TRIPPLITE SUPEROMNI/PRO	95,000	KMJ
		Mid	UPS 300 VA APC	62,700	NG Market
LAN	3Com	Coaxial	1 Node Ethernet Kit (adapter, wires, connectors)	15,000	Sarkor Computech
		Twisted Pair	1 Node Ethernet Kit (adapter, wires, connectors)	20,450	Sarkor Computech

(Sources: "Prestizh", JICA Study Team, 1999)

For example, the market price of a high-end Dell personal computer is 1,414,800 sum, whereas that of a low-end clone computer is 306,900 sum. The prices of computers in Uzbekistan are as high as those in OECD countries, and it can thus be assumed that computer equipment is not affordable for small companies and individual users.

Table 2.3.8 Market Prices of Software

(Unit: US Dollar)

Type	Manufacturer	Environment	License	Average price	Supplement Conditions
Operating System	Microsoft	Windows 9x	No	5	CD package, documentation. Absent
		Windows 9x	Yes	20	Original package
		Windows NT 4x	No	5	CD package, documentation. Absent
	IBM	OS/2	No	5	CD package, documentation. Absent
	Novell	Netware	Yes	-	
Database System	Oracle	Oracle DMS	No	5	CD package, documentation. Absent
		Oracle DMS	Yes	-	Original package
Office Software Packs	Microsoft	Office 9x	No	5	CD package, documentation. Absent
	IBM	Lotus Suite	No	5	CD package, documentation. Absent

(JICA Study Team, 1999)

The software market is dominated by sales of packaged software. The prices are much lower than those in technically advanced countries. For example, the average price of Microsoft Office in Japan, is 300 US dollars (1999), which is much higher ones in Uzbekistan.

Piratch software packages are widely available and they reduce the prices of software further. According to *"The Law of the Republic of Uzbekistan on the Legal Protection of Computer Programs and Databases," May 6, 1994*, "copies of computer programs or databases, the creation of which or use of which leads to infringement of the author's rights, are subject to confiscation under the order established by legislation." The author's rights are protected to some extent, but this legislation is too easy to completely protect the author's rights. It is necessary not only confiscation but also the severe regulation of the fine etc.

The law also states "The legal protection shall not extend to ideas and principles on the basis of a computer program or database or any of their elements, including the ideas and principles of organization of an interface or its algorithm or its programming languages."

### **3) Status of Human Resources - Computer Engineers**

In this section, we study the present status of the human resources which support the information technology and computer services (ITCS) sector.

At first, private enterprises are taking over a share of the state-owned enterprises. In Uzbekistan in particular, more than 50% of the workers in the ITCS industry are employed by private enterprises, which have been empowered since independence in 1991.

On the other hand, joint ventures with foreign investors have expanded their market, but not as much as we had expected. It is assumed that doing business in Central Asia has not been attractive or difficult for foreign investors. It may therefore be difficult to import high level computer technology from abroad through these joint ventures.

According to an interview conducted at the Scientific Information Center for New Technologies, the popular programming languages in Uzbekistan are Pascal, C and C++. It is generally thought that Pascal is not suitable for the development of application systems. It is understood that Uzbekistan is facing difficulty in terms of the education and training of systems engineers and computer programmers, not operators or ordinary PC users.

## **(4) Computer Education**

### **1) Enterprises**

In this section, we study the present status of systems administrators within the enterprises in Uzbekistan.

We selected twenty large enterprises from several sectors including banking, manufacturing, commerce and construction. (Source: *"The best in Tashkent (manual)," Shark Printing House, 1998*). We then interviewed ten of them, and the results are presented in Table 2.3.9.

As shown in the following table, almost all companies in Uzbekistan have no information technology department. It is therefore assumed to be difficult for most companies to provide user training in order to maintain and operate their computer systems properly.

However, an average Japanese company employs 32.2 staff for information processing, which consists of 2.3% of its employees. (Sample: 3,498, *Source: Information White Paper 1999*).

Table 2.3.9 The Status of Companies' IT System Departments

Name of Company	Type of Business	Type of Activity	Private /Public	Existence of Computer Department	Number of employees in IT System Department	Training Program for System Department	Comments
National bank of Uzbekistan, head office	banking		public	yes	20	no	
Mediz	production	medicine	public	yes	3	no	
"Foton" amalgamation	production	electronics	public		No answer		
"Malika" factory	production	knitted goods	public	no	0	no	They have a contract with one part-time computer specialist.
Poultry factory	production	chicken factory	public	no	0	no	
RIM	production	design	private	no	2	no	
"Hitech"	commerce	computers, software, service	private	yes	8	yes	The company is a local supplier of Siemens and HP. The managers and computer specialists of this company take computer training courses in Moscow or in Germany every year.
Uzmezhautotrans	service	service	public	no	0	no	They employ two computer specialists for maintenance.
Medical center of A.Nazarov	service	medical service	private	no	0	no	They have 2 computers: one is for administrative work, and the other is for computerized diagnosis.
Tashpromgrazhdanstroy	production	construction	public	no	0	no	They have 2 computer specialists.

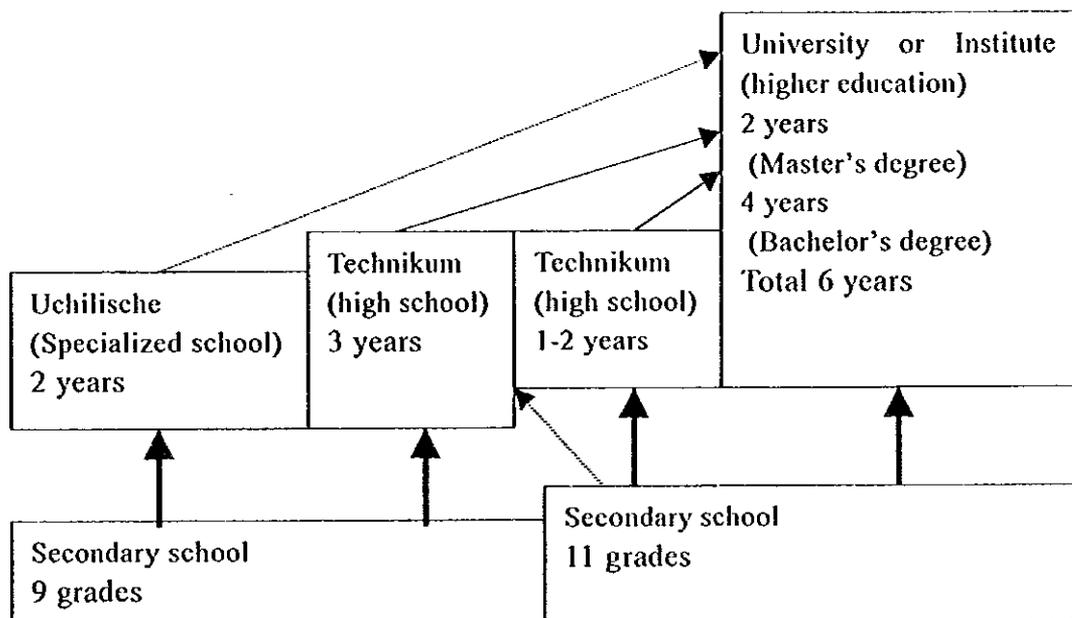
JICA Study Team, 1999

## 2) Schools

### ii) System of Education

Computer education is studied at schools and institutions. An overview of the education system in Uzbekistan is described below:

Fig 2.3.1 Education System in Uzbekistan



Compulsory education is offered at secondary schools, although only good pupils can receive the optional final two years of education. After secondary school, students go to Uchlische (specialized schools), Technikum (high schools) or university. After graduation from Technikum, many people go on to university.

### ii) Status of Computer Education

Table 2.3.10 indicates the present situation of computer training at various levels of educational institutions. We selected 15 universities from all over Uzbekistan and 5 schools each from the Uchlische, Technikum, and secondary schools in Tashkent. We selected secondary schools that are said to be performing comparatively better.

It is understood that computer training at educational institutions in Uzbekistan is substantial. Only four schools out of thirty do not provide computer and training courses. It is remarkable that all secondary schools offer a curriculum of computer education.

Table 2.3.10 The Status of Computer Education at Schools

No.	School Name	Type	Number of Students	Age of Students	Courses which computers are used	Computer Training Programs	Comments
1	Tashkent State Economical University	University	3,500	17-35	Economics	Informatika*	
2	Tashkent Institute of Engineers and Transportation	University	1,080	17-35	no	Micro processing technology, Informatika, Applied programming, New technology	
3	World University of Economy and Diplomacy	University	1,000	17-35	Mathematics, Mathematics method in Economics, Law, Language, Marketing foreign relations	Informatika: basic knowledge, structure, Windows:Excel, Word and Access for Economists	Students study through the internet: Economic Geography, History.
4	Tashkent Musical University	University	500	17-35	Musical programming	Informatika	They study musical programming to write music notes.
5	Tashkent Institute of Automobile and Road Construction	University	3,500	17-35	no	Informatika	Computers are utilized for all exams.

No.	School Name	Type	Number of Students	Age of Students	Courses which computers are used	Computer Training Programs	Comments
6	Institute of Irrigation and Mechanisation of Agricultural Culture	University	5,000	17-35	Ecological faculty	Computer course: basic, Mathematics modeling, Computer operator: Dos, Norton, Windows	
7	Tashkent Architectural Construction Institute	University	2,500	17-35	Design faculty: AutoCAD, Computer graphic	Informatika	
8	Institute of textile and light industry	University	3,000	17-35	all	Informatika	Students use computer at the all faculty for their study and work.
9	Eastern University	University	2,500	17-35	no	Informatika	Students study PASCAL on the first course, Windows on the second course and Basic in Magistratura.
10	Juridical Institute	University	over 2000	17-35	no	Informatika	They study only Windows on the first and second courses.
11	Andizhan State University	University	1,700	17-35	Economics, Foreign	Informatika	
12	Urgench State University	University	3,500	17-35	no	Informatika	

No.	School Name	Type	Number of Students	Age of Students	Courses which computers are used	Computer Training Programs	Comments
13	Fergana State University	University	over 5000	17-35	Economics, Mathematics, Language	Informatika	
14	Gulistan State University	University	1,500	17-35	no	Informatika	
15	Karshi State University	University	3,500	17-35	no	Informatika	
16	Namangan State University	University	more than 2000	17-35		Informatika	
17	Polygraphic technikum	high school	500	15-19	no	Informatika	
18	Technikum of culture	high school	1,000	15-19	no	no	
19	Accounting technikum	high school	1,150	15-19	Taxation, Bank matter, Insurance, Finance, Accounting	Informatika	This school is Government project from this year. After 9th class students study for 3 year.
20	Commercial technikum	high school	300	15-19	no	no	
21	Electric-metal uchilische	specialized school	500	15-19	no	no	
22	Railway uchilische	specialized school	520	15-19	no	no	
23	Pedagogical uchilische	specialized school	1,000	15-19	no	Informatika	
24	Construction uchilische	specialized school	970	15-19	no	Informatika	
25	Aviation uchilische	specialized school	900	15-19	no	Informatika, Programming	

No.	School Name	Type	Number of Students	Age of Students	Courses which computers are used	Computer Training Programs	Comments
26	Secondary school # 17	secondary school	1.900	7-17	no	Informatika	9-11 classes study Windows and a little bit programming.
27	Secondary school # 18	secondary school	1.618	7-17	no	Informatika	11th class study Windows.
28	Secondary school # 50	secondary school	1.368	7-17	no	Programming. Informatika	Physics and Mathematics classes study Informatika very thoroughly; the school has computers from 1st to 11th classes.
29	Secondary school # 64	secondary school	1.500	7-17	no	Informatika	
30	Secondary school # 110	secondary school	2.700	7-17	no	Informatika	

JICA Study Team, 1999

\*Informatika - Learning computer and computer programs

- No.1-10 Tashkent Universities or Institutes (higher education)  
 No.11-16 Region Universities (higher education)  
 No.17-20 Tashkent technikums (One can enter after finishing 9 classes of a secondary school and study 3 years or after finishing school and study 1-2 years)  
 No.21-25 Tashkent uchilishches (One can enter after finishing 9 classes)  
 No.26-30 Tashkent secondary schools (one of the best schools listed above)

### 3) Computer Publications

In this section we study information technology publications and computing in Uzbekistan.

Table 2.3.11 lists some magazines and papers that are widely available in Uzbekistan. These magazines and papers were delivered on the day following the order to a large bookstore in Tashkent. Table 2.3.11 summarizes the results of our interviews with local publishing companies.

It is common for Russian periodicals to be imported only for subscribers. Latest months magazines were not available for the Study Team, since the order by the Study Team was not a monthly subscription. It should be noted that the number of circulation indicated in the Table include both domestic (Russian) and overseas subscriptions.

Various types of magazines for end-users are available in Uzbekistan. But very few articles are written for computer specialists such as systems engineers and the related books and magazines are published in Uzbekistan. Moreover, the subscription fee for Russian magazines in Uzbekistan are nearly ten times as expensive as the domestic subscription fees in Uzbekistan, and thus these publications are not affordable for most individual users.

Table 2.3.11 Computer Publications

Computer Publication	Type	Subject	Country issuing the publication	Circulation	Frequency	Price in sums	Contents	For whom
Computer	magazine	Computer and telecommunication	Uzbekistan	5,000	twice a week	120	News of Uzbekistan, names of Universities where you can get education in PC area, PC digest, Internet news, computer market, games, advertising for PC-companies.	For all users
PressITJ	magazine	Price information	Uzbekistan	n/a	weekly	60	Advertising and prices of everything including computers .	For all users
PC world	magazine	Most popular	Russia	45,000*	monthly	3323	News, multimedia, software and hardware information.	For all users
Hard'n'Soft	magazine	Most popular	Russia	25,000*	monthly	2591	News, trends, new products, programs, internet games, multimedia.	For all users
PC magazine	magazine	Most popular	Russia	n/a	monthly	3,328	Detailed information about current IT.	For all users, more for specialists
PC week / Russian edition	newspaper	Most popular	Russia	35,000*	weekly	4,431	IT news.	For all users
Home computer	magazine	Home computers	Russia	30,000*	monthly	1,385	News on hardware and software, simple explanation of programs and advices, games.	Simple information for all users
You and your computer	magazine	Home computers	Russia	15,000*	monthly	4,416	Internet, games, cd information, also technology, education.	Popular magazine for all users
LAN	magazine	network magazine	Russia	10,000*	monthly	1,872	Network and telecommunications news.	For all users
Network	magazine	network magazine	Russia	13,000*	monthly	4,431	Network and telecommunications news.	For experienced users, more for specialists
Mega plus	magazine	Price information	Russia	20,000*	monthly	1,246	Price information and computer advice.	For all users
Computers and office equipment	magazine	Price information	Russia	46,000*	twice a week	1,108	Advertising and price information.	For all users

\* : not only in Uzbekistan  
JICA Study Team, 1999

## **(5) Banking System**

### **1) Banking System in Uzbekistan**

Outline of the banking system in Uzbekistan is as follows:

#### **i) Types of Banks**

In Uzbekistan, many people have not yet opened bank accounts nor do they use a bank settlement system, which is only for the industrial sector and private enterprises.

Banks are generally divided into 2 categories: the central bank and commercial banks. The former is the Central Bank of Uzbekistan, which oversees and guides other banks. Commercial banks include joint-stock banks, foreign joint banks, private banks and national banks. The state holds many of these banks' shares. Even if the banks are private, their stockholders are private individuals and the state. "Commercial" means simply doing business or offering services.

Joint-stock banks include the Asaka Bank, Pahta Bank, Aloka Bank etc. They almost always offer their services to a certain industry. For example, Asaka Bank serves the automobile industry. Pahta Bank, is related to the cotton industry, and Aloka Bank specializes in communications. The particular industry served owns the stock of bank.

The national Bank for Foreign Economic Activity of the Republic of Uzbekistan (NBU) and People's Bank (Khalk Bank: Uzbekistan, Narodnyi Bank: Russian) are national commercial banks. The people's Bank started to provide services a long time ago during era of the Soviet Union. It was re-established in 1995 based on the Savings Bank (Omonat Bank: Uzbekistan, Sber Bank: Russian). Now it is a national joint-stock bank with a share of the state. The People's Bank has many cash offices all over Uzbekistan.

## ii) Major Banks in Uzbekistan

The four major banks in Uzbekistan are: the National Bank of Uzbekistan (NBU), Special State Joint-Stock Commercial Bank; the Asaka Bank, Special Joint-Stock Commercial Bank; the Pahta Bank and Jointstock Commercial Industrial Construction Bank; the Promstroy Bank (Industrial & Construction Bank, "PSB"). Table 2.3.12 shows the capitalization of these banks.

Table 2.3.12 The Four Major Banks

Bank	Number of Branches	Capital (millions of US Dollar)
NBU	82	*308
Asaka Bank	20	**150
Pahta Bank	approximately 200	***40
PSB	approximately 300	***41

\* 1996 Data

\*\* 1998 Data

\*\*\* 1999 Data

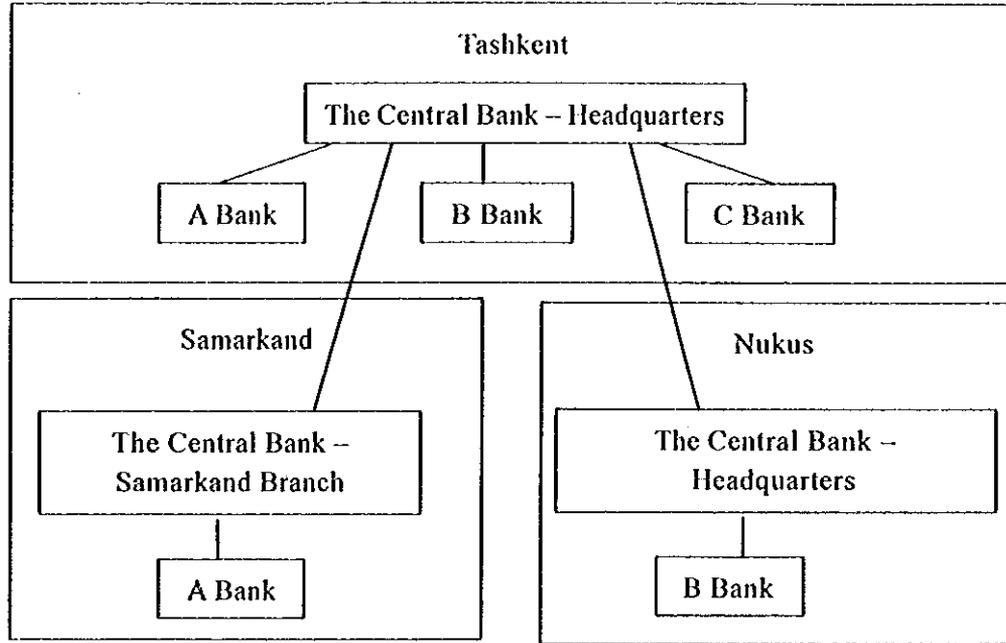
The current banking system in Uzbekistan started in 1992 and it is still dependent on the Government. There is a government plan to decrease its share in banks which are majority, e.g. Asaka Bank, Pahta Bank 49%, but it is uncertain when the plan will be carried out. We learned from bank officials that the Government intends to introduce self-supporting systems for the major banks which also have various plans relating to de-regulation.

## 2) Status of Computerization in Banks

All internal transactions between enterprises are carried out via the Central Bank of Uzbekistan. Namely the Central Bank acts as a control center.

A system of electronic payments has been created inside Uzbekistan. The common global electronic network connects Approximately 900 commercial banks. Electronic payments mean computer payments, non-cash settlements. Fig 2.3.2 shows an outline of the system .

Fig 2.3.2 Banking System



The lines of Fig 2.3.2 show the computer network. The Central Bank local in Tashkent is the main settlement center in Uzbekistan and it has its branches in all provinces of Uzbekistan. It is a state regulatory body. The computer network is the property of the Central Bank. Private banks are also connected to this network. The Central Bank renders banking services to all private banks on a certain commission.

For example, payment data from the Nukus branch of a certain bank can be received by the Tashkent branch via the Central Bank. Theoretically and under optimum conditions, it takes only 15 minutes to transfer data. Actually, it takes about three days for a payment to be transferred from the payer's bank account to the receiver's bank account.

The implementation of the above system was a milestone in the development of the banking system in Uzbekistan.

### **3) Banking System and Tariff Collection**

A banking system usually handle two aspects of tariff collection; one is tariff collection from enterprises and the other is tariff collection from the general public.

#### **i) Settlements for Enterprises**

The aforementioned banking system (the interbank dealing system) is adapted for tariff collection from enterprises and the public service sector.

When Vodokanal collects tariff from an enterprise, it submits a "payment order" (or request for collection) to the Housing Savings Bank (Uzjilsberbank), which is the main bank of Vodokanal. The payment order specifies the name of the enterprise, the bank account number and the amount to be charged, and the Housing Savings Bank transfers the amount from the bank account of the enterprise to Vodokanal's account. Vodokanal is informed when the transfer has been completed.

If the balance of Vodokanal account is sufficient, the condition of telecommunications is good and other conditions are also good, it takes three days to complete the transfer explained above. The transfer if data between Vodokanal and the Housing Savings Bank is currently carried out by exchange of EDP output, etc. manually.

#### **ii) Settlements for the General Public**

Occasionally users in the general public users pay at joint-stock commercial banks. Most users pay at post offices or cash offices, which are branch offices of the People's Bank.

As mentioned above, the People's Bank was established as a reconstitution of the Savings Bank in 1995. The stockholders of the bank are the Ministry of Finance and the Central Bank of Uzbekistan. However, the bank is not under the jurisdiction any ministry, and its only controlling body is the Central Bank.

The People's Bank has 15,000 employees and 6,500 branches in Uzbekistan. There are 11 head branches covering all districts of Tashkent and 500 branches in each Mahalla of the city. Besides the 6,500 branches, they have introduced a pilot project, a so-called "bank on wheels" (a special vehicle for collecting tariffs for public utilities from the population), which has already been operating in the Sergely District.

The People's Bank offers services not only for users in the population but also for small and medium-sized enterprises and companies. The main roles of the bank are to handle payment of pensions and receiving the tariffs for public utilities, and to open deposit accounts of the population. However, bank deposits are not popular now, because of the high rate of inflation in the country (1999).

The People's Bank has internal computer network, and all branches can be interconnected. All information about payments is available at the district branches of the People's Bank.

## **(6) Analysis of Computerization in Uzbekistan**

The following items are identified as the key external factors when Vodokanal is computerized:

### **1) Training of Computer Specialists**

Computer specialists with high skills should play a key role in implementing a useful system in Vodokanal as well as in promoting IT-related industries.

The needs and interests of computer users have become greater, as shown in the statistics for publications and trades. However, the lack of computer specialists to respond to these needs is evident.

There are various reasons why human resources in the IT industry in Uzbekistan is scarce. First, the core function of the IT industry in the country is sales. The software production business is still in its early infancy. It is assumed that the number in employees working at information and computing services decreased rapidly, because market for the production of computer software declined. The information technology sector has seen dramatic innovation for recent ten years, e.g., the Windows system and downsizing. Many specialists left the IT industry during this period high skilled training is not given to computer specialists, then the IT industry in this country could decline even further.

Secondly, foreign investors are not very active in this country, e.g., computer giants such as IBM and Microsoft have already closed their businesses. In India, software development has become one of the country's core businesses because there is a policy to attract western investors to the country, namely, the investors have established computer training institutes where modern technology has been transferred while cheap labor is supplied.

Thirdly, computer hardware components, even outdated models, are very expensive on the local market. As a result, the computer equipment for training is scarce and it is difficult to educate many engineers efficiently. Basic computer training is widely available at schools. And now it is necessary for the country to facilitate a higher level of computer training so as to produce more specialists with higher skills.

A computer system will need maintenance after it is implemented at Vodokanal. It is inevitable that the systems will have to be modified in accordance with various changes, e.g., revisions to the tariff policy, Vodokanal, social circumstances etc. External human resources may be required to maintain the computer system unless Vodokanal staff themselves cannot cope with it. External computer institutes and companies will also have to be used to train Vodokanal staff to catch up to brand-new technology.

However, the computer industry in Uzbekistan is still too fragile to offer adequate services to its customers including Vodokanal. Computer specialists, whether they are internal or exter-

nal, will be required in order to maintain the computer system at an adequate level

## 2) Improvement in the Payment System

Improvement in the payment system involving banks and post offices is one of the most important elements to consider when implementing a revised tariff collection system.

It is usually safer and more efficient to make payments of tariffs and other debts through financial institutions rather than by paying directly in cash. In Japan, most companies use a payment system via various financial institutions.

In Uzbekistan, payment via financial institutions is the system mainly used by companies and most individuals pay in cash, while in western countries banks are commonly used not only by companies but by individuals as well. For example, in the United States, payments via financial institutions by check, credit card, debit card on automatic deduction are widely used by individuals rather than payment in cash.

It is desirable to enhance a payment system via financial institutions if Vodokanal implements a new tariff collection system. If the end users open accounts in banks or post offices, the tariff collection procedure will be simplified. In Japan, nearly 80% of the users settle their water bills by automatic payment system.

However, it is difficult to promote payment via banks under the current circumstances. The present settlement system of the Central Bank is operated for companies only. The individuals are usually excluded from the payment system via banks because of various reasons, e.g., the rate of high inflation, behavior, lack of credit with banks, etc.

It is hoped that opening bank accounts will become more common among ordinary citizens.

### **3) Legislation Regarding Information Technology and Computer Software**

It is essential to enact the laws in terms of information technology and computer software, in order to empower the local software market and the human resources engaged in the computer industry. The Vodokanal systems will also benefit from such legislation in that they can be protected from various threats including robberys and computer hackers.

It is generally said that the value of intangible intellectual property items such as computer software is not recognized properly and that it is difficult in actual practice to protect it. Without protecting the copyrights of computer software, systems development will not attract investors and, as a result, the computer industry will shrink. Software will continue to be pirated and circulated if the most severe penalty is only the forfeiture of the pirated items.

There is also the need to enact legislation regarding computer security in order to prevent unauthorized access to computer systems and software. While Wide Area Networks (WAN's) are not common in the country, there are many e-mail and Internet users and some of them may be able to go beyond the firewalls of protected computer systems. Practical ways of preventing hackers from entering into such systems are needed.

### **4) Telecommunications Infrastructure**

The telecommunications infrastructure is another key factor to implement payment via banks for an improvement into efficiency of the tariff collection system.

The present telecommunicationd facilities are so outdated that important information may not be transmitted properly. The rate of digitalization is very low and therefore is to transmit bulk data.

The networking of computers located at different premises will greatly improve the efficiency of the system as the information can be transferred between sites on a real-time basis, although even a stand-alone computer itself is useful. The telecommunications sector is the fundamental component of the infrastructure which is necessary for the development of information

technology and the computer industry.

The Vodokanal systems will be largely efficient if they can exchange information with banks and with Vodokanal's district branches. It is hoped that the telecommunications infrastructure in the ROU will soon be upgraded.

### **2.3.2 Foreign Assistance to Water Supply Projects**

Water supply projects which are being implemented in the whole Republic of Uzbekistan (other than this JICA Study) are summarized in Table 2-3-13. Of these only the Bukhara and Samarkand Water Supply and Sanitation Project is still pending final agreement between the Bank and the Government of Uzbekistan. The agreement is expected next year according to the Bank. Right now, there are no foreign-assisted projects operational in the water sector in either Tashkent City or Chirchik City. Additional information provided by the World Bank and the Asian Development Bank are noted below.

#### **(1) World Bank**

According to the Bank, there are two other projects, which were under preparation as of December 1999, and detailed information on these was not made available to us.

- 1) The Water Sector Study, which is under consideration by the Government;
- 2) The National Environmental Action Plan, completed and approved by the Government in September 1999, and officially made public on December 10, 1999. Financiers for implementing the studies/projects in the plan are now being sought. The Bank's official informed the Team that they intended to take up an environmental pollution improvement project in Bukhara and Samarkand, which included a water quality improvement component as part of the action plan.

The Bank's official also said that they have chosen the improvement of the water supply system and the water distribution network as medium-term and long-term targets for the Government of Uzbekistan.

Table 2.3.13 Project Summary Table with Foreign Financial Support in Water Sector in Uzbekistan

(as of September 1999, except World Bank Projects)

#	Name of the Project	Name of Organization Involved with the Project	Purposes of the Project	Areas to be covered	Period for Initial Survey	Period for Implementation of the Project	Financial Support
1	Improvement of drinking water production and distribution in Samarkand City	Treasure de France (Loan agreement) and the State Budget of the Republic of Uzbekistan	Improvement of the technology of drinking water production and distribution in Samarkand City	Samarkand Region Samarkand City	April 1998 - July 2001	July 1999 - July 2001	Loan of FFr 26,800,000 from the Treasure de France or \$ US 6,000,000 - The State Budget of the Republic of Uzbekistan
2	Installation of water cleaning equipment for drinking water supply of Muinak City	Treasure de France (Loan agreement) and the State Budget of the Republic of Uzbekistan	Improvement of the drinking water quality of Muinak City (7.5 m <sup>3</sup> per hour - 5 Station with output of 1.5 m <sup>3</sup> per hour)	Priaralie, the Republic of Karakalpakstan, Muinak City	November 1997 - November 1999 On the tender basis for the choice of technological equipment	October 1999 - April 2000	Loan of FFr 6,000,000 from the Treasure de France or \$ US 1,000,000 - The State Budget of the Republic of Uzbekistan
3	Reconstruction of the sewage system in Nukus City	Grant Aid of Swiss Confederation and the State Budget of the Republic of Uzbekistan	Increase in reliability of sewage system of Nukus City and expansion of the coverage	Priaralie, the Republic of Karakalpakstan, Nukus City	March 1997 - December 2001	December 1998 - January 2002	Grant Aid of SFr 6,250,000 denominated in UZS of the Republic of Uzbekistan
4	Drinking water supply to rural population of Khorezm region	KfW German Development Bank (Resolution # 424 of 06.08.98)	Improvement of rural infrastructure in the Zone of Ecological Calamity	Priaralie, Khorezm region	May 1999 - October 2002	November 1999 - October 2002	Low Interest-rate Loan of DM 20,000,000 from the KfW German Development Bank, Grant Aid of DM 3,000,000 (the State Budget of the Republic of Uzbekistan)
5	Improvement of drinking water supply services in Nikus and Urgench Cities	Kuwait Fund of Arabian Economic Development and the State Budget of the Republic of Uzbekistan	Improvement of water supply services in the regional centers of Priaralie	Priaralie: Karakalpakstan (Nukus City) Khorezm Region (Urgench City)	October 1994 - December 2001	September 1995- December 2001	Loan of \$US 20,000,000 from the Kuwait Fund of Arab Economic Development and the State Budget of the Republic of Uzbekistan of \$ US 1,000,000 denominated in UZS
6	Bukhara and Samarkand Water Supply and Sanitation Project	The World Bank	Rehabilitation of Water and Wastewater Utilities	Samarkand, Bukhara Cities	June 30, 1999 - December 2004	November 1999 - December 2004 (not finalized)	Loan of the World Bank (size of the loan not finalized)
7	Water Supply, Sanitation and Health Project	The World Bank	1) rapid provision of safe water for drinking and household use 2) rapid provision of appropriate sanitation facilities 3) raising the population awareness to the role that water and sanitation play in improving health, thereby promoting proper use of facilities are insuring sustainability	Karakalpakstan and Khorezm Oblast	January 31, 1997- December 2001	Mid - 1997 Mid - 2005	W/B 75.0m\$ (64.1%) Kuwait Fund 19.8m\$ (17.0%) KfW 9.4m\$ (8.1%) GoU 12.7m\$ (10.9%)

(Source: Ministry of Macroeconomics and Statistics;  
World Bank for the Projects financed by the Bank, as of December 7, '99)

## **(2) Asian Development Bank (ADB)**

ADB has extended a loan for US\$50 million for the development of small and medium scale enterprises (SMEs) in rural areas, with the National Bank of the Government of Uzbekistan as the lending agency. The loan comprises a couple of sub-loans extended to SMEs engaged in water bottling. The Bank has been negotiating with the Government of Uzbekistan to add an urban infrastructure sector and a financial sector to the bank's existing four business sectors: roads, railways, school textbooks and rural enterprise development. The urban infrastructure sector, which is likely to be taken up, will include certain water sector projects. If prior technical assistance and technical preparation can be finalized in 2000, the related projects are expected to be implemented during 2001 and 2003.

### **2.3.3 Coordination for Receiving Foreign Assistance and its Implementing**

The final decision-making body for receiving foreign assistance in the Government of Uzbekistan is the Department of Foreign Economic Relations with Asia and Pacific Region Countries of the Ministry of Foreign Economic Relations, which coordinates the ministries/agencies and project implementing bodies. Requests for foreign financial and technical assistance raised from various ministries/agencies and other related parties in the country are officially posed to various donor countries through their embassies or the equivalent consulates or offices in the Republic of Uzbekistan.

Based on our own experience and the lessons learned during the course of this JICA Study, the following points are advised for future effective coordination for foreign assistance received.

(1) Expansion of institutional capacity and manpower including the number of staff in the Department of Foreign Economic Relations with Asia and Pacific Region Countries of the Ministry of Foreign Economic Relations, for the improvement of communication between the Department and the donor countries' agencies.

(2) Transfer of the power and functions of the related ministries/agencies currently concentrated to a specific person of high authority to a lower and subordinated department/section/officer, for efficient communication between the agencies of the donor countries and the Government of Uzbekistan and well-coordinated project implementation. This will also contribute to sustained project formulation and to effective management.

(3) Improved communications between the ministries/agencies as well as within each ministry/agency to avoid unnecessary time spent in communications/explanations from the donor side including foreign consultants to the Government of Uzbekistan.

(4) More openness about providing the donor side including these foreign consultants with the related information and data.