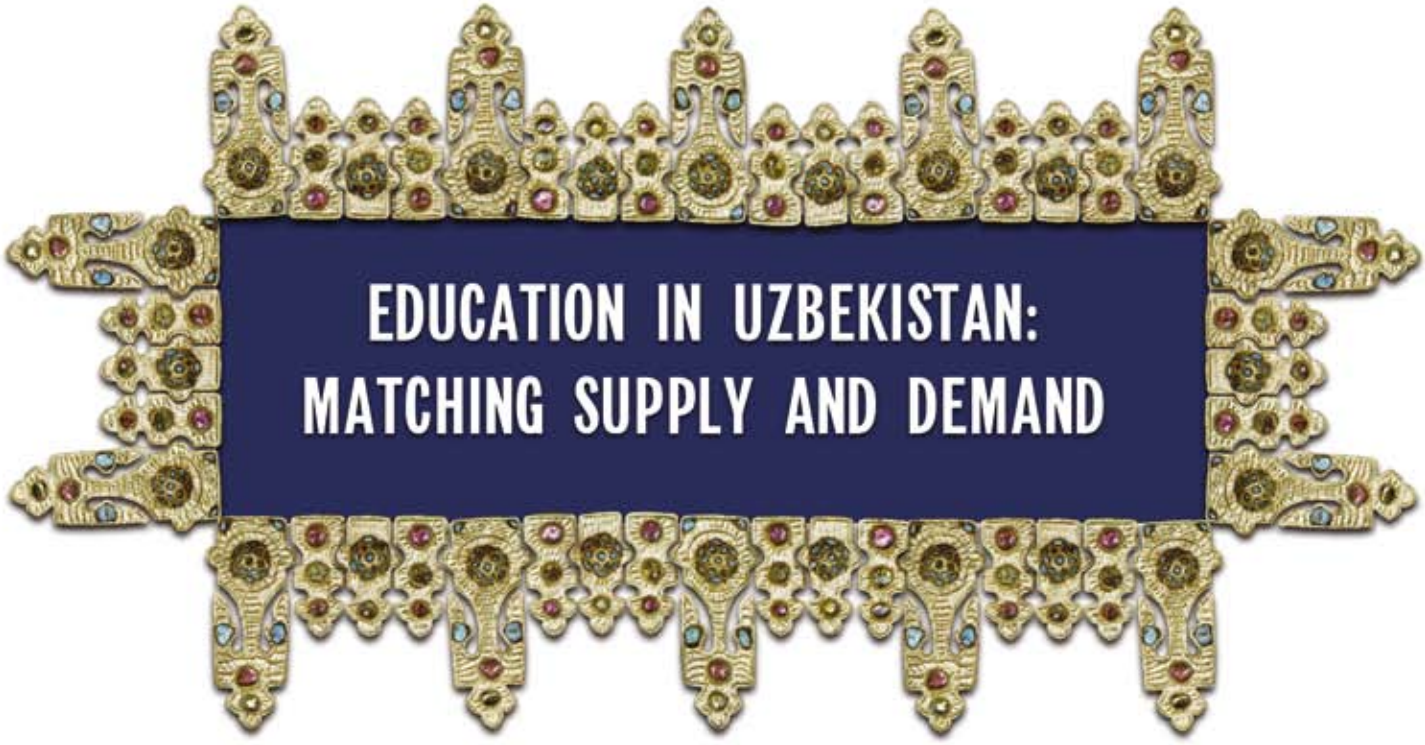
EDUCATION IN UZBEKISTAN: MATCHING SUPPLY AND DEMAND



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FOREWORD

I am happy to introduce the latest National Human Development Report for Uzbekistan, in a series UNDP has been producing since the mid-1990s with a view to provide an in-depth assessment of the situation in priority areas of national development and make recommendations for the future. In this report, we are focusing on education, a central pillar of human development and a primary coverage of the Millennium Development Goals.

Uzbekistan is in an enviable position in the developing world since it boasts a literacy rate that even many industrialized nations cannot match. Hence, the challenge for Uzbekistan is at a higher level of achievement—to improve the quality of education, maintain wide access and lifelong learning for a population that will ensure Uzbekistan a significant position among the community of nations. Already the Welfare Improvement Strategy provided last year a more detailed articulation of education needs in the service of national development over the near term. This particular report expands on that and provides much information, statistics, analysis and recommendations in support of national and international partners engaged in Uzbekistan's development endeavors.

Among the many dimensions of education articulated in the report, I would like to emphasize a few that the United Nations holds especially dear:

- Education as a fundamental human right, targeting full development of the human personality, the strengthening of respect for all rights and fundamental freedoms, as well as to promote understanding, tolerance and friendship among all nations.
- Education for social cohesion and a harmonious nation will have to start with the family, which is every child's first school and remains a principal source of support and motivation for learning. What children learn at home is precious and indispensable to their development. The United Nations sees the promotion of education not merely as a worthy and necessary end in itself, but as the means to building the foundations of peace in the minds of people. Unless we teach and learn harmony, tolerance, understanding and peace in our homes and families, we will be ill-prepared to practice those virtues in our communities.
- Lifelong learning is important to maintain an educated adult population who are both able to provide a proper growth environment for their families but also to contribute productively to their nation's economic growth, which is vital to support all the desirable social goals. The many technological tools now available greatly facilitate learning opportunities for all ages and irrespective of the distance from the great centers of learning.

- Education's pivotal role in life demands active involvement by the citizen, the civil society and the private sector, to enrich and supplement the role of the public sector both in planning and running education initiatives.

Many of the above plus much more are highlighted and broadly discussed in the coming pages. I hope that this National Human Development Report will help prove valuable in the evaluation of the education reforms thus far planned and put into action in Uzbekistan, as well as complementing the Welfare Improvement Strategy during its implementation over 2008–2010. UNDP is committed to support the people of Uzbekistan in achieving sustainable development and improving living standards throughout the country.

Fikret Akcura
UNDP Resident Representative

ABBREVIATIONS LIST

ADB	Asian Development Bank
AIDS	Acquired immune deficiency syndrome
CIS	Commonwealth of Independent States
CPI	Consumer Price Index
DSE	German International Development Fund
GDP	Gross Domestic Product
GNP	Gross National Product
GOST	State Educational Standards
GTZ	German Technical Cooperation Society
HD	Human Development
HDI	Human Development Index
HDR	Human Development Report
HIV	Human immunodeficiency virus
ISEC	International Standard Classification of Education
JBIC	Japan Bank for International Cooperation
JV	Joint Venture
MDG	Millennium Development Goals
MoF	Ministry of Finance
NES	National Education Standards
OECD	Organization for Economic Co-operation and Development
PPP	Purchasing Power Parity
SDF	School Development Off-Budget Fund
SSPE	Secondary specialized professional education
SSVE	Secondary specialized vocational education
TACIS	Technical Aid to the CIS
TYUZ	Young People's Theatre
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
USSR	Union of Soviet Social Republics
UNDP	United Nations Development Program
UNICEF	United Nation Children's Fund
WB	World Bank
WIS (PRSP)	Welfare Improvement Strategy

CONTENTS

SUMMARY

Considering the huge role of education in social progress and human development, the international community has developed quite a number of international legal norms which regulate attitudes in the educational sphere. The General Declaration of Human rights and freedom, accepted by UN General Assembly on December 1948, has recognized the right of each person for education and has adopted the principle of inadmissibility of discrimination. It has been declared that any discrimination with regard to education sphere would be considered as infringement of human rights.

One of the Millennium Development Goals is maintenance of universal primary education for each child on the Earth. As for the goals' coverage, present task considers being the only universal one. It calls up the governments, international institutions and donars to create necessary conditions for education for each and every child, but, above all, for those children, who have presently happened to be out of the education sphere.

Education is one of the most important components of human development; and it possesses a core role in solving fundamental challenges. As a key component of human development education determines a governing influence in solving of a number of social, economic, political and humane problems. In the course of all centuries, from antiquity to modern multipolar world, attitude would change towards education, as an integral part of human existence and understanding of its significance. However, frequently the role of education would be considered in clerical and intellectual plan.

By the middle of 20th century education was a tough and locked enough system, being one of essential elements of statehood of any country. By the end of 20th century considerable transformations took place in educational systems of the world: they were caused by qualitative change of living conditions of people in general, at the scope of civilization, and separate individuals. A dynamic development of education recently made it one of the most important factors in evaluation of the human being and community.

The present annual report on human development in Uzbekistan is aimed at problems education—to one of the key parameters making an essence of human being and human development. In the report consisting of four chapters the general tendencies of human development in Uzbekistan, correlation of scholarship index with other indicators of human development are analyzed.

The authors of the report emphasized their attention on research of the condition of education mainly in Uzbekistan, comparing to the rest of the world. Communication between education and human development has been consistently analysed, attention aimed towards the present condition of economy and social policy of the Government. Authors have done a huge work by writing one of the chapters in the form of the review of all education system. I this chapter all achievements

and successes are very precisely designated, and so are the barriers on a way to the further improvement of an education system. Logical end of the report is the final chapter which designates the basic priorities of the further development of an education system; recommendations for more effective development of an education system for the good of higher level are given.

CHAPTER 1. EDUCATION AS THE BASIS OF HUMAN DEVELOPMENT

The main purpose of human development is the creation of the political, economic, social and natural resource environment that would allow people to secure both their material welfare and also the opportunity to enjoy healthy and constructive lives.

In the concept of human development education is one of the most important components. In the course of human civilization high rates of development in education, often accompanied by high rates of scientific development, have been the most important drivers of social, technological and economic progress.

Statistical data confirms that poverty is very much dependent on the level of education. This is connected with the fact that poorer countries have less financial resources to devote to education. In turn this level of education influences the capacity of the country to increase its labor productivity, and consequently the level of economic development.

In the context of globalization, when the ability of a country to innovate gives it a competitive edge, high levels of educational achievement no longer guarantees membership to a prestigious 'elite' group of countries - it is now an absolute necessity for survival and achieving economic and political independence.

Countries with a more educated population have a greater chance of developing production and creating new jobs. As a rule, in such countries both the unemployment rate is lower as well as levels of emigration of the potential workforce in search of jobs. An educated person can more easily find a job than a non-educated person. The unemployment rate in any country is higher in the uneducated layer of the population.

Education is directly related to the health of the population and life expectancy, another indicator of human development. The Uzbekistan Human Development Report 2006 states that "more educated people take better care of themselves, take preventive measures, lead a healthy lifestyle, recognize illness in time and seek qualified medical assistance. One should not forget that a better educated population has better job opportunities, higher income and, as a result, better able to pay for timely and well-qualified medical services".

The analysis of long-term trends of economic development and advancements in education in these countries demonstrates that there is a close link between these two indicators. In the long-term there are no rich countries with low levels of education. At the same time, in the short-run and medium term there may be different trends. In past centuries a country could become rich for a period of time as a result of colonial conquests and predatory wars.

In the modern period a country can become rich as a result of possessing highly liquid and increasingly valuable natural resources.

Yet in the context of globalization and growing international competition, these riches are only sustainable if they are supported by a growing level of education and effectively translating knowledge into economic development.

This can be proved if we compare the key parameters of human development: the education and GDP per capita indices.

When countries are grouped in the main three categories of income the education index does not always correlate with a high GDP index. However when they are divided into smaller groups the relationship becomes evident: with an increased index of education, the GDP index also grows.

In determining the impact of education on the formation of the spiritual and intellectual needs and abilities of people, specific features of education are usually considered from three interrelated perspectives: those of state, society and the individual.

On the individual level –the fullest self-realization of an individual is to develop his or her intellectual abilities. At the same time it is the acquisition of general and professional knowledge that creates new job opportunities. Educated people are spiritually richer; their life is full of other values besides material ones. Education allows people to satisfy their spiritual needs, make life more interesting and harmonious.

On the state level—the government should be interested in the development of the intellectual potential of the country. During this period of the expansion of the 'knowledge economy', education becomes an important component of economic development and accumulation of national wealth. The spiritual wealth of the population is organic and naturally gives rise to a legal culture, as well as an ability of the population to live and work in a free, democratic and legitimate state. As such people can properly use their rights and freedoms for the benefit of the people, the state and society.

On the society level education should be focused on the formation of universal spiritual values. Also, it should be focused on the formation of a public mind-set and global outlook, aimed at the development of human society. Only educated and spiritually rich people can form a society which is able to resolve disputes without wars. Really educated and well-bred people will never in any circumstances accept violence, or any manifestation of terrorism and hostile confrontation. Only spiritually rich people can place global ecological problems higher than their own problems and the problems of individual nations and governments.

The intellectual development of society is the basis for social progress, without which scientific progress is impossible and discoveries of global importance for humanity cannot be made: it secures the very sustainability of human society.

The education system that emerged at the beginning of 1990s in the post-Soviet and post-socialist world preserved many features of the Soviet model. This Soviet model had some positive features such as access to free primary and secondary education for all groups of the population, and the fundamental and technical focus of educational curricula at all levels of learning.

At the same time, economic recession, which brought about the collapse of the USSR and the breakdown of the socialistic bloc at the end of the 1980s, had a destructive impact on standards of living of the post-Soviet countries. Strict governmental regulation of the education system, which has been the norm in socialist countries, made the system helpless in the conditions of economic crisis.

The problems encountered by these newly independent countries in the sphere of education at the beginning of the 1990s were more or less the same: Financial problems, Problems of content and quality of education, Problems of educational access, Problems of demand for education, Problems of educational facilities.

The main challenges and objectives faced by the governments in transition economies during this period were:

1. Clearly identifying and then overcoming the factors undermining the previously strong educational system such as the loss of teaching staff.
2. Setting clear targets related to the new goals and standards - implementation of an organizational and methodological transformation with the focus on new objectives and targets.
3. Creation of a new system of governance, with the aim of ensuring effective reform of education at all stages in accordance with the principles of a market economy and global challenges.
4. Transition of the education system based on new principles of financing, aiming to accumulate sufficient funds to maintain high levels of effectiveness.
5. Stimulate the demand for qualified professionals being prepared at secondary, specialized and tertiary educational establishments, and increasing the status of the profession of teacher in society.
6. Reconsider the previous approaches to education, in particular rejecting the principles of ideologizing and politicization, strengthen the humanities focus of the educational system without losing the inherited fundamentals and strong technical basis of education.
7. Improving facilities

CHAPTER 2 HUMAN DEVELOPMENT IN UZBEKISTAN

The ideas and key themes of the concept of human development are not only familiar to the people of Uzbekistan, but are also woven into their aspirations and understanding of life. For Uzbek people the traditional words of greeting used when they meet each other and say farewell are a wish for a long, healthy, productive and good life.

In calculating Uzbekistan's HDI we can see that the biggest impact is made by the education (40.45%) and life expectancy (34.92%) indexes. These indexes are quite high in Uzbekistan and are very similar to these indicators in the most developed countries of the world.

What is also clear is that Uzbekistan lags behind the developed economies of the world and many other countries in its average growth rate of GDP per capita. The future growth of this indicator can bring about a higher HDI in Uzbekistan.

Due to the high birth rate at the end of the 1980s, the share of young people aged 19–24 grew significantly. Such a situation creates an additional burden not only on the further education system, but also on the labor market.

As a result of the demographic trends described above, the proportion of able-bodied, working age within the population has been growing over the last 15 years.

Up until 2005, in order to provide jobs for the growing number of the able-bodied, working age population, more than 250,000–300,000 new jobs needed to be created each year. Given the large number of people already seeking jobs before that period, currently there is a need to create each year 550,000 new jobs.

However given the economic recession of 1991–1995 and the profound economic restructuring taking place then, the number of jobs was declining. This trend was especially noticeable in the non-agricultural sectors. As a result, the employment growth rate could not keep pace with the growth rate of the able-bodied popu-

lation. Many of those having official jobs worked only part-time and wage growth lagged behind the inflation rate.

Between 2000 and 2006 economic growth accelerated. It resulted in the growth of new jobs and improvements in the employment rate, which became especially noticeable during the last three years. During this period the employment rate became comparable to the growth in the able-bodied population, both due to the growth in newly created jobs and also an easing of the demographic pressures on the labor market.

New jobs have been created mainly in the sphere of services. Employment in the agricultural sector has been declining as a result of the various market reforms that have been carried out.

In recent years the share of unofficial employment has remained fairly constant, while the share of unregistered employment has grown. This means that the government should undertake some radical measures to encourage the legalization of unregistered employment, for example cuts in the tax rates on business and, even more importantly, on income.

External labor migration plays an increasingly important role in the labor market. According to the estimations of the Ministry of Labor and Social Security, within the last two years the number of labor migrants was between 300,000 and 360,000 a year. Within one year over 500,000 (up to 5% of the labor force of the country) leave the country for short-term or seasonal work). Labor migrants have become a prominent source of foreign currency income. It has a positive impact both on economic growth and income growth. At the same time government policy towards labor migration should be significantly adjusted. Labor migration should be legalized, and the labor migrants should be better protected in the labor markets of other countries.

Within the last three years the economic growth of the country has been significant. Many new production and construction enterprises, both large and small, have sprung up employing a large number of people. As a result there is a stronger demand for educated and qualified labor. At the same time some structural distortions have emerged in the labor market, particularly a shortage of qualified workers. The lack of engineers for industrial enterprises as well as educated, experienced managers for small businesses has become evident.

The newly established professional colleges as well as the system of higher education are designed to train such specialists for these sectors.

Since 1996 the dynamics of real average per capita income growth have been positive. Within a six year period the annual income growth (adjusted for inflation) was about 16.2%. By 2006 real incomes were almost 2.5 times higher than in 2000.

Between 2000–2006 income grew in all regions of the country, with the biggest growth in those regions with high income rates—in Tashkent city and Navoi region. Such rapid growth in per capita income in these industrially developed regions increased the differences between regions.

Starting from 2000, every three years the average salary in the country increased by almost 2.5 times. As a result, the share of salary in the structure of household income has grown.

Income from various entrepreneurial activities, property and self-employment has been growing at a higher pace. Since 2001 the share of aggregate income from entrepreneurship and from dekhan farms grew from 26.9% to 36.4%. The products produced on private plots of land can be turned into commodities and sold for cash

rather than a source of in-kind household consumption. This result in that the land lots allocated to dekhan farms are being more efficiently and intensively used to produce commodities and generate money income.

Income growth gradually decreases the level of poverty. Poverty assessment is carried out on a yearly basis in the country and covers a representative sample of 10,000 households. The poverty line in terms of food is calculated on the basis of the cost of 2,100 kilocalories consumed per capita per day. Those households whose average expenditure is lower than this indicator are considered to be needy. While calculating the cost of household consumption, the elasticity of family expenses as well as the consumption of products produced by this household are taken into consideration. Given these factors, it was calculated that in 2001 about 6.8 million people were poor, or 27.5% of the population. In 2005 the budget survey showed that the level of poverty had declined to 25.8%. Poverty reduction was especially significant in urban areas, though had also occurred in rural areas.

The northern and southern regions are considered to be where the greatest concentration of needy people live. At the same time the poverty level in the southern regions of the country is falling quickly. It has recently declined by 9.4 percentage points.

Further poverty reduction is dependent on high economic growth rates. The rapid development of industries and entrepreneurship are important factors in poverty reduction. There are also reasons to expect a particular reduction in the northern regions of the country as a result of mining mineral resources at Usturt, and the related production and processing of hydrocarbons and minerals.

In 2006 Uzbekistan demonstrated its strong commitment to implementing this priority.

First, the government continued with its policy of maintaining macroeconomic stability. The inflation rate was at the relatively acceptable level of 6.8% and there was a budget surplus of 0.5% of GDP.

Second, the country continued implementing an export oriented policy aimed at strengthening the balance of trade, not only benefiting from favorable world market prices for raw materials but also increasing the proportion of high value added manufactured goods. The balance of trade now stands at a 2 billion dollar surplus mainly due to raw materials. The share of such commodities in total exports was 59.7%, and their growth rate was 144.5%. The gold and hard currency reserves of the country almost equaled the annual level of imports, having increased four times within the last three years.

Third, keeping to a policy aimed at developing private business. Regulation was eased and the intervention of state control authorities in the activity of business was significantly reduced. Much red tape was cut that had hindered the registration and activities of businesses. A decision was made to reduce the number and frequency of financial statements required by the tax authorities.

The reduction of tax rates and various charges and fines fostered the improvement of the business climate and the investment opportunities of enterprises.

Fourth, an active investment policy is being implemented. In 2006 the amount of capital investment from all sources of financing accounted for 3,838.3 billion soum (109.1% of the 2005 level). Industrial investment accounted for 68.3% of all capital investment. The role of investment provided by sources other than the

central government increased in 2005 to 77.5%. This proportional growth was achieved by increasing the levels of foreign direct investment (116.5% of the previous year), enterprises' own capital (108.5% of the previous year) and loans provided by commercial banks (126.3% of the pervious year). The proportion of investment from domestic enterprises accounted for 48% of overall investment in the country.

Fifth, small business developed dynamically. The proportion of GDP made up by this kind of business has grown to 42.1%, up from 38.2% in 2005. The annual growth of the small business sector has exceeded 23–25%.

Sixth, the on-going agricultural reforms contributed to a relatively strong growth rate in this sector. Agricultural production has increased by 6.2%.

As a result of these measures the growth rate of the economy is 7.3%, and this indicator has exceeded 7% for the last three years.

The population's income is also rapidly increasing. Average wages have increased by more than 30%, and salaries in the public sector have increased by 44%. The population's real income has increased by 22%, therefore it is possible to say that there have been noticeable positive changes in the population's living standards.

All regions have demonstrated relatively rapid economic growth but the gross regional product has grown most rapidly in Andijan, Namangan, Samarkand, Surkhandarya, Tashkent region and in Tashkent city.

There are indications that the growth rate of the economy will reach 8% in 2007, and investment will grow by more than 20%. This will contribute to significant GRP increases in all the regions, and will positively impact on the growth of the population's real incomes and so further reduce poverty.

To significantly increase human capacity, it is necessary to ensure sustainable high economic growth rates that exceed 7–8% annually for a relatively long period of time. Currently Uzbekistan has achieved a relatively high economic growth rate of over 7.3% a year. If this pace it kept up Uzbekistan will have doubled its GDP (using 2004 as the base) by 2015. However, to maintain this growth rate calls for considerable effort.

Continuation of the economic liberalization policy should be aimed, first of all, at strengthening the institutions of private property and the protection of owners' rights. Any proprietor who observes the laws and regulations should be confident that the state will never encroach on his/her property, and neither will it permit anyone else to do such a thing. Growth in investment is only possible when investors are not afraid of losing their capital and when, on the contrary, they expect to earn a return on their investment.

It is extremely important to continue the policy of relieving the tax burden and optimizing the rates of customs payments. This will improve the competitiveness of domestic products both in the domestic market and in foreign markets. Finally it will stimulate manufacturing to exceed domestic demand. Relieving the tax burden will encourage private investment and create a sustainable source of high rates of economic growth.

In the medium-term it is necessary to take temporary measures to selectively support priority branches of the economy. A special 'zero' tax regime can be introduced for them for a 3–5 year period. Such branches include the manufacturing of consumer goods as well as some promising branches of services such as tourism.

Increasing investment in human capital to create a "knowledge based economy". All the above mentioned economic growth factors cannot be successfully implemented without ensuring the appropriate quality of the human capital. Uzbekistan is not behind industrially developed countries worldwide in terms of literacy. However, the quality of the population's knowledge is not adequate in the present situation. Some serious adjustments are required in order to build a knowledge economy.

At present, all over the world the most competitive economies are focused on 'building and selling knowledge'. Such products are presented on the world market in the form of new technologies and the latest equipment. Management methods and market research, along with the methods and techniques for knowledge dissemination, are in great demand and very expensive.

Building and selling knowledge in the specified forms requires very little in the way of material resources. Transportation costs to deliver the ready products to consumers are extremely low. The final cost of this created knowledge, however, is extremely high. As a result, producers enjoy huge advantages over those who are oriented towards just material production.

However, to focus the economy on 'building and selling knowledge', it is necessary to have highly skilled people who are capable of producing this knowledge. It requires a significant increase in the numbers of well-educated people, especially those with an advanced engineering education. The quality of education should be such that it will help experts not only master new technologies and improve them, but also to anticipate new trends and design things currently not even imagined. Moreover, there is a need for the effective integration of industrial and scientific, experimental and design activities.

Experts, who have applied scientific skills and are, at the same time, closely connected to the production process, are best placed to invent these new technologies.

It is very important to have a healthy population for any country aspiring to develop in line with the model of 'building and selling knowledge'. The effective use of the knowledge gained is directly dependant on the long term effective labor activity of those who have acquired this knowledge. High rates of disease and premature death rates result in a waste of the potential of experts and sharply worsen the quality of human life.

Moreover, physically and psychologically healthy people have more opportunities for fruitful work. The effectiveness of creative and scientific activity as well as producing good results are directly related to people's health. Therefore the future economic growth in the country directly depends on investment into the development of human capital. These investments are both the most secure as well as having the highest returns.

Establishing innovation institutions, capable of pushing development of the 'knowledge based economy' is a key condition without which the implementation of this task is impossible. Such institutions could include various government programs for fostering innovation in both large and small businesses. The experience of developed economies has proven the effectiveness of such government supported programs which provide funds for applied research. The world has already elaborated mechanisms for their further commercial use, as well as programs aimed at the transfer of technologies to domestic production. Thus there is a clear need to establish institutions that will effectively implement the government policy in this area.

CHAPTER 3. OVERVIEW OF THE EDUCATION SYSTEM IN UZBEKISTAN

The pre-reform system of education in Uzbekistan had both strengths and weaknesses. On the one hand, it could boast a number of significant achievements:

- All stages of education existed in the country: pre-school, primary, secondary, primary vocational, higher, two-levels of postgraduate, personnel training and upgrading of personnel skills;
- All citizens of the republic had access to all types of education, irrespective of their gender, ethnicity, and religion. Secondary education was general and compulsory and education at all levels was free of charge;
- The level of literacy of the able-bodied, working age population was high.

On the other hand, the legal framework of education system had all the shortcomings typical of a centralized economy:

- Curricula, textbooks, teaching methods and methodology were tightly regulated by the center. Educational establishments and teachers were not permitted to teach using textbooks, teaching materials and curricula not previously approved by the Ministry of Education;
- Education was focused on the average child with average knowledge and abilities, there was little teaching catering to individual needs, particularly for talented children;
- Undemocratic and 'ideology-based' education did not teach schoolchildren to think independently. Pupils and students had imposed upon them ideological dogmas set by the state. Alternative methods and ideologies were not accepted;
- Due to the lack of continuity between general and professional curricula, graduates of secondary general schools did not have a relevant professional orientation and the specific skills required by the workplace. Young people encountered serious difficulties when choosing a profession which catered for their abilities and preferences along with their creative and career aspirations.

This transformation process can be divided into four major stages:

1. **(1991–1997)— preparatory,** when the major problems and contradictions of the education system were identified and analyzed along with the disconnect with the economic and political transformations taking place in society;
2. **(1997–2001)—initial stage,** when the new national policy of personnel training was formed.
3. **(2001–2005) active stage of large-scale** transformations of secondary special vocational education.
4. **(after 2005) perfection and development of the school education system.**

In accordance with the Constitution of the Republic of Uzbekistan all citizens of the country are entitled to receive education. The state guarantees everyone a free general education and school education is under the supervision of the state.

As a result of the reforms the system of continuous education consists of the following institutions providing educational services:

- Pre-school education (for ages 3–7)—by kindergartens, both public and private;
- General secondary education (for ages 7–15)—mainly by state schools, providing free services, as well as by a small number of private schools, providing services on a fee basis;
- Secondary special, vocational education (for ages 16–18)—by state vocational colleges and academic lyceums, providing free services;

- Higher education (after graduation from a secondary special vocational educational establishment)—by universities and institutes;
- Postgraduate education—at universities, institutes, academies providing education (Banking and Finance, Tax, Public Administration), business schools under universities and academies;
- Raising the level of professional skills and personnel training (during the whole career)—at universities, institutions, specialized institutions for upgrading professional skills, and business schools;
- Extracurricular education (while studying at school)– independently and at school;
- Home-based education and self-study.

Pre-school education is the first stage of the continuous education system. It ensures the formation of healthy, developed children, arouses their inclination to learning, preparing them for systematic study. Pre-school education is provided to children until they are aged 6–7 at state or private pre-school educational establishments, and also within the family.

The 9 year general secondary education in Uzbekistan is compulsory and free. It is divided into primary (1–4 grades) and secondary (5–9 grades) education. Education at the 10th and 11th grades has gradually been shifted to secondary special vocational educational establishments. It will sharply decline in general schools during the 2007/2008 academic year and completely stop after 2009.

The aim of general secondary education is as follows:

- Formation of knowledge and skills in accordance with the national education standards;
- Adaptation of children to society and development of independent thinking;
- Formation of a harmoniously developed personality, citizen of his/her motherland;
- Instilling a feeling of devotion to the principles of independence and democracy.

The quality of education and availability of qualified teachers is the most important factor in school education reform.

Compulsory 3-year secondary specialized vocational education (SSVE) is an independent element in the overall system of continuous education. It is provided in compliance with the laws of the Republic of Uzbekistan "On Education" and "National Program of Personnel Training". Though secondary specialized vocational education will only become compulsory as of 2009, currently graduates of secondary general schools already have the right to choose the direction of their further studies—whether at an academic lyceum or a vocational college.

Secondary specialized vocational education is provided on a full-time basis, in two types of educational establishments: academic lyceums and vocational colleges.

The goal of higher education is to provide for the professional training of qualified, competitive personnel meeting the modern requirements of graduates. They must be able to independently work in their chosen areas of knowledge (professions), to contribute to the scientific, technical, economic, social and cultural development of the country and have high moral, cultural and ethical characteristics.

Postgraduate education is targeted at meeting the society's needs for highly qualified scientists and teachers, in line with the creative, educational and vocational interests of individuals.

In contrast to developed countries, where postgraduate education includes studying for a Master's degree and Doctor's degree, in Uzbekistan postgraduate educa-

tion includes the stages inherited from the Soviet system such as the candidate qualification and doctorate. Each stage entails preparing and defending a dissertation with the aim of receiving a Candidate's degree at the first stage and Doctor's degree at the second stage. Study at theses stages can be both full-time and by correspondence, and can be on a competitive basis. Approximately 50% of all defended candidate and doctor dissertations are defended on a competitive basis.

Candidates of science are prepared in 298 scientific directions, and doctors of science are prepared in 60 scientific areas. Though the range of scientific directions is wide, there are no candidates and doctors in a number of priority areas due to the lack of corresponding scientific schools and insufficiency of academics in some specific directions.

Within the period starting in 2000 the number of those studying at candidate and doctoral courses dropped sharply. In 2005 this figure was less than half the figure in 2000. At the same time, the effectiveness of these courses also did not grow significantly. The number of those who graduated from such courses and successfully defended their dissertations increased both in absolute and relative terms. However, the effectiveness of such courses is very low. Only 15.6% of candidate students and 8.6% of doctoral students finish their studies and defend their dissertations.

Public expenditure on education in Uzbekistan as a proportion of GDP is relatively high. Over the last few years it has constantly exceeded 10% of GDP (twice as much as the OECD average) and in 2005 it was 10.8%.

Despite the scarcity of budget resources, government expenditure as a proportion of total expenditure on education has always exceeded 80%, and this testifies to the government's commitment to support the education system. Government expenditure on education is made up of three main sources: current budget expenditures, future expenditures of future budgets allocated to cover foreign loans that have been used to develop the education system, and also the funds of the extrabudgetary School Development Fund established in 2004.

Public financing of education in Uzbekistan has always been targeted, most recently by adopting and implementing two large-scale national programs: the National Program for Personnel Training that was introduced in 1996 (the first priority of which was to establish a new secondary special vocational training system on the basis of new principles) and the Program for Basic Education Development established in 2004 (the objective of which is to radically improve the basic education sector).

In accordance with these programs, a large portion of public resources is allocated to the education sector due to significant investments made in the new school buildings and the provision of equipment to the secondary special vocational education institutions, and to the new construction, reconstruction and provision of equipment to basic schools.

CHAPTER 4. AN EDUCATION SYSTEM FOR A BETTER FUTURE

As in many other countries during the transition period, Uzbekistan faced serious problems in the field of education during the initial years of independence. It was necessary for the country to undertake Herculean efforts not to lose the positive achievements of the previous period, and at the same time to escape the negative aspects of the past heritage and the difficulties related to the transition period.

In 1996, Uzbekistan was the first of the countries of the CIS to begin institutional reforms in the educational sector. These were based on the new concept of lifelong learning, on the close connection between education and the labor market in order to meet its demands through creating a fundamentally new system of secondary special vocational training, as well as keeping the system of a 12 year general free primary and secondary education.

During 1997–2006, Uzbekistan annually spent an average of 9–10% of its GDP and 23–39% of the state budget expenditures on its educational system. As a result of the reforms the country had the following by 2007:

- The system of a free 9 year general school education was getting stronger.
- The system of a free three-year general secondary special vocational education.
- The system of higher education.
- The system of postgraduate education.
- Annual increases in numbers at all levels of education.
- The mature system of preparation of textbooks and manuals for schools, secondary special vocational educational institutions, and also the printing industry for publishing textbooks and manuals;
- The mature industrial base for manufacturing and providing educational institutions with furniture, lab equipment and different kinds of equipment for vocational training.

Although basic secondary and vocational training is easily available for all, the most important objective for society should be to provide for the population unlimited access to education:

Along with the objective of providing unlimited access to education, there is a more pressing issue for society at the moment—the quality of education.

To radically change the situation related to the quality of education it is necessary:

1. To accelerate the process of increasing teachers' salaries at all levels of the educational sector so that the prestige of the profession is high, and the people who have chosen teaching as their profession should meet certain requirements.
2. To establish a system of incentives to involve leading practitioners in teaching, especially in the areas of economics (economy, finance, accounting etc.), management (organization and production management, marketing etc.), law and engineering.
3. To establish a system for sharing best practice at all levels of the education sector. meaning to widely disseminate and promote the best experience.
4. To expand the social incentives and recognition of teachers' work. To produce feature films and documentaries which heighten the recognition of teachers' professional activities and their contribution to society.
5. To take drastic measures against corruption in higher educational institutions involving both law enforcement bodies and the public including organizations like 'Kamolot', Students' Councils and women's non-government organizations.
6. To review curricula and training programs so that the number of academic subjects and examinations in each academic term are considerably reduced.
7. Raise the prestige level of quality education, with prizes on offer such as giving the best students an opportunity for employment in the most prestigious organizations and companies in the country.

It is critically important to improve educational management in order to implement reforms in the education sector. As was mentioned in the previous sections,

in Uzbekistan the education sector is under the management of two ministries and one specialized Centre. In the regions there are local and regional departments that are responsible for school education management, and there are also regional departments for managing secondary special vocational training.

To further improve the education management system in the light of international experience, in our opinion it is necessary to balance out centralized and decentralized management of the education sector.

There is no other alternative than to establish a progressive system of education that is able to meet the current demands. It must be said that a great deal has already been done in the country. It is difficult to find another country having gone through the difficult process of transition that has managed to allocate as much funds to the reform and upgrading of its educational facilities. This is the initiative of the President and each annually approved state budget is clearly focused on the priority of education.

Uzbekistan is the first country to have started improving school buildings and facilities. There was a lot of catching up to do because for many decades there had been little construction and renovation of school buildings, or provision of new state of the art educational equipment. However, the country aspires to implement all these things in just five years. It is a pleasure to see children's eyes, when they happily sit down at new school desks, use modern learning materials and equipment, and they understand that the country greatly values their education.

However, much more should be done. And this Report, which has analyzed the country's achievements and difficulties in developing education, together with the new goals and challenges, is a small contribution to the future development of education.

CHAPTER 1

EDUCATION AS THE BASIS OF HUMAN DEVELOPMENT

1.1. INTRODUCTION TO HUMAN DEVELOPMENT

No doubt about the goal of the whole creation—We are,
And the source of all knowledge and revelation—We are,
The circle of the universe is like a ring,
Where there is no doubt who are the diamonds—We are.

Omar Khayam

All countries aspire to develop, and yet what are the criteria in deciding which country is developed and which is less developed? What is the correlation between the notions of "development" and "progress", "development" and "social justice", "development" and "equality", "development" and "stability"?

The answers to these questions depend on what we understand the main purpose of development to be: whether it is just narrowly wealth aggregation or something broader such as expanding people's wellbeing, the creation of the conditions necessary for the freedom and social protection of each individual, enabling creative and innovative work, and sustainable resource use and harmony with the natural environment. This broader approach is the one embraced by the UN Development Program (UNDP) as the basis for its human development concept.

The origins of the concept of human development can be traced to the earliest periods of human history. Both the historians and philosophers of ancient times (such as Democritus, Plato, Aristotle and Lucrecius) tried to expound the nature of development. Didro, notable among philosophers of the Age of Enlightenment, believed that the human being has the highest value as the only creator of all the cultural achievements on earth, as the intelligent centre of the universe, the point from which everything should descend and to where everything should ascend.

The ideal of progress is an integral part of the notions of equality and social justice and critical to the concept of human development. It can be found in the works of the great philosophers of the East such as Ibn Sina who wrote that "what makes a hu*man being human is that he satisfies the needs of other people and the latter act in the same way. One plants, another bakes, the third sews, the fourth manufactures a needle and thus all are brought together to satisfy the needs of each other*".[1] According to Navoi, *"serving the human being is the purpose of all creation, of the sun and the universe, of mountains and landscapes, of seas and rivers, of flora and fauna, of flowers and nightin-*

1 Ibn Sina. "Shifo"

gales, of the air and fire—all of the wondrous nature, its inexhaustible wealth and delights"[2]. Beruniy maintained that the prosperity of the country is determined by the thriving of the sciences. For him the greatest happiness of the human being is in understanding, since then he is reasoning. Only this understanding of happiness will bring peace and welfare to the people. *"True delight is the aspiration for that which becomes greater the more one possesses it. And this is the condition of the human soul, when he understands that which he did not know before"*[3] and that which is most worthy of being human is to care for other people, especially the poor.

The theoretical work of Amartya Sen published in "Development as Capability Expansion", has greatly influenced the contemporary concept of human development. In his paper, Sen considered development as a process of expanding capabilities, of creating opportunities for people to increase their choices, rather than simply increasing material and economic wellbeing. He linked this process to the expansion of freedom and the ability to choose the most favourable from a large number of options. Sen defined development as *the process in which the human being is the focal point.* Later, this and other ideas were brought together by a group of experts at UNDP, leading to the launch in 1990 of the series of annual human development reports, added to which are now the national human development reports published in many countries where UNDP works.

The basis of the concept is that all people are not merely the means but rather the end of economic development. *"Human development… is about creating an environment in which people can develop their full potential and lead productive, creative lives in accord with their needs and interests. …Fundamental to enlarging choices is building human capabilities — the range of things people can do or be in life. The most basic capabilities for human development are to lead long and healthy lives, to be knowledgeable, to have access to the resources needed for a decent standard of living and to be able to participate in the life of the community. Without these, many choices simply are not available and many opportunities in life remain inaccessible*[4].

The human development concept does not contradict the traditional theories of economic growth but channels it towards human development. Rather than merely aiming for an increase in GDP, it broadens the argument to put people at the centre as both the agents of and the reason for national development. The difference between the schools of economic growth and human development is that the first one emphasizes exclusively expanding one area of choice—income—and the second implies increasing choice in all areas—economic, social, cultural and political.

The concept consists of a twofold approach to human development: both expanding capabilities by means of improving health, education and work skills, as well as emphasizing the cultural, political and recreational aspects of people's lives.

According to the human development concept, income is *only one of the choices* that people seek, although it is a very significant one. However, it cannot determine the entire complexity and diversity of human life. Health, education, housing, freedom of action and belief are no less important. Therefore, development must mean more than just increasing income and wealth. Income is not the final goal; it is merely a means to expand the capabilities of people in the market place, the public square, in education, health and so on.

2 V. Y. Zakhidov. "The World of Ideas and Images of Alisher Navoi", Tashkent, 1961
3 Beruniy. "Mineralogy"
4 Human Development Report, 2001, p. 9

The concept of human development consists of four major components:[5]

1. Efficiency. People must be productive agents of the economy so that they possess the economic means to broaden their choices. Therefore, economic growth is a significant dimension of human development.
2. Equality. People must not be discriminated against. That narrows their choices in life and reduces their potential for human development. Consequently, the society also fails to attain its full development.
3. Sustainability. Access to capabilities must be secured both for the present and the future generations. Any model of development that only supports the present and deprives future generations is clearly not feasible, as history illustrates with examples of civilizations which failed to survive due to unsustainable practices.
4. Capabilities Expansion. Development is to be carried out in the interests and with the efforts of people, who should participate in the decision-making processes that determine their lives. They are born with certain potential abilities. The target of human development is to establish the enabling environment so that people can develop their abilities and capabilities.

Hence, the main purpose of human development is the creation of the political, economic, social and natural resource environment that would allow people to secure both their material welfare and also the opportunity to enjoy healthy and constructive lives.

Since 1990, the Human Development Reports have published the human development index (HDI) that tries to quantify, albeit in a simple way, people's well-being across many countries. The HDI provides a composite measure of three dimensions of human development and serves as a rough measure for monitoring progress in human development in many countries, regions and the world in general. The three dimensions are:

- Long and healthy life, measured by life expectancy;
- Knowledge, measured by adult literacy and education—enrolment at primary, secondary and tertiary levels; and
- Decent standard of living, measured by income at purchasing power parity (PPP).

It is vitally important that the HDI is not understood as limiting the human development concept and strategy. The success of the HDI as a combined index assessing human development goals, such as expanding access to education, improving health and life expectancy, as well as increasing income, has resulted in a narrow interpretation of the concept. Despite great efforts to explain that the idea of human development is broader than the HDI, very often the two are seen as one and the same. Actually the human development concept is a qualitatively new perspective and approach to the understanding of progress, where the expansion of human choices is the cornerstone.

Both the theoretical and applied aspects of the concept of human development are reflected in the annual global human development reports issued by UNDP. The national reports, being an essential tool for analysis and strategic planning by the UN, are designed to reach a wide audience and to initiate specific actions on human development within each individual country. Since the first na-

5 Human Development Report 1995

tional report was published in 1992 in Bangladesh now over 350 national reports have been issued.

These national human development reports seek to be independent and unbiased, using statistical and other data to connect the human development perspective with the priorities of each individual country with its new problems and new visions. Increasingly governmental agencies, international organizations, academic circles, mass media and civil society are paying close attention to these reports.

In Uzbekistan, the first National Human Development Report was published in 1995 and since then there have been a total of eight. These have been focused on the socio-economic development priorities of Uzbekistan and have furthered wide-ranging, nationwide discussions about sustainable human development issues. The National Human Development Reports serve as an important information source and inputs for elaborating various government programs.

1.2. THE IMPACT OF EDUCATION ON HUMAN DEVELOPMENT

In the concept of human development education is one of the most important components. Even a simplified statistical analysis shows that 40% of Uzbekistan's HDI index is determined by the level of education in the republic. Out of that 40% two-thirds is determined by the literacy level of the adult population and one-third is determined by the gross coefficient of those enrolled into educational institutions, i.e. total share of students out of the age group of 6–24 year olds.

1.2.1. Global trends in educational levels

During the last decade the world has achieved significant progress in the development of education. In 1960 about 36% of the world's population did not even have a basic education, whereas in 2000, even with two-fold population growth within this period, this proportion declined to 25%. Prior to 1975 half of the world's adult population could not read and write, whereas now the share of illiterate people has more than halved.

The most economically developed countries rank first in the education index, while the countries of tropical Africa are near the bottom.

In industrially developed countries the share of illiterate people is less than 1–2%. In these countries approximately 32% of the potential workforce (those aged 25–65) has a higher education. The share of people with a university education is the highest in Canada (43%), in the US (38%) and in Japan (36%).

Among developing countries the average level of literacy has increased to 80%. Compared to 1990, the number of children who do not attend primary school declined by more than 30 million, and the average length of studies at school increased by more than 6 months.

Although there is obvious progress in education all over the world, there are many problems left to be solved. About 100 million children of school age do not attend school, 60% of them being girls. In Sub-Saharan Africa, only $^{1}/_{3}$ of those children who begin studies at elementary school complete it. In spite of some success in eradicating illiteracy, in low income countries every fourth young man and every third adult cannot read and write. Overall elementary education in these countries is provided to only $^{3}/_{4}$ of children.

On the eve of the twenty-first century out of 680 million children of primary school age in developing countries 115 million, or about 17%, have never attended school. In India 40 million children are not enrolled in elementary school, which is over ⅓ of all the children in the world not receiving elementary education.

Table 1.1.
Number of children of school age not attending primary school (thousands, 2004)

Boys		Girls	
Pakistan **2294**	Mozambique **475**	Pakistan **3834**	USA **584**
Saudi Arabia **824**	Tanzania **465**	Saudi Arabia **806**	Turkey **548**
USA **740**	Myanmar **408**	Niger **717**	Tanzania **518**
Ghana **624**	Iran **400**	Cote d'Ivory **705**	Thailand **433**
Kenya **618**	Philippines **385**	Burkina-Faso **681**	Iran **402**
Niger **609**	Columbia **379**	Mali **615**	Myanmar **374**
Burkina-Faso **590**	Thailand **365**	Mozambique **614**	Columbia **334**
Mali **557**	Turkey **332**	Kenya **607**	Senegal **320**
Cote d'Ivory **519**		Ghana **597**	

Source: 2006 World Development Indicators, pp. 88–90.

The quality of primary education is also an issue, with poor quality having various causes, including too many pupils in one class in countries with low income per capita. Due to this and other factors every 17th elementary school student has to retake a year and one sixth of those who do finish a basic education do not continue with further study.

There are great differences in the probability that young people will get the chance to progress to secondary education and then higher education. This is closely related to the average number of years of study. For example, an ordinary citizen of Sub-Saharan Africa who was born in the second half of the 1970s would have less than 6 years of schooling, while his or her peer living in a country of the Organization of Economic Cooperation and Development (OECD) would have almost 14[6].

Table 1.2.
Number of students enrolling, as % of the respective age group (2004)

Basic education		Secondary education	
Highest	Lowest	Highest	Lowest
Denmark, France, Japan, Mexico, Spain, United Kingdom, South Korea, Sweden, Peru, a number of other high and midincome countries **100**	Niger ..... **39** Burkina-Faso ..... **40** Mali, Ethiopia ..... **46** Eritrea ..... **48** Saudi Arabia ..... **53** Cote d'Ivory ..... **56** Burundi ..... **57** Chad **57**	Japan ..... **100** Sweden ..... 98 Belgium ..... 97 France, Spain, Norway, United Kingdom, Denmark, Slovenia ..... **95** Lithuania ..... **94** Finland **94**	Mozambique ..... **4** Niger ..... **7** Burundi ..... **8** Burkina-Faso ..... **10** Chad ..... **11** Mauritania ..... **14** Senegal, Uganda ... **15** Eritrea **19**

Source: 2006 World Development Indicators, pp. 92–94.

6 World Development Report 2006. pp. 6, 7.

1.2.2. Situation in Uzbekistan

In all CIS countries, including Uzbekistan, the index of education is relatively high, and proportionately greater than the other two components of the Human Development Index—life expectancy and GDP. Uzbekistan actually ranks amongst the most developed countries with an education index of 0.92[7], compared to the world average of 0.77.

Uzbekistan has a higher index than some European countries such as Malta (0.86), Romania (0.90) and Croatia (0.90), as well as the most industrially developed country of Central America—Costa Rica (0.87) and even Hong Kong (0.88). Other countries with successful track records of technical progress and economic growth, largely due to oil, also have lower indexes than Uzbekistan—for example Bahrain and Brunei (0.88 each), Kuwait (0.87), Qatar (0.86), and the United Arabic Emirates (0.71), Mexico (0.86) and Malaysia (0.84). It is worth mentioning that all the above countries are in the group of countries with the highest human development level.

Table 1.3.
Education index 2004

Countries with the highest indexes (more then 0.9)		Countries with lowest indexes	Other countries for comparison
Australia	Belgium	Burkina-Faso..... **0.23**	USA **0.97**
Denmark	Iceland	Mali **0.24**	Russia **0.95**
Ireland	Spain	Niger **0.26**	Japan..... **0.94**
Norway	Slovenia	Chad **0.29**	Brasilia..... **0.88**
Finland	Sweden	Guinea **0.34**	China..... **0.84**
New Zealand	South Korea	Senegal..... **0.39**	Indonesia..... **0.83**
Netherlands	Uzbekistan	Guinea-Bissau ... **0.39**	India..... **0.61**

Source: Human Development Report 2006. pp. 283–286.

The problem of general primary and secondary education has been fully solved in Uzbekistan and according to the National Program of Personnel Training soon after 2009 the country will solve the problem of overall secondary vocational education. After 12-years of study young people will receive a diploma of secondary special education as well as a professional qualification.

As a result of this approach to educational management, the level of literacy among the adult population of the Republic is 99.3% and, according to this indicator, Uzbekistan leaves behind such economically advanced countries as Italy (98.4%), Spain, South Korea (98%) and Israel (97.1%).

During the last few years the number of teachers and students has been growing, and the facilities improving, mainly due to the construction of a large number of new school, college and lyceum buildings as well as the provision of modern equipment. Significant progress was made in high schools during the period 2000–2006 and in higher education admissions to bachelor's degree courses and master's degree courses grew by a factor of 1.3 and 2 respectively. It should

7 According to the data of the State Committee of Statistics of Uzbekistan. In the Human Development Report 2006 this indicator is 0.92.

be noted that the number of females entering higher educational courses grew by more than 1.6 times, higher than was expected. In the academic year 2005–2006 alone, over half a billion US dollars was allocated from the state budget and extra-budgetary funds for implementing the National Program of Personnel Training and the Program of School Education Development[8].

As a result of the reforms undertaken in Uzbekistan, the average duration of school education in 2004 was about 12 years, which is more than in, for example, Azerbaijan, Armenia, Turkey and a number of other countries with middling scores of human development.

However quantitative indicators alone are not sufficient to fully measure the impact of education on human development.

Qualitatively speaking, education is a contributor and driver of human development in societies. It is also an effective means of combating poverty and inequality. Education serves to create a global outlook and to expand life style choices. It has a profound ability to shape the activities of people and society.

1.2.3. Education and progress

In the course of human civilization high rates of development in education, often accompanied by high rates of scientific development, have been the most important drivers of social, technological and economic progress.

The great achievements of ancient countries and civilizations, whose rulers paid special attention to the development of science, art and culture, are well known to the world community. The history of ancient Egypt, ancient China, ancient Greece and Rome, as well as the states of Central Asia in the early middle ages, are not only great epochs in the history of our civilization, but also models for imitation. The more recent history of human development, in particular the cases of Japan, Europe, the USA, Singapore, Taiwan (China), and a number of other countries provide us with amazing examples that testify to the huge impact that scientific discoveries can have on the prosperity and development of a society. These accomplishments are based on valuing education and science, and their effect on art and culture.

The industrial revolution of the nineteenth century was only possible in those countries where the system of education had been radically reformed.

In contrast, almost the whole history of the African continent, the dark ages of the early European medieval period, and the late medieval period in the countries of South and Central Asia testifies that for various reasons education was undervalued and so we characterize these periods as ones of stagnation. During such periods the social and economic development of society slowed down, humanity was devalued, and the result was a low living standard for the majority of the population.

On the eve of the twenty-first century the world community has attempted to radically reconsider the role and functions of education in the formation of human civilization, the development of countries and the shaping of the individual. Initially radical reforms in education were considered to be a "social consequence" of the scientific and technological revolution. Later, however, the consequence turned into the cause. Education became a crucial factor for economic and techno-

8 In-depth survey of education in Uzbekistan will be given in chapter 3 of this Report.

Box 1.1.
Historic examples of the impact of education on the development of Central Asian states

The development of Central Asia in the late medieval period is a vivid example of the negative impact on social and economic progress of a decline in education and science. The Central Asian Renaissance of the eighth to thirteenth centuries and the following two centuries was characterized by increasing numbers of madrasas, where secular science was taught alongside religious and ethical subjects. Many large libraries were built and the scientific, cultural and spiritual spheres were quickly developing. From the sixteenth century, though, all these educational and research centres gradually declined. Feudal wars, the fall of the Great Silk Road, the collapse of the Timurids' power, and then totalitarian regimes sharply reduced the attention paid to education and research, depriving them of proper support. This, in turn, brought about a long recession in the economy, technological development and military strength of the region. Finally in the 1860s it was conquered. The situation started to change only at the beginning of the twentieth century, when the Jadids actively fought against feudal backwardness, prejudice and conservatism in Turkistan. They opened new schools and publishing houses to go alongside the educational establishments opened earlier by the Russian administration, laying the foundations for the ending of illiteracy and the spread of knowledge. This had a positive impact on the social and economic development of the region.

logical progress and a mechanism for shaping the social structure and determining one's social status.

There are a number of clear and consistent trends in the development of education and its radical transformation.

The first trend is the radical democratization of education that has occurred in newly industrialized and, to some degree, developing countries. In most developed countries the goal was to widen access to higher education. Some countries achieved the idea of universal access to basic professional education.

The second trend is the concept of continuous learning, born in the 1960s. Gradually, the world community shifted from the old paradigm of 'learning to prepare for life' to this new one of 'lifelong learning'. It means re-evaluating education as a state, societal and personal value.

The last, most important, trend is the introduction of the new progressive principle into the public consciousness and government policy that education is not just for training specialists, but it is rather the instrument for upgrading the general intellectual, technological and cultural level of society, for supporting its capacity for innovation and progress, and to form a modern lifestyle within society.

1.2.4. Education and Poverty

Statistical data confirms that poverty is very much dependent on the level of education.

This is connected with the fact that poorer countries have less financial resources to devote to education. In turn this level of education influences the capacity of the country to increase its labour productivity, and consequently the level of economic development.

In the context of globalization, when the ability of a country to innovate gives it a competitive edge, high levels of educational achievement no longer guarantees membership to a prestigious 'elite' group of countries—it is now an absolute necessity for survival and achieving economic and political independence.

Table 1.4.
Relationship between level of education and economic development

	World	Groups of countries		
		High-income	Mid-income	Low-income
Education level index	0.77	0.97	0.84	0.58
Public expenditure on education as % of GDP (2004)	4.4	5.6	4.4	n/a
Public expenditure per pupil, as % of GDP per capita (2004):				
primary education	15.2	19.1	13.1	n/a
secondary education	18.9	24.7	16.3	n/a
higher education	34.6	28.9	37.8	n/a
Level of literacy among young people (ages 15–24) as %:				
1990	n/a	n/a	93.5	65.9
2004	n/a	n/a	96.9	75.2
2004 (only girls and women)	84.2	n/a	96.2	66.2
Level of literacy amongst adult population (at the age of 15 and older) as %:				
1990	n/a	n/a	81.0	51.6
2004	86.5	n/a	89.9	62.3
2004 (only girls and women)	74.4	n/a	86.4	50.2
Attainment of general primary education as %:				
1991	n/a	n/a	92	66
2004	n/a	n/a	97	74
Average number of pupils per 1 teacher in primary schools (2004)	29	16	22	43
Share of pupils of primary schools, having to repeat a year as % (2004)	n/a	n/a	3	6
Share of graduates of primary schools, who continue to study in secondary educational establishments as % (2004)	n/a	n/a	91	83
Overall access to primary, secondary and higher education as % (2004)	67	94	73	54
Share of educational establishments having access to the Internet as % (2004)	n/a	98	n/a	n/a
Expected number of years of schooling in educational establishments				
Male	n/a	16	n/a	10
Female	n/a	17	n/a	8

Sources: Human Development Report 2006: pp. 286, 326, 330, 374; 2006 World Development Indicators: pp. 24–26, 84–86, 88–90, 92, 94, 306–308.

The correlation between education and poverty levels is clear. Statistical research frequently demonstrates that the population groups with higher levels of education also have greater income. In 1974 Jack Mincer[9] deployed extensive statistical data to prove that each year of study increases by 7% the income of a person engaged in non-agricultural work

9 Jack Mincer, "Schooling, Earning, and Experience", 1974

Household budget surveys undertaken in Uzbekistan also reinforce this finding: in 2004 those who had a higher education had an income 1.5 times higher than those who did not have any education. In 2005 the difference increased up to 1.6 times.

These surveys show that people with a low level of education are more likely to become poor. At the same time, the risk of poverty can be decreased for families where the head of the family has at least completed a secondary education.

Table 1.5.
Uzbekistan households classified by level of education

	Average		Poor		Not-poor	
	2004	2005	2004	2005	2004	2005
The percentage of households with the head having the following education:						
0–9 years of schooling	15.4	14.4	17.1	17.3	14.9	13.7
complete secondary	39.5	40.5	48.9	48.7	36.9	38.4
incomplete and complete secondary vocational education	28.5	28.8	24.0	25.2	29.8	29.7
incomplete higher education, higher education and advanced study	16.6	16.3	10.0	8.8	18.4	18.2

Source: State Committee of Statistics, Survey of households

1.2.5. Education and Employment

Countries with a more educated population have a greater chance of developing production and creating new jobs. As a rule, in such countries both the unemployment rate is lower as well as levels of emigration of the potential workforce in search of jobs.

Countries with a well-educated population that is constantly upgrading its professional skills and acquiring the most sophisticated technologies always attract the attention of transnational corporations. This is especially important in the investment policy of companies that produce science-intensive goods and provide high tech services. Foreign direct investment, as a rule, flows into those countries with higher levels of education and creates new and better paid jobs.

Countries with a less educated population, having a smaller number of qualified workers, engineers, managers and other professionals, have to rely only on internal investment which will be insufficient given the predominance in these economies of lower value activities such as low or mid-tech production or assembly, mining and the processing of raw materials.

An educated person can more easily find a job than a non-educated person. The unemployment rate in any country is higher in the uneducated layer of the population.

Data from the household budget surveys carried out in Uzbekistan demonstrates that the lowest unemployment rate was among those who had greater levels of education.

Thus the development of education and increasing access to education should become an integral part of policy aimed at tackling unemployment.

Table 1.6.
Level of education depending on social and demographic features of household members in Uzbekistan

	Illiterate		0–9 years of schooling		Incomplete and complete secondary vocational or professional education		Incomplete and complete tertiary, and higher	
	2004	2005	2004	2005	2004	2005	2004	2005
Number of children, average per household	2.2	2.1	1.7	1.7	1.8	1.7	1.6	1.5
Working members of households, average per household	1.3	1.1	1.1	1.2	1.3	1.4	1.4	1.3
Non-working members of households, aged 16 years or older, average per household	2.6	2.7	2.5	2.6	1.8	1.8	1.9	1.9
The unemployed, average per 100 households	20.5	25.5	19.4	25.1	17.1	17.6	15.6	16.8

Source: State Committee of Statistics, Household Budget Survey

1.2.6 Education and Inequality

Reforms in education as well as the dynamics and focus of scientific progress vary across the countries and regions of the world. As a result, the gap between developed countries and developing ones has increased even more. In developed countries widespread tertiary and lifelong education has become a reality, while developing countries are still at the stage of addressing basic literacy.

Inequality in access to education has a negative impact on global progress and in particular each individual country's development. The amount of public money spent on the education of the most vulnerable citizens of poor countries is, as a rule, proportionally less than in richer countries. Children from poor families are often deprived of the chance to get a secondary education, let alone higher education. In a number of poor countries private education has been introduced which brings about additional problems since poor families cannot pay for the education of their children. Orphans and homeless children, the number of which is especially large in underdeveloped countries of the world, find themselves in the same position.

At the same time, increasing access to education can ease the economic inequality between countries as well as social inequality within a country. In 1990 Bangladesh's human development index was lower than eight other countries listed in table 1.7. By 2003 it had left them all behind. Partly this can be explained by the effective measures undertaken by both the government and civil society, in expanding access to education. The program "Food for school studies" appears to have been particularly successful. It provided food for poor families provided that their children attended primary school. As a result girls' enrolment rose significantly

and the number of dropouts declined. The result has been a fairly high economic growth rate and lower inequality: the income of the richest 10% is 6.8 times higher than the income of the poorest 10%, while in Madagascar this figure is 19, in Zimbabwe 22, in Kenya 34, in Swaziland 50, and in Lesotho 105 times!

Table 1.7
Differences in access to education compared to GDP growth and HDI change

	Net primary enrolment ratio, %		Annual	Human Development Index	
	1991	2004	1990–2004 (%)	1990	2004
Bangladesh	71	94	2.5	0.422	0.530
Sudan	40	43	3.4	0.427	0.518
Congo	79	n/a	–0.2	0.528	0.520
Togo	64	79	n/a	0.498	0.495
Zimbabwe	n/a	82	–1.9	0.639	0.491
Madagascar	64	89	–1.1	0.448	0.509
Swaziland	77	77	2.1	0.622	0.500
Lesotho	71	86	4.5	0.572	0.494
Kenya	n/a	76	-0.6	0.548	0.491

Source: Human Development Report 2006

The impressive success of some Asian countries during the last quarter of the twentieth century is already well known. Prior to this period these countries had low levels of economic development and were considered to be amongst the poorest countries in the world. The economic growth in the Republic of Korea, Malaysia, China, Taiwan (China) and other countries was mainly the result of deep reforms undertaken in the sphere of education and expanding access to education at all levels. In the majority of countries that increased access to education, the level of income inequality is much lower than in countries providing less access to education.

1.2.7 Education and Health

Education is directly related to the health of the population and life expectancy, another indicator of human development. The Uzbekistan Human Development Report 2006 states that "more educated people take better care of themselves, take preventive measures, lead a healthy lifestyle, recognize illness in time and seek qualified medical assistance.

We should not forget that a better educated population has better job opportunities, higher income and, as a result, better able to pay for timely and well-qualified medical services"[10].

High levels of education and research helps a country to avoid future epidemics and pandemics. Thanks to the efforts undertaken by the countries with higher levels of education, today humankind is combating such diseases as HIV/AIDS, bird flu and cancer.

10 Uzbekistan 2006. Human Development Report. Tashkent, UNDP, 2006, p. 27

Table 1.8.
Health and Education in the Uzbekistan Household Budget Survey (as % of adults in households)

Education level of the head of household	Had temporary or no health problems		Constantly had health problems and have serious chronic diseases	
	2002	2005	2002	2005
Primary and lower	89.3	91.9	10.5	8.1
Incomplete secondary	90.6	93	8.0	6.9
General secondary	95.5	97.4	3.9	2.6
Special secondary	94.3	96	5.3	4.0
Incomplete higher	88.6	97.4	8.5	2.6
Tertiary	91.9	94.9	7.7	5.0

Source: State Committee of Statistics, Household Budget Survey

In countries with higher levels of education the rates of socially dangerous highly infectious diseases such as tuberculosis, acute intestinal infections, malaria, cholera, and the plague are significantly lower.

Higher education levels amongst women decreases the fertility rate. Given the high birth rate in Uzbekistan, education is an important factor in easing the demographic burden and the rates of illness among women and anaemia among children. This, in turn, leads to a decrease in infant and maternal mortality. Children borne by women with higher education have, as a rule, an optimal weight and are less prone to complications at birth and diseases during their childhood.

1.2.8 Education and gender equality

In middle-income countries the male literacy rate is slightly higher than the female, while in low-income countries it can be as much as 1.3–1.5 times higher. In the poorest countries of the world male literacy is twice as high as female literacy.

Table 1.9.
Level of literacy of the adult population (15 years and older) in a number of countries (%) in 2002

Men		Women	
Majority of high-income countries, Uzbekistan and majority of CIS countries..... **99–100**	Nigeria.....**74**	Majority of high-income countries, Uzbekistan and majority of CIS countries..... **99–100**	Nigeria.....**59**
China.....**95**	India.....**73**	Greece.....**88**	Haiti.....**50**
Greece.....**94**	Yemen.....**69**	China.....**87**	India.....**48**
Indonesia.....**92**	Morocco.....**63**	Indonesia.....**83**	Morocco.....**38**
Kuwait.....**85**	Pakistan.....**62**	Kuwait.....**81**	Pakistan.....**35**
Kenya.....**78**	Haiti.....**54**	Kenya.....**70**	Ethiopia.....**34**
	Bangladesh.....**50**		Bangladesh.....**31**
	Ethiopia.....**49**		Yemen.....**29**
	Chad.....**41**		Chad.....**13**
	Niger.....**20**		Niger.....**9**

Source: 2006 World Development Indicators, pp.96–98.

At the same time it should be noted that though gender disparities in the age group 15 to 24 still exist, they are much smaller and have completely disappeared in some countries.

Comparing data from tables 1.9 and 1.10 we can see that in India the difference in literacy of men and women is 25%, while among young people it is just 19%. Similar patterns are found in Indonesia (9% and 1%), Morocco (25% and 16%) and Ethiopia (15% and 13%). The gender disparity in the literacy rate of young people in China is negligible, and in Kuwait and Haiti (two contrasting countries) the situation is the 'opposite'—in the age group 15–24 women are more literate than men.

Table 1.10.
Level of literacy of the population in a number of countries of the world at the age of 15–24 (%) in 2002

Men		Women	
Majority of highincome countries, Uzbekistan and majority of CIS countries **100**	Kenya **88**	Majority of highincome countries, Uzbekistan and majority of CIS countries **100**	Kenya **81**
Ethiopia **63**	India **84**	China **99**	India **68**
China, Indonesia **99**	Morocco **77**	Indonesia **98**	Haiti **67**
	Haiti **66**	Kuwait **94**	Morocco **61**
	Ethiopia **52**		Bangladesh **41**
	Bangladesh **58**		Sierra-Leone **30**
	Sierra-Leone **47**		Niger **14**
	Niger **26**		

Source:2006 World Development Indicators, pp.96–98.

Gender disparity is not a problem in Uzbekistan since the illiteracy of both men and women was eradicated several decades ago.

1.2.9. Education and democratic development

It is widely considered that there is a close relationship between the level of education and the level of freedom enjoyed by a population. Mainly this is true for the countries of modern Western Europe, where an increase in education levels was accompanied by a widening of democratic freedoms and the ability to use them.

At the same time there are many historical and modern examples showing that upgrading the education level and the development of democracy and democratic institutions are not concurrent processes. Usually increases in education levels precede democratization and sometimes the time lag is significant. It is difficult to imagine that liberalization and democratic development are possible in uneducated societies. Yet the development of democracy even in a society with high levels of education is not automatic. The development of democracy in a society with rapidly increasing levels of education, especially in a society with newly established democratic institutions and freedoms, requires some time and considerable effort. It is related not just to education, but rather to the mind-set of the population, which is impossible to change as quickly as the level of education. Widening access to education and upgrading the education level are necessary but not sufficient conditions for democratization.

Educated people don't just value freedom, but very importantly use that freedom and democratic values not to harm but to benefit society. The attempt to skip

this stage of nurturing a democratic mindset amongst the population, necessary for democratic institutions and freedoms, can end in failure.

Thus according to the concept of human development, education is the most important human (individual and societal) capital for solving the fundamental problems of the modern world community.

At the same time, the historical facts show that the impact of education on social progress depends on three key factors.

First is the level of interest, political will and ability of the government to develop education and the sciences. Each of these things plays a crucial role in the measures undertaken by the government to develop education. It means that if any one is missing, educational development cannot be successful.

Interest in developing education is dependent on the government being committed to improving the living standards of the population. A government set on enriching itself or implementing its own ambitions would hinder the advancement of the educational level of the population. Unfortunately there are many examples when governments and rulers consciously limit the chances of the population to be educated. These examples are not only from ancient or medieval history, but also from modern times. It is easier to manage less educated and poorer people, though from a long-term perspective this paradigm is harmful both for the country and for its population.

It is not enough just to be interested, it is also important to have the political will in order to carry out reform and implement large-scale education programs. The political will of the government can be opposed by external and internal forces, for whom upgrading the educational level of the population is not in their interests. At certain points in history a conservative section of the religious elite created such obstacles in different countries. Nowadays in many countries religious fundamentalism creates obstacles for the development of education and science. To overcome this negative impact many countries separated religion from the institutions of the state.

The ability of the government to advance educational reform and widen access to education is related to the educational level of the members of the government and the financial resources at the state's disposal.

The second key factor in mediating the impact of education on social progress is the accessibility of education for all layers of the population. The flourishing of science and culture in ancient civilizations, as well as in the countries of Europe and Central Asia during the Renaissance and early medieval period had its limitations. This progress was not based on the education of the whole population but rather on a high quality of education just for the elite. As a result, many of the discoveries made by this elite remained underutilized since society was not ready to understand and implement them.

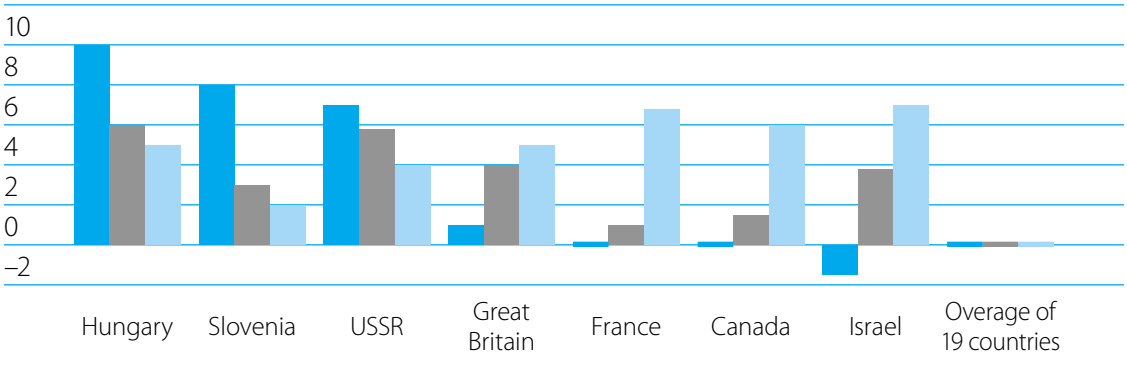
Education reform undertaken in many European countries as well as in a number of Asian and American countries has made education accessible for wide layers of the population. It is these countries that gave rise to the main industrial and scientific innovations of the twentieth century.

Third, the quality of education and the ability to transform it into action.

A high level of literacy of the population, while important, is not the only criterion of high educational attainment. Many countries have high rates of access to education but do not have high levels of innovation in society. This phenomenon can be explained by many factors. Two key ones deserve mention: a) the need

to raise educational levels in the areas of science and engineering and b) the creation of institutions able to rapidly convert knowledge into practice in all spheres of human activity.

Diagram 1.1.
Seven school systems with the highest indeces in the sphere of teaching mathematics and natural sciences



L. Grebnev. Education: service or life? Questions of economics, № 3, 2005, p. 39.

For example, the Soviet system of education not only provided wide access but also high quality school and higher education. This system, however, was weaker in developing the relevant skills necessary to apply this knowledge. As a result, graduates of educational establishments wasted a lot of additional time in learning how to apply their knowledge at work.

This diagram illustrates that even the highest indicator of educational level does not guarantee effective application of that knowledge.

This difference is even more significant in the ability of the population to apply this knowledge in critical situations. In the third and fourth chapters of this report we will examine this process of transforming education into a knowledge economy.

1.3. ROLE OF EDUCATION IN A MODERN SOCIETY

In addition to the factors discussed above that impact on education and in turn human development, there are other types of human activity for which education has become much more important.

1.3.1 The influence of education on economic development

GDP per capita is the most important quantitative factor that shapes the human development index, and it varies greatly around the world. Why it differs can be explained by many factors, including historical pathways, the political context, and the resource potential of the country.

The analysis of long-term trends of economic development and advancements in education in these countries demonstrates that there is a close link between these

two indicators. In the long-term there are no rich countries with low levels of education. At the same time, in the short-run and medium term there may be different trends. In past centuries a country could become rich for a period of time as a result of colonial conquests and predatory wars—Great Britain and Spain, being examples of this in the past.

In the modern period a country can become rich as a result of possessing highly liquid and increasingly valuable natural resources. For example in six Middle Eastern oil monarchs, Bahrain, Qatar, Kuwait, the Emirates, Oman and Saudi Arabia, the education index is lower than in Uzbekistan. In Kuwait and Bahrain it is only 6 points lower, and in Qatar 7 points, but in other countries the difference is considerable. Thus, in Oman this indicator is 15 points lower than in Uzbekistan, in Saudi Arabia 20 points, and in the Emirates 23 points (these last two countries have lower levels than in such poor countries as Zimbabwe, Lesotho and Equatorial Guinea). Yet their huge reserves of hydrocarbon fuel allow them to rank amongst the countries with the highest incomes. In 2004 GDP per capita in these countries was many times higher than in Uzbekistan—about $14,000 in Saudi Arabia, over $15,000 in Oman, $19,000–21,000 in Kuwait, Qatar and Bahrain and in the Emirates over $24,000.

The countries with the biggest difference between the education level and GDP per capita indices in 2004 was Tajikistan (0.90 and 0.41 respectively, so education being 49 points higher) and in the Emirates (with GDP per capital 21 points higher than education). This range of difference is in sharp contrast with the average global difference which is just two points (index of education is 0.77; GDP index is 0.75).

Yet in the context of globalization and growing international competition, these riches are only sustainable if they are supported by a growing level of education and effectively translating knowledge into economic development.

This can be proved if we compare the key parameters of human development: the education and GDP per capita indices. When countries are grouped in the main three categories of income the education index does not always correlate with a high GDP index. However when they are divided into smaller groups the relationship becomes evident: with an increased index of education, the GDP index also grows.

Table 1.11
Comparison of average indices of education level and GDP in selected countries (2004)

	Education level index	GDP index
World total	0.77	0.75
Including:		
high-income countries	0.97	0.96
middle-income countries	0.84	0.70
low-income countries	0.58	0.52
first group of 10 countries with high HDI	0.975	0.970
second group of 10 countries with high HDI	0.973	0.951
third group of 10 countries with high HDI	0.943	0.911
last but one group of 10 countries with low HDI	0.540	0.404
last 10 countries with low HDI	0.367	0.374

Source: Human Development Report 2006, pp.283–286

Education as a sphere, a type of activity, specializing in teaching and transferring knowledge and skills, became an important sector of the world economy. Figures on the economic value of education and the scientific research linked to it are quite impressive. Suffice to say that public expenditure on the development of education in the world is close to $2 trillion a year. The number of students of higher educational establishments exceeds 150 million people. The number of researchers working in high-income countries is over 3.6 million and the total allocation for the development of this sphere is over $1 trillion a year[11].

In the USA 8% of the population is engaged in the sphere of research and this contributes about 20% of GDP. About 66% of the working population has a higher or incomplete higher education. The government of the country intends to raise this indicator up to 90% during the lifetime of the present generation.[12]

Education is closely related to economic development by the following means:

1. **Scientific inventions, innovation and introduction of modern technologies.**

Radical change in the use of all types of resources in the production sphere can be achieved only by introducing scientific inventions into the modern technological process. Various theories of economic growth prove that sustainable economic growth is only possible when economic development is innovative.

2. **Qualifications and quality of the labour force.** The lack of capital investment into the development of the social sector, especially into education and public health, hinders economic growth.

New technologies cannot be effectively introduced into the production process if there is a shortage of professionals in this area. It is in education, being a source of knowledge, where qualified professionals are forged, and that is the most important condition for introducing innovations. Education provides for high levels of modern technology, their application, efficiency growth, competitiveness, an attractive investment climate and, finally, the security of the national economy.

Countries with a poor track record of training workers, engineers, managers and other specialists are most likely going to be restricted to low and mid-tech production, mineral extraction, the simple processing of raw materials and assembling simple products.

In contrast those countries with highly educated workers are striving to master and apply the most sophisticated technologies, are attracting the attention of multinational corporations, and are focusing on the production of science intensive products and providing high tech services.

It is becoming increasingly evident that investment into human potential, i.e. raising the quality of education, should take precedence over investment into the production of goods and services. Good examples are countries such as Malaysia, Mauritius South Korea, and Singapore which have made great efforts to form a progressive system of education at the very beginning of their development. An active renovation of the education systems in these countries was started at the period when income per capita was low, and economic reforms as well as the inflow of foreign investment were just at the initial stage.

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11 Calculated on the base of data from Human Development Report 2006.—pp. 300, 320, 334.

12 Uzbekistan: Challenges for economic development, based on knowledge. Report prepared by the Center for Economic Research, Tashkent, 2004, p. 9

Box 1.2.
Experience of Singapore in the development of education

When Singapore was a British colony its industry was essentially being a supplier of raw materials and the processing of mineral fuel and agricultural products such as tin, oil, rubber, cotton and coconut. At the same time, even during this period, much attention was paid to the development of the education system. In 1954 the population of Singapore was 1.2 million and the country had 563 educational establishments (including over 200 English schools and universities) with 186,000 students*. Several years after the country gained its independence the government, planning to achieve rapid economic growth, launched a program of intensive personnel training at the best foreign universities. In the 1980s, with the aim of maintaining the pace of economic development, the government undertook several measures to provide higher education to women. In the following years it became a priority to educate specialists at national and overseas universities in the areas of the latest directions of research and advanced technologies.

As a result of these and other measures Singapore became one of the world leaders in the area of technical progress. Currently this country is among the top five countries of the world in terms of ratio of scientists to the population (47) per 10,000 people. In terms of spending on research and design, which account for 2.1% of GDP, Singapore leaves behind its former mother country Great Britain, and in terms of export of high tech products ($88 billion in 2003) it ranks fifth in the world. In terms of its share of processed exports (59%) it ranks second in the world.

* Foreign countries. Reference book. Moscow, 1957. - p.499

3. **Spread and application of knowledge about the basics of environmental protection, preventative measures against pollution, and the support of biological diversity and ecological culture.** Countries which pay special attention to these problems minimize the resource waste and environmental pollution associated with industrial and agrarian policies. They develop efficient measures with the aim of banning the development of energy and resource intensive production. The governments of these countries are oriented towards the economical use of water resources and the measured use of mineral fertilizers, herbicides and pesticides. This can preserve non-renewable resources and the natural environment.
4. **The impact on the transition from traditional production to high tech production in the sectors of industry, agriculture, transport, services and other sectors of material production.**

This transition requires well-timed quality training and retraining and the upgrading of professional skills of a sufficient number of professionals engaged in the design of advanced technologies:

First, for the area of scientific and design work;

Second, for those sectors, enterprises and productions, where these scientific findings are introduced and applied.

Uzbekistan has every potential to improve its position in the GDP index. First, it can be achieved by greater investment and deeper reform into the financial sector, sectors of material production, as well as in those industries providing the manufacturing infrastructure. The most crucial reforms should be undertaken in the social sector. Huge investment should be directed into this sector, mainly into the system of education. Understanding this, the government of the country regularly allocates 50% of its public budget to education.

It can take a long time before the results become evident. The bigger the scale within which the output should be calculated, the more difficult the task. For example, it is not so difficult to calculate the results received from training farmers in new technologies: a simple comparison of the yield growth set against the costs of training will help identify the profit and time periods for recouping the expenses. Much more complicated is the process of calculating return from overall investment into education. The fruits of that investment can take many forms and can appear in different periods of time in practically every sector of the economy and society.

At the same time, investment into education may fail to bring about the expected economic growth due to some of the following reasons:

- An inappropriate country development strategy and serious shortcomings in the economic policy of the government. These include, for example, forced development of the mining industry and exports of raw materials without appropriate support for the high technology production and services sector. If there was a fall in the world market price of non-renewable raw materials then economic growth might stop or at least slow down given the lack of support for manufacturing industry and the high technology sector. Meanwhile, the education system will continue to produce specialists to work in these sectors. but this growth of educational level in the country will not be accompanied by similar progress in the economy, and many of them won't find jobs.
- Constant outflow of qualified specialists—otherwise known as the "brain drain". The insufficient development of technology intensive sectors, a reduction in financing, the lack of material incentives and mechanisms for innovation can bring about an irreversible loss of well qualified specialists. In such a case the huge funds allocated to train these specialists will be appropriated by those countries which can offer better conditions for research, innovation and production.
- Mismatch between the educational process and the needs and requirements of employers. As a result, graduates of educational establishments cannot apply the knowledge they receive as well as being unable to adapt the advanced experience of other countries.
- Low quality of educational establishments—particularly corruption, leading to a significant deterioration in the quality of specialists teaching and, as a result, professional incompetence in graduates.
- Overcoming these risks should become a part of the economic and education reforms in any country which strives to preserve its competitiveness in the modern world.

1.3.2 Influence of education on the socialization process for national and global citizenship

> "I absolutely disagree with what you say,
> but I will defend to the death your right to say it'.
> Voltaire

Conflicts between different ethnic groups and different confessions as well as separatism, religious and political extremism creating social tension are a direct threat to the security of any country.

The danger of widespread international terrorism is a challenge for the whole world and remains a serious problem of the modern world community.

The causes and sources of this danger are deeply rooted. The problems of huge economic and social disparities between countries are also very important in aggravating conflicts and reinforcing tension in the world. The poverty of many countries and whole continents and the low level of education of the population are fertile ground for the springing up of destructive forces. Using terror and other means of political and economic extortion, these forces try to build up an international system of influence and power.

The history of humankind teaches us that there will no be winners in such struggles. On the contrary. While there may be some conditional winners, all those involved in the confrontation, whether voluntarily or involuntarily, will lose out since social progress will be set back.

Currently international terrorism utilizes the latest achievements of science and technology, often attracting educated people, as weapons with the aim of destroying the world and peace between peoples.

It is clear though that terrorism could not develop an international character if it wasn't for its ability to draw from a 'protesting layer' of the population of poor countries.

The method of direct military suppression of subjectively selected 'centres of international terrorism' is a widely used form of combating international terrorism. One of the aims of this approach is to create a 'layer' of the population that would protest against international terrorism. In examining the cases of Iraq, Libya and Palestine we can say that this method applied by the USA and some other countries of the coalition has not so far produced the desired effect. Moreover, it has provoked a widening and worsening confrontation between these two 'protesting layers' of poor and rich countries, transforming this confrontation into the chronic international disease of the twenty-first century.

Efforts by all countries to reduce economic inequality between the rich and poor countries is not the only means of combating international terrorism but it might be the most effective way. This can be achieved by expanding education in these countries, since an educated population has a greater chance and possibility to:

- Be engaged and earn stable and growing incomes. It narrows the scale of poverty and social disparity, both within the country and in the world;
- Be interested in the constant improvement of one's own professional skills, participating in various educational and training programs;
- Have different hobbies during one's leisure time;
- Bringing up children in a way that develops their interest in education, and forming in them the principles of love of people and tolerance, introducing young people to the moral norms common to all mankind.

Educated people usually value the things they have, strive to widen their knowledge, improve their economic welfare and pass it down to their children. They, as a rule, are not interested in conflicts, understanding that both the progress of their society and their own personal progress are only possible in peaceful conditions.

It is difficult to deceive educated people and involve them in destructive activities. They have an access to a variety of literature and mass media. They can think and make their own decisions.

The progressive world community should be interested in upgrading the level of education of the population in all countries of the world, first of all in the poor-

est countries. The huge financial resources allocated to financing the armed suppression of so-called 'centres of international terrorism' would be more efficiently spent on reducing inequality, combating poverty and raising the education level of the population in developing countries.

Developing countries should also be interested in raising the education level of their own population, since literate people are the transmitters of civil values, without which it is impossible to build up a politically mature state. Civil society cannot be formed and democratic principles and freedoms cannot be developed without an educated population. Only educated people are able to see the potential of their country, and participate with civil responsibility in building up its future.

Education of the population is required to support new development strategies and to train educated national elite. The result of such measures is an educated people, capable of generating innovative strategies, making fundamental and applied scientific discoveries.

The concept of human development recognizes the conditions which give rise to the principle of 'diversity for development'. An ideology based upon dogmatism does not accept dissent, distorts social awareness, impedes harmonic relations between the state and individuals and hinders progress in society.

Such ideologies, based on monopolistic power and absolute facts, have no future. This type of ideology, in restricting free-thinking, violates the basic rights of freedom of conscience, speech and views, and is indicative of monopolistic, totalitarian regimes and despotism.

It is obvious that each individual or social group, freely expressing its opinions and views, should firstly have clear and justified goals. Also, it is important to bear in mind one's responsibility for the consequences of implementing these ideas as well as the acceptable norms for disputes. In other words, the diversity of thoughts, ideas and opinions should not oppose the law, contradict national interests, or violate human norms of ethics and morals common to all mankind.

Building up civil society requires that special techniques be introduced into the learning process, which can contribute to the formation of the basics of civic consciousness. Civic consciousness should be considered as a set of cultural, historical, spiritual and moral knowledge, and the skills and capacities of an individual. This set of qualities and knowledge will allow people to actively participate in democratic civil society, think independently and critically, act reasonably in the conditions of pluralism and have a deep sense of national pride and dignity along with chances to achieve their own goals as well as assist others.

The nurturing of the civic consciousness occurs at the intersect between the moral and intellectually critical capacities of a person. The value of special educational courses cannot be overstated. They help to form a civic consciousness at all levels of the education system of a country. The curricula of such courses should feature the study of social sciences and the humanities as a fundamental dialogue between the student and the history and culture of the country. Students should be given a wide range of topics and problems for discussion, and materials for critical analysis of civic values of both their own country as well as of other countries. Finally, such courses should analyze the heritage and diversity of languages, which feed and shape civic values. Young people should be engaged in the discussion and explanation of their own values and the conditions necessary for the development of civil society, in the past, present and future.

The formation of such a civic consciousness should be considered as an innovative means of development, in the process of which students learn how to design and implement projects for various public agencies and institutions. In this way young people will become interested in working with other people, which in the future can help them to actively participate in the political and economic life of the country.

1.3.3 Providing proper intellectual and moral development

The concept of human development in contrast to the concept of human capital values education not only as an instrument for raising the productivity of the labour force and contributing to economic growth.

Here the human is considered only as the means to achieve the goal and is defined as 'the most important index determining the ability of the country to produce wealth'.[13]

The concept of human development is focused on a person; its aim is to create equal conditions of access to resources, providing overall and harmonious human development. Economic growth, in this case, is the means for the achievement of this noble goal.

Material prosperity should not be the only end of people's life. People differ from the rest of the living creatures of the world by their ability to participate in intellectual and spiritual life. Moreover, intellectual and spiritual activity was always an integral part of human life, without which life would be dull and incomplete. Education encourages the development of these multiple 'non-economic' abilities of people. Education is the basis of the culture and art of all nations. Literature, painting, theater, cinema and television appeared thanks to education. It is not by chance that the prosperity of culture and art is observed in countries with high educational levels.

In determining the impact of education on the formation of the spiritual and intellectual needs and abilities of people, specific features of education are usually considered from three interrelated perspectives: those of state, society and the individual. Identifying the distinct interests of these three is the basis of developing strategic objectives for the development of education taking into account the interests of all stakeholders.

On the individual level — the fullest self-realization of an individual is to develop his or her intellectual abilities. At the same time it is the acquisition of general and professional knowledge that creates new job opportunities. Educated people are spiritually richer; their life is full of other values besides material ones. Education allows people to satisfy their spiritual needs, make life more interesting and harmonious.

On the state level — the government should be interested in the development of the intellectual potential of the country. During this period of the expansion of the 'knowledge economy', education becomes an important component of economic development and accumulation of national wealth. The spiritual wealth of the population is organic and naturally gives rise to a legal culture, as well as an ability of the population to live and work in a free, democratic and legitimate state. As such people can properly use their rights and freedoms for the benefit of the people, the state and society.

13 Drucer P. The Educational Revolution// Education Economy and Society. New-York–London,1969, p. 19

Box 1.3.
Shortcomings of the state ideology of the Soviet education system

The Soviet system of education:

- was too ideology-based and intolerant of whatever did not fit into the framework of existing ideology;
- denied access to many values of international science, literature and culture, denouncing them as being harmful for young people, withdrawing them from libraries and reserving the right to judge what was and what was not necessary for youth;
- inculcated intolerance of the West, to capitalism, to rich people, to religion, and to truth if they did not correspond to Soviet ideology;
- 'deleted' or 'slandered' whole pages from the past of the country and the nation, forgetting that our history, despite all its contradictions, is our wealth;
- introduced dogmas, created clichés in the mind of young people, and did not allow alternative views of society and the world.
- A country which builds education on such principles cannot prosper for long: we need to learn this lesson of history!

From Uzbekistan Human Development Report, 1997, p. 78

On the society level education should be focused on the formation of universal spiritual values. Also, it should be focused on the formation of a public mindset and global outlook, aimed at the development of human society. Only educated and spiritually rich people can form a society which is able to resolve disputes without wars. Really educated and well-bred people will never in any circumstances accept violence, or any manifestation of terrorism and hostile confrontation. Only spiritually rich people can place global ecological problems higher than their own problems and the problems of individual nations and governments.

The intellectual development of society is the basis for social progress, without which scientific progress is impossible and discoveries of global importance for humanity cannot be made: it secures the very sustainability of human society.

Box 1.4.
The role of education in maintaining social cohesion

"The role of education should be as follows:

To reconcile our past with the present and future. It is necessary not to delete the past, and to be able to see the truth in the past, to analyze it, to take from it everything of value. It is necessary to value our ancestors, their lives, and their history. By crossing out history, we cross out their lives;

To create conditions for mutual respect towards people of different races, nationalities and languages. International experience demonstrates that there cannot be a consensus in a society if national minorities do not have opportunities for the development of their culture, language and literature. A state isolated in its national culture, language and literature cannot develop itself;

To create a consensus between various religions and creeds;

To solve the problem of "fathers and sons", the problem of mutual understanding between people of various ages and generations;

To create conditions for social cohesion taking account of globalization. There should not exist any human contradictions neither on the line 'East-West', nor on the line 'North-South'. The world is tired of contradictions."

From Uzbekistan Human Development Report, 1997, pp. 78–79

1.4. EDUCATIONAL MODELS. EDUCATION DURING THE TRANSITION PERIOD

Any state striving to develop the material, intellectual and spiritual wealth of its people has to develop some mechanisms in the form of national models to implement these objectives.

1.4.1 Educational models

There exist many different national models of education. Yet, some basic principles can be mentioned that differ depending on the following key criteria:

- Main aim and expected result when calculating the return for the country during some specified historical period;
- Economic potential of the state and society in financing the system of education;
- Mechanisms and instruments applied for the achievement of targets.

Taking into consideration these criteria one can identify three models of education, variations of which are used in different developed and dynamically developing countries:

- European (the Soviet system of education was one variant)
- American
- Asian

The European model of education, starting from primary school, is aimed at a high level of requirements for students as well as at providing them with fundamental knowledge in the social and natural sciences. There is also a preschool system of education. Education at primary and secondary school generally lasts from 10–12 years and is a general one. The next steps are professional, tertiary and post-tertiary education. Education in this model is mainly public and free with relatively high centralization. Starting from the primary school the criteria used to evaluate the knowledge of schoolchildren in order to move up from one grade to another is very high.

The autonomy of European universities has deep historical roots, though it is significantly less than in the USA. Academic circles play an important role in the management of educational institutions, while in the USA these functions are mainly carried out by tutorial councils.

In the European model we can distinguish between the English, French and German ones, as well as the models of Eastern European countries. For example, a specific feature of the German model is the so-called 'dual principle' (studies combined with production), and a specific feature of the French model is completely free education.

The European system of education is supplemented by a system of training and retraining for a specific profession, which is also free and coordinated by the employment agencies. At the same time there exists a broad system of training courses aimed at improving the professional skills of employees that are financially covered by the employers or by the trainees themselves.

The American model is distinguished by the fact that it is financed not only by the government but also by private business. Schools are regulated by municipal bodies and there are roughly equal numbers of private and public universities. Generally local sources of financing outweigh national ones. Primary and secondary education is mainly free of charge, while higher education is mainly fee based. Yet, there is a huge network of financial assistance provided to students in the form of grants and loans.

The quality of education differs significantly in the American system between public and private schools, elite and ordinary universities. The level of requirements for knowledge, simplified at primary school, rises sharply with each following step of education. In primary school the proportion of broad humanitarian subjects is large, while in secondary school there are opportunities to receive a more specialized education. Universities can independently determine the content of education. In this process the role of governmental agencies is very limited.

Differentiation and specialization are common and there are common factors ensuring effective education in both the European and American systems. Schoolchildren are usually streamed in accordance with their preference for a specific subject or profession, their abilities and capacities, as well as catering for mixed interests. Such an approach became fundamental in the USA, UK, Germany, France, Italy, Canada and in other countries. These principles are considered to be the most important preconditions for human development and the progress of society.

The Asian model of education represents a unique combination of eastern and western, traditional and contemporary approaches to the organization and methodology of educating and training experts. This model has dynamically incorporated some elements typical for Asian countries with institutional structures that were adopted from the outside—primarily from the USA, Great Britain and a number of other European countries.

Special emphasis was been given to the maximum development of human potential, primarily through education, in Japan and in the other four countries known as the 'Asian Tigers'. South Korea, Taiwan, Singapore and Hong Kong were so called because of their phenomenal achievements in socio-economic progress and for their breakthrough into global markets and export expansion. All of these countries had very little valuable natural resources or much land, so their main wealth was their human resources. It was the use of this resource, intellectual capabilities and innovation rather than the reserves of oil and gold which they lacked, which enabled these countries to move up from the category of being poor and technically primitive to the path of continuous progress, to accomplish an 'economic miracle'. Later the list of countries with this approach to education was lengthened by the likes of Malaysia, China, India, Turkey and other Asian countries with rich and varied natural resources. In explaining this impressive achievement in the sphere of education and related scientific and technical progress, one explanation has been the specifics of the Eastern mentality as striving for spiritual improvement, towards higher status and leadership (in society and in the world), patriotism and a high level of motivation for solving national problems.

The Asian model of education, comparing to the European or American one, is distinguished by its:

- greater emphasis on primary education (in the majority of these countries, in particular in Japan and South Korea, the duration of studies is 6 rather than 4 years);
- increased role of spiritual or ethical subjects (music, arts, ethics and aesthetics) in the programs of school education with the intention of providing schoolchildren with a sense of harmony and high moral standards;
- approach not only to provide students with academic knowledge, but also to transfer the skills of creative and original thinking (in Singapore the most important of the seven skills that school graduates have to possess are the ability to "reflect and express your thoughts" and "take an interest in surrounding things");

- very well equipped educational establishments, including primary schools, with computers and Internet access (South Korea was the second in the world behind Singapore to do this in schools, villages, and even on islands). In addition to the educational value it had also an economic impact, such as the administration managing to minimize expenditures on such things as publishing textbooks, other guides and on library maintenance;
- wide access to education for a wide range of social groups (in South Korea 97% of citizens aged 25–37 have a higher education—the highest figure in the world);
- flexibility and high level of differentiating types of educational establishments (in South Korea in the sphere of higher education, besides general colleges and universities, there exist vocational colleges, and distance learning universities);
- high level of student freedom and flexibility in which courses to take and when and in what order (in Japanese colleges and high schools less than 50% of courses are required courses) while at the same time providing a wide range of specialized and general courses;
- greater share of the private sector in financing and regulating educational establishments (in South Korea private sources contribute half the budget of preschool institutions, 80% of universities and the figure is 50% in Japan. Since 1994, China has been gradually integrating the system of government funding for secondary and higher education side by side with developing opportunities for students to take out educational loans and grants);
- great attention towards learning foreign languages, primarily English (with a high proficiency level not only in the ex-British colonies such as Singapore, Hong Kong, Malaysia and India, but also in Japan and South Korea where discussion is underway about making English the second national language);
- availability of special programs in identifying and directing gifted students to study in the best foreign universities (for example in Singapore and Malaysia such programs were coordinated by the highest level of government).

It goes without saying that the Asian model has its specifics in each of the countries of Asia, some of which have been recently highlighted in various countries. For example in India the priorities are still to increase access to education, international recognition of Indian diplomas, and the establishment of branches of the top foreign universities. In the case of Turkey one of the priorities is accreditation of its best universities according to American and European standards.

Some authoritative international organizations (specifically the OECD) and other experts consider that the Asian model of education is more comprehensive than the European one. Particularly Japan, South Korea, Singapore and Taiwan are constantly ranked within a small group of counties (along with Finland and Canada) as having the best national educational systems in the world. Further confirmation of the effectiveness of the Asian model of education is the fact that four of the above mentioned countries were listed as the most socio-economically developed in the world. It is worth mentioning that Hong Kong (being a former British colony) has a higher GDP per capita (based on purchasing power parity) than Great Britain ($34,700 in 2005). Singapore, which also was a colony just half a century ago, ranks higher than Germany and Italy ($29,800). South Korea and Taiwan range between $22,000 and $25,000—both extremely high figures. It is an interesting fact that Singapore holds the second place in the world in the sphere of exporting high-tech goods (60% of industrial exports), and the other three "Asian tigers" are at the same level as the USA (33%).

It is worth mentioning that the most powerful country of the world hasn't been able to resist the advance of China not only in the sphere of textiles and electronics, but also in school education. Hundreds of American high schools decided to switch from their methods of teaching mathematics to textbooks and methods used in China and Singapore. The effect was immediate, as the pupils of such high schools have demonstrated much higher levels of knowledge.

Deepening global economic, scientific and cultural integration involves all countries of the world, radically changing all areas of human activity. National and global systems of education are also influenced by this phenomenon. The so-called 'internationalization of higher education' is a vivid example of this influence, which resulted in a so-called 'mobile student' body. We now need to speak in terms of an international model of education, having its national specific features in different countries

It is extremely difficult to speak about the exclusiveness or some obvious advantages of these education models. Generally, these models coexist peacefully in the educational systems of European countries and the USA. It should be remembered that both the European and American education systems were formed as the result of applying the experience and reforming three national systems formed at the end of the nineteenth and beginning of the twentieth century: the British, French and German. The American system is a classic example of how different models can be used when forming a new system of higher education. The American system gradually implemented elements of the British, French and German models. The first stage of education in the USA is influenced by the British system, the second stage is similar to the French model of professional education, and the third one focuses on the research function which is typical of the German model.

Uzbekistan always had a strategy for reform based upon adopting the most valuable legacies of Soviet practices, local traditions, as well as incorporating the best foreign experience. In the course of reforming the national system of education, Uzbekistan's strategy seeks to give full attention to how to blend its own model with those of other countries—namely the three models outlined and primarily the Asian model.

Box 1.5. Analytical review of the list of the top 500 universities in the world (2006)

In 2006, 37 countries of the world possessed universities and higher educational institutions in "The List of Top 500 Universities in the World," compiled by the Institute of Higher Education, Shanghai Jiao Tong University. These were distributed as follows: Europe (207 universities in 19 countries), Americas (196 universities in 6 countries), Asia (71 universities in 8 countries), Australia and Oceania (21 universities in 2 countries) and Africa (5 universities in 2 countries).

As Table 1 below shows, one third of the top 500 universities of the world are in the United States, thus making USA the champion in this regard. With only a population of 60 million in a world of 6 billion people, Great Britain's second place in the ranking is very impressive. Overall, the EU is well represented in the list. On the Asian side, Japan dominates the list, while Hong Kong and Singapore are noted for excellence well above the size of their national territory or population.

Brazil, Russia, India and China are represented in the list but much below their economic and other attributes. As a whole, if one would take into consideration the ratio of the number of universities to the population size, then the champions are small countries such as Sweden, Switzerland, Israel, Denmark, Finland and Norway. Each of them possesses one prestigious university per a million citizens. Some countries with significant populations, such as Ukraine, Turkey, Thailand, and Indonesia are notable for not having even a single university in the list.

Table 1. Countries that had their higher education establishments listed among top 500 universities of the world

USA 166	South Korea 9	China-TW..... 5	Hungary..... 2
Great Britain 43	Spain..... 9	New Zealand 5	Greece 2
Germany 40	China 1 9	Norway..... 4	Argentina..... 1
Japan..... 32	Switzerland..... 8	Brazil 4	Czech 1
Italy 23	Israel 7	South Africa 4	Mexico 1
Canada..... 22	Belgium 7	Ireland..... 3	Chile 1
France..... 21	Austria..... 7	Russia 2	Egypt..... 1
Australia 16	Denmark 5	India..... 2	
Netherlands 12	Finland 5	Poland 2	
Sweden 11	China-HK..... 5	Singapore 2	

1 Without Hong-Kong and Taiwan

There are 37 countries listed in the "Top 500 Universities" ranks. But, as one starts looking into the top 10, top 20, top 50 and top 100 categories, another fact emerges—US universities overwhelm the ranks: 8 out of 10, 17 out of 20, 37 out of 50 and 52 out of 100 best universities of the world are American. In the top 10, there are 8 US universities and 2 from Great Britain—no other country is represented!

Table 2 displays another stark picture of the prominence of the USA and UK in tertiary education. The Anglo-Saxon part of the world has built up a huge advantage in education with a commanding lead in the ranks of excellence. In general, though, one observes a strong correlation between the position of a country in the list (Table 1) and its economic prowess or human development index (HDI).

Table 2. Top world powers in education

	The top 100 universities	The number of universities of the country among the top in the world			
		10 universities	20 universities	50 universities	100 universities
USA	1	8	17	37	52
Great Britain	2	2	2	5	11
Japan	19	–	1	2	6
Canada	24	–	–	2	4
Switzerland	27	–	–	1	4
Netherlands	40	–	–	1	2
France	45	–	–	1	4
Sweden	48	–	–	1	4
Germany	51	–	–	–	5
Australia	54	–	–	–	2
Denmark	56	–	–	–	1
Israel	60	–	–	–	1
Norway	68	–	–	–	1
Russia	70	–	–	–	1
Finland	74	–	–	–	1
Italy	100	–	–	–	1

Data presented in Table 2 testifies that population, natural resource endowment or GDP, even for industrialized nations, does not necessarily carry a country higher in the top 100 university list. Great Britain, Japan, Switzerland and the Netherlands are well ahead of Germany, Russia and Italy.

Table 3. Top 20 universities of the world

1. Harvard Univ (USA)	11. Yale Univ (USA)
2. Univ Cambridge (Great Britain)	12. Cornell Univ (USA)
3. Stanford Univ (USA)	13. Univ California—San Diego (USA)
4. Univ California—Berkeley (USA)	14. Univ California—Los Angeles (USA)
5. Massachusetts Inst Tech (USA)	15. Univ Pennsylvania (USA)
6. California Inst Tech (USA)	16. Univ Wisconsin—Madison (USA)
7. Columbia Univ (USA)	17. Univ Washington Seattle (USA)
8. Princeton Univ (USA)	18. Univ California—San Francisco (USA)
9.Univ Chicago (USA)	19.Tokyo Univ (Japan)
10.Univ Oxford (Great Britain)	20.Johns Hopkins Univ (USA)

1.4.2. Education during the transition period

The education system that emerged at the beginning of 1990s in the post-Soviet and post-socialist world preserved many features of the Soviet model. This Soviet model had some positive features such as access to free primary and secondary education for all groups of the population, and the fundamental and technical focus of educational curricula at all levels of learning.

At the same time, economic recession, which brought about the collapse of the USSR and the breakdown of the socialistic bloc at the end of the 1980s, had a destructive impact on standards of living of the post-Soviet countries. Strict governmental regulation of the education system, which has been the norm in socialist countries, made the system helpless in the conditions of economic crisis.

The problems encountered by these newly independent countries in the sphere of education at the beginning of the 1990s were more or less the same:

Table 1.12
Share of public expenditure on education in selected transition economies, as % of GDP

	1990	2000–02		1990	2000–02
Czech Republic	4.1	4.4	Moldova	7.8**	4.6
Slovakia	5.1	4.4	Russia	3.7	3.8
Belarus	4.6*	6.0	Ukraine	5.3***	5.4

Source: W. Scott. Human Development in Statistics. UNDP, Bratislava, 2006, p. 135; Human Development Report 2006, Moscow, "The Whole World", 2006.
Note: *1991 **1992 ***1994

1. **Financial problems**

- Sharp reduction of budget sources for the full-fledged financing of education due to economic recession and decreased government budget revenues;
- reduction in financing and high inflation rate which resulted in a sharp decline in salaries and living standards of the personnel. As a result qualified teachers left for other sectors such as small business and trade. The situation was aggravated because of the sharp drop in new teaching personnel and shortage of teachers, especially in schools. In 1990 the number of teachers with a higher education working in other sectors of the economy was 31,500. By 1994 this number had grown

to 42,800. The shortage of teachers in 1994 was 23,000, 20,000 of which was for secondary schools[14];

- decline of funding for the maintenance of educational establishments resulted in a further worsening of the already poor facilities and physical deterioration of the buildings and equipment, including laboratories;
- the shortfall in financing restricted possibilities to provide schoolchildren with new textbooks. For example in 1994 in Uzbekistan two out of every 10 schoolchildren did not have a full set of textbooks;
- preschool education suffered most from insufficient financing; all countries were not able to maintain its previous scale, let alone enlarge it;
- financing of higher education dropped sharply, with the result that the number of students studying for free declined.

2. **Problems of content and quality of education**

- there were no approved new curricula and textbooks for subjects in which significant changes were called for in terms of content: history, literature, geography, economics, law and other humanities and social sciences;
- due to the shortage of qualified staff the quality of education was declining. Many teachers of the humanities and social sciences could not deliver the new content and amount of teaching required;
- the liberalization of education was not accompanied by an adequate system of teaching the humanities and social sciences, which resulted in an uncertainty in global outlook of young people, and a loss of framework of values for many young people.

3. **Problems of educational access**

- the decline in the standard of living, growth of poverty due to the economic crisis, and reorganization of the whole economic system reduced the financial capacity of many families, especially in rural areas, to send their children to school on a regular basis. Many schoolchildren missed classes for reasons related to poverty: lack of clothes and shoes to attend school during the winter period, lack of money to buy textbooks and other school supplies, and the need to earn money with the aim of increasing the family income;
- in a number of countries armed conflicts and civil wars (Tajikistan, former Yugoslavia, South Ossetia, Chechnya) also deterred children from attending schools;
- the introduction of fee paying education, especially in the system of pre-school and university education, reduced the access to these services for children from poor families.

4. **Problems of demand for education**

- economies in the throws of reform and recession could not absorb all university graduates. Many enterprises halted production and as a result graduates of technical universities and other educational institutions were not in demand. Even more qualified and experienced people lost their jobs. Young graduates had serious difficulties trying to find a job within their specialization;
- education during this period stopped being a key condition for career growth, growth of income and material welfare. The weakness of the legislative framework in transition economies in the 1990s created opportunities

14 Human Development Report, Uzbekistan, 1995, p. 31

for making large amounts of money via dubious financial and trade transactions. People with low moral principles and those who thought nothing of violating the law quickly adjusted to these new conditions. These people were not necessarily those with a higher education. Moreover, such factors as education, intelligence and law compliance were in many ways an obstacle for achieving material welfare by any means. So during this period citizens could earn a lot without higher education or even a completed secondary education.

5. **Problems of educational facilities**

- the quality of facilities was low even before the economic crisis, especially in many republics of the former USSR where the majority of schools in rural areas did not have appropriate buildings. The schools did not have running water, sewage, telephone or gas;
- due to the shortage of funds in the 1990s school administrations could not properly repair and maintain buildings, which led to considerable deterioration. The construction of new schools almost completely ceased. As a result, the average number of 'shifts' schools ran became close to two, and many schoolchildren had to attend schools located far from their houses. The problem of transportation was also left unresolved;
- schools and universities were physically decaying and most of the equipment, especially in laboratories, became obsolete. There was a lack of school furniture, and libraries did not have sufficient number of textbooks.

Many of these problems of the period prior to 1996 were also relevant for Uzbekistan.

Table 1.13
Some indices, characterizing education in Uzbekistan in 1992–1996

Education indices	1992	1993	1994	1995	1996
Enrolment of 7–22 year olds (%)	72.5	70.8	68.9	69.5	69.3
Number of 19-year olds still in full-time education (%)	30.8	26	26.2	24.9	20.8
Government expenditure on education (as % of GDP)	10.2	9.5	8.3	7.4	7.7

Source: State Committee of Statistics of the Republic of Uzbekistan

The main challenges and objectives faced by the governments in transition economies during this period were:

1. Clearly identifying and then overcoming the factors undermining the previously strong educational system such as the loss of teaching staff.
2. Setting clear targets related to the new goals and standards—implementation of an organizational and methodological transformation with the focus on new objectives and targets.
3. Creation of a new system of governance, with the aim of ensuring effective reform of education at all stages in accordance with the principles of a market economy and global challenges.
4. Transition of the education system based on new principles of financing, aiming to accumulate sufficient funds to maintain high levels of effectiveness.

5. Stimulate the demand for qualified professionals being prepared at secondary, specialized and tertiary educational establishments, and increasing the status of the profession of teacher in society.
6. Reconsider the previous approaches to education, in particular rejecting the principles of ideologizing and politicization, strengthen the humanities focus of the educational system without losing the inherited fundamentals and strong technical basis of education.
7. Improving facilities

The government of Uzbekistan clearly understood all these problems and therefore in 1996 it was the first post-Soviet country to design and approve the National Program of Personnel Training with the aim of gradually reforming the whole system of education[15].

1.5 International Conventions and the Declaration on Education

> 'Only using the children's rights-based approach will all countries will be able to achieve their goals in developing and ensuring peace'.
>
> Kofi A. Annan

Regarding the critical role of education in social progress and human development, the international community has developed a set of international legal regulations for dealing with issues related to education. The most important are the following:

- Universal Declaration of Human Rights;
- Geneva Declaration of the Rights of the Child;
- Convention on the Rights of the Child (1989);
- Recommendation Concerning the Status of Teachers (1966);
- Convention against Discrimination in Education (1960);
- Convention on Technical and Vocational Education (1989);
- Recommendation Concerning Education to Promote Mutual International Understanding/Cooperation and Peace; to Promote Human Rights and Key Freedoms (1974).

The Universal Declaration of Human Rights adopted at the UN General Assembly in December 1948 asserted the right of all people to education[16] and proclaims that discrimination is inadmissible. It states that any discrimination in education violates human rights.

In line with Clause 26 of the Declaration, primary education must be compulsory, technical and vocational education must be widely available, and higher education must be equally available for everyone on the basis of individual capabilities. Thus education must be free of charge, or at least primary and basic education.

In 1924 the League of Nations adopted the Geneva Declaration of the Rights of the Child, thus the international community made a set of commitments to protect children's rights to life, healthcare and education.

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15 In-depth analysis of reforms in education carried out in Uzbekistan will be carried out in the third chapter of the Report.

16 Collection of International Treaties. Vol. 1 (Part One). Universal Treaties. United Nations Organization, New-York and Geneva, 1994, p. 7.

The most comprehensive and fullest coverage of governments' commitments to education for all people has been provided in the Convention on the Rights of the Child that was adopted be the General Assembly of the United Nations in 1989.[17] This Convention has been met with complete approval because the Convention and its Optional Protocols declare legal obligations of the states to children. In 1992 all countries throughout the world ratified the Convention, and since then children's survival and ensuring their development and protection have not been considered as purely charitable activities but as moral and legal obligations.

Two articles of the Convention on the Rights of the Child exclusively concern education, and five other articles set up goals to support education.

Article 28 lays down the fundamental right to education such that the state's responsibility is:

- to provide free and compulsory primary education;
- to promote various forms of secondary education;
- to ensure the availability of information and materials about the field of education and vocational training for all children;
- to take measures in order to promote children's school attendance on a regular basis and to reduce the number of school dropouts.

Article 29 recognizes the necessity of:

- developing the personality, talent, intellectual and physical capabilities of the child to their fullest potential;
- preparing the child for a responsible life in a free society;
- bringing up the child with respect for parents, cultural identity, language and moral values, and respect for the culture and values of other people as well.

There are provisions in the Convention that deal with children's rights:

- to be provided with useful social and cultural information (Article 17);
- to be looked after at special institutions while parents are at work (Article 18);
- to be entitled to rest and leisure time, to free participation in cultural life and
- to participate freely in the arts (Article 31).

In line with Article 42 the member-states of the Convention are responsible for informing both adults and children about the principles and provisions of the Convention to ensure that they are aware of their rights that are pertinent to international law.

Discrimination in education means any type of difference, exclusion, restriction or preference on the basis of race, skin colour, gender, language, religion, political or other belief, national or social origin, economic position or birth, and any action which violates the principle of equality.

Article 1 of the Convention on the Struggle against discrimination in education, adopted on December 14, 1960 by the General UN Conference, on issues of education, science and culture enumerates four types of discrimination:

- closure of access to education at any stage or of any type for a person or a group of people;
- restriction of education for a person or a group of people with low education levels;

17 Collection of International Treaties. Vol. 1 (Part One). Universal Treaties. United Nations Organization, New-York and Geneva, 1994, p. 192.

- creation or preservation of separate teaching systems or educational establishments for a person or a group of people;
- situation in which a person or a group of people can be set which is not compatible with the person's dignity[18].

Article 13 of the International Pact on economic, social and cultural rights shows that education should be focused on human development and an understanding of human dignity. Education should strengthen respect for human rights and the main freedoms[19]. At the same time, education should:

- Provide opportunities to all to become useful members of a free society;
- Facilitate mutual understanding, tolerance and friendship between all peoples and races, ethnic and religious groups;
- Support the work of UN agencies in maintaining peace.

The provision of life-long education at all stages is one of the major directions of UN activity related to issues of education, science and culture (UNESCO). UNESCO programs consider the fact that education plays an important role in human development, economic growth and strengthening social links. These programs stress that education is an important instrument to combat poverty and is one of the foundations of sustainable development.

In 1975 the Geneva International conference on education, organized by UNESCO, approved the first International Standard Classification of Education (ISEC). Yet this classification failed to keep pace with the rapid educational revolution that was taking place during the last decade of the twentieth century, primarily the diversification of education, i.e. the emergence of more diversified forms of education tailored to the particular needs of different groups and strata of the population. As a result, in November 1997 the UNESCO General Conference adopted a new ISEC.

The system of education in each country is as unique as its cultural traditions, customs, and social and economic conditions. The ISEC, therefore, does not seek to impose common standards for the whole world community. It is an instrument for the collection, processing and analysis of indicators and statistical data on education both in individual countries and worldwide. Analyzing this data helps to guide national education policy and can suggest changes and amendments to the whole national model of education.

The experience over time of applying ISEC by both national authorities and international agencies (including UNESCO) has contributed to the consideration of new trends and changes in education occurring in various parts of the world, such as:

- increasing number of different forms of professional education and staff training;
- increasing the variety of institutions providing education;
- wider use of distance learning and other educational opportunities related to new technologies.

The World Conference 'Education for All', held in Jomtieng (Thailand) in 1990, drew the attention of the world community to the fact that after two decades of progress in education the influx of investment into primary education had declined in many developing countries, while in some regions of Africa the indicator had dropped sharply. In some countries public budget allocations for education are not sufficient to cover the costs of textbooks and staff salaries; the quality of teaching is re-

18 Collection of International Treaties. Volume 1 (part one). Universal Treaties. United Nations, New York and Geneva, 1994, p. 114.

19 ibid, p. 15.

puted to be poor and the number of dropouts extremely high. A survey carried out by UNESCO in 100 countries at the end of the 1980s showed that two thirds of countries had cut budget allocations per pupil, while in half of the countries the number of pupils at primary schools had reduced. It was found out that in developing countries every fourth adult could neither read nor write.

The Jomtieng conference document, based on the Universal Declaration of Human Rights and Convention on the Rights of the Child, declared that any child, young person or adult, as a human being is entitled to education, meaning that their basic education needs should be satisfied in the highest and fullest sense of the word. It was declared that people should have the option to learn to think, act, live and coexist with others. It was declared that the system of education should promote the development of the talents and potential of each person and encourage human development so that people could improve their life and transform society.

Discrimination against women in education is expensive. Educated women directly contribute to the gross national product (GNP) growth of the country due to their more efficient work. They give birth to healthier children because they understand the importance of such key factors as healthy meals, hygiene, primary healthcare, emergency aid, immunization and family planning. Healthy children distract their parents less from labour activities, and they will be the healthy and educated people of the future. Research has repeatedly proven that educated women generally get married later, have fewer but healthier children, and invest money in the education of their offspring. One survey in Malaysia showed that girls' education is more efficient (by 20%) in terms of wages and productivity than boys'.

Women's literacy is a critical factor in reducing child mortality. The children of more educated mothers have more opportunities to survive and healthfully develop than the children of less educated or illiterate mothers.

Federico Mayor, UNESCO General Director, said at the Conference in Jomtieng that the provision of school education to more children is only the beginning. It is necessary to resolve the problems related to improving children's literacy. Inadequate education in many countries means that students attend school for many years but they do not achieve the sustainable literacy level. It is estimated that an additional $5 billion per year is necessary to improve primary education though it is widely recognized that it is possible to raise most of this by simply reallocating existing resources.

The Declaration announced the end of the rigid, prescribed educational system and the beginning of a new era of flexible systems. All countries were recommended to put into place educational systems that are able to adapt to the users' needs and requirements. It was underlined that it is necessary to take into account the cultural and historic context of the students while teaching.

The key sponsors of the Conference in Jomtieng were UNESCO, UNICEF, the UN Development Program (UNDP) and the World Bank, and they appealed to the countries to change the hierarchy of priorities in the field of expenditures to achieve three key goals:

- basic education for no less than 80% of children worldwide by the year 2000;
- halving adult illiteracy using 1990 as a baseline;
- provision of equal opportunities for girls and boys.

Over the last few years world leaders have reaffirmed these commitments, and identified specific goals, measures and timetables.

Thus, in April of 2000 the World Education Forum in Dakar (Senegal) summed up the outcomes of implementing the Education for All strategy during the previous ten years. The Dakar Forum strengthened the focus on education as the most important component of human development. The main document of the forum, the 'Dakar Framework of Action—Education for All: Compliance with Our Commitments' reaffirms that education is a basic human right. It is a key to sustainable development, peace and stability within the country and good neighbourly relations with other countries. Education is an essential tool for effective participation in the social and economic life of the twenty-first century characterized as it is by the unrelenting process of globalization.

The principles on basic education established by the Jomtieng and Dakar forums are organically complemented by the ideas and goals set forth by the World Higher Education Conference held by UNESCO in Paris in 1998. The Conference recommended that governments of all countries make access to higher education and equal opportunities for receiving it a primary goal of educational policy. It was clearly stated that higher education should collaborate with the labour market and not just react to it.

Thus the world community opposed the restriction of educational functions to just creating a labour force or staff training. The Paris Conference, therefore, expressed concerns about the weakening of the social, interpersonal, cultural and moral functions of education.

The problems of adult education development were discussed at special international conferences in 1960 in Montreal, 1972 in Tokyo, 1985 in Paris, and in 1977 in Hamburg. In 1976 they were the focus of the UNESCO General Assembly in Nairobi. All these forums highlighted that education for adults determines the moral and aesthetic climate of a society and plays a crucial role in the social and economic progress of mankind. The declaration adopted at the Hamburg International Conference proclaimed that education for adults is not only a right, but also one of the keys to open the door into the twenty-first century.

Developing capabilities, improving knowledge and the upgrading of professional qualifications of adults are considered to be an inalienable part and critical component of the new educational strategy—lifelong learning. The concept of lifelong learning is of critical importance in countries with economies in transition, where both individuals and the general lifestyles of society change so quickly. The very essence of this concept recognizes the necessity of creating the necessary conditions and developing the learning abilities of an individual to study not only at school age but during his or her professional occupation in both formal and informal educational and training institutions.

The key goal of this concept is to promote the self-development of the individual who makes his or her fortune at the same time as actively and skilfully participating in the economic and social life of society.

In the Millennium Declaration that was adopted by the UN General Assembly in September 2000 at the dawn of the new millennium, the heads of states and governments unanimously stated that they would redouble their efforts to promote democracy and strengthen the rule of law. They promised to ensure all the inalienable human rights and key freedoms in their countries including the right of development.

The commitments of the governments made at the Millennium Summit and at the Special Session of the General Assembly on the status of children, a 'World Fit for Children' that was held in May 2002, are all in agreement. They are mutually comple-

mentary and seem to be a holistic strategy—a Millennium Agenda of measures to protect human rights at the beginning of the twenty-first century.

Achieving the goals and objectives that have been formulated in the Millennium Declaration (the Millennium Development Goals) is aimed at improving the quality of life of a large proportion of the world's population. Mankind will be saved from many diseases and untimely death, extreme poverty and malnutrition. And finally, the poorest people all over the world will get access to safe water and sanitation, and to universal basic education as well.

All UN member-countries are committed to achieving the MDGs, therefore they have united around a set of key initiatives to accelerate progress. Education issues are covered by goals number 2 and 3: ensuring universal basic education and empowering women through eliminating gender disparities in education.

Box 1.6.
Development Goals formulated in the Millennium Declaration as the key objectives of the Millennium Agenda

Goals (Objectives for 2015)

1. Eradicating extreme poverty and hunger.
- Reduce by half the proportion of people living on less than a dollar a day.
- Reduce by half the proportion of people who suffer from hunger.

2. **Achieving universal basic education**
- Ensure that all boys and girls complete a full course of primary schooling.

3. Promoting gender equality and empowering women
- Eliminate gender disparity in primary and secondary education preferably by 2005, and at all levels by 2015.

4. Reducing child mortality
- Reduce by two thirds the mortality rate among children under five.

5. Improving maternal health
- Reduce by three quarters the maternal mortality ratio.

6. Combating HIV/AIDS, malaria and other diseases
- Halt and begin to reverse the spread of HIV/AIDS. Halt and begin to reverse the incidence of malaria and other major diseases.

7. Ensuring environmental sustainability
- Reduce by half the proportion of people without sustainable access to safe drinking water.
- Integrate the principles of sustainable development into country policies and programs; reverse loss of environmental resources

8. Developing global partnership for development
- In cooperation with private sector to take measures to provide for all people the access to the benefits of new technologies, especially to information and communication technologies.

Source: UN Millennium Declaration of 2000 and other UN documents.

One of the development goals is to provide universal primary education for all boys and girls worldwide. This is the only goal in which universality and completion is aimed at. It appeals to all governments, international institutions and donors to create the necessary conditions for providing all children with education, and especially for those who are currently excluded from education.

In many countries girls have fewer opportunities to attend school than boys. The situation worsens for girls at higher levels of education. The gender parity de-

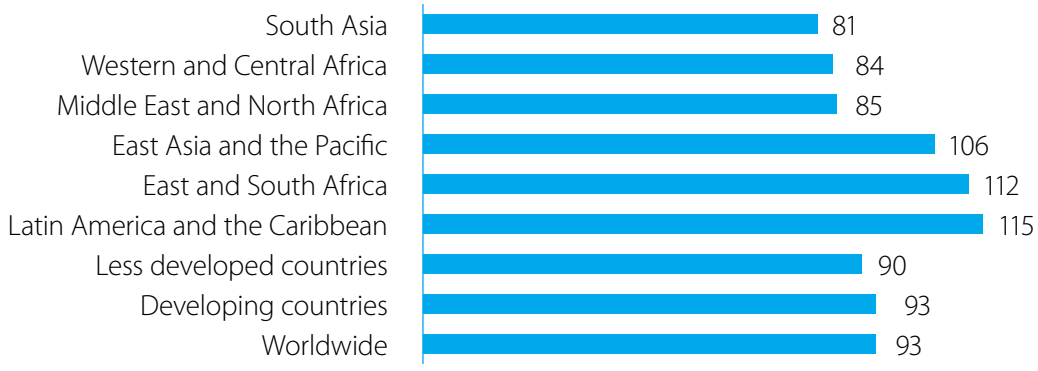
clared in the Millennium Declaration is a key objective in the field of human development. It is a very important component that effects changes in gender relations and gives a guarantee that boys and girls have equal access to all educational levels. It is expected that all the necessary conditions should be put in place to help them fully use their capacities.

Around 121 million children, the majority girls, do not attend school and as such are deprived of their right to education. Although they ratified the Convention on the Rights of the Child, the governments of some countries could not fully meet their commitments. If the second Millennium Declaration Goal is not achieved 75 million children, 70% of them in Sub-Saharan Africa, will not enjoy their legal right to primary education in 2015[20].

Gender inequality in primary and secondary education will be the first unrealized MD goal. This will be partly due to a shortage of secondary education provision. According to the assessments made by UNESCO, it is unlikely that 76 countries could achieve gender equality in primary and secondary education by 2005. Given current trends gender equality will not be achieved in 54 countries by 2015. It is necessary to support these countries in taking initiatives to achieve equality in education by 2015[21].

Additional resources will be needed to provide all children with primary education but this goal cannot be considered as optional or unachievable. To provide quality primary education for all boys and girls worldwide will cost $7–17 billion per year. This amount of money is relatively small in comparison with other governmental expenditures. And yet the benefits from these investments are enormous in terms of health, productivity and the social welfare of children of this generation and the generation to come.

Diagramme 1.5.
Girls' secondary school attendance in comparison with boys' secondary school attendance (number of girls per 100 boys)



Source: Data provided by the UNESCO Statistical Institute (1998-2002), including assessment data collected in 2000 as part of the program 'Education for All'.

Achieving the MDGs should benefit not only the well off but also the vulnerable children who cannot fully exercise their rights. These children are marginalized be-

20 The State of the World's Children, 2005. Threatened Childhood. UNICEF.
21 UN Millennium Project, Task Force on Education and Gender Equality, Toward Universal Primary Education: investments, incentives, and institutions. Earthscan, London, 2005, p. 9.

cause they do not have access to vital services, and because society and the state do not protect them. The activities of all UN member states should be focused on addressing these deficits within the Millennium Agenda.

The new international legal order of the twenty-first century can only be achieved with the efforts of all countries. The UN General Assembly at its anniversary session in September 2005 made an appeal for all countries and governments to continue taking decisive actions to implement internal and external policy aimed at protecting human rights, and this is stated in the Resolution of the World Summit. This reaffirms the decisiveness and will of countries worldwide to make the world better for human beings, including in the sphere of education.

CHAPTER 2

HUMAN DEVELOPMENT IN UZBEKISTAN

2.1. INTRODUCTION: UZBEKISTAN AND THE HUMAN DEVELOPMENT INDEX

Uzbek people greet each other with a series of questions about their well-being, family, and work and traditionally end by wishing the other person a long, healthy, productive and good life. The concept of human development is thus an inherent and integral part of the Uzbek culture and mentality. Despite the problems faced in the transition period, the government of Uzbekistan has striven to honor this traditional cultural value attached to human development. This can be seen *inter alia* in the priority which the government has always attached to redistributive policies, to investing in health and education services, and to social protection for the vulnerable groups in society. It is only through the people—the human capital of society—that prosperity can be created.

For example, Uzbekistan was the first amongst the post-Soviet states:

- To declare that social protection of the population would be one of its main priorities during the transition period. As early as 1994, i.e. three years after independence, the whole system of social protection was restructured in order to provide targeted social assistance to the most vulnerable sections of the population;
- To embark on radical reform of the education system and start strengthening its infrastructure. Reform started in 1996, whereas many other transition economies launched reform of the education system ten years later, while others have not yet started;
- To launch a public healthcare reform program (1998), the first stage of which entailed a dramatic change of approach to the provision of primary health care, the creation of a fundamentally new type of well-equipped medical facility providing primary care in rural areas where 64% of the population lives, new approaches to the provision of maternal and child care, and new approaches to emergency health care services.

As a result of these and other social policy initiatives almost all of the HDI indicators in Uzbekistan have shown a stable upward trend (see table 1 in the Statistical Annex). The education (40.45%) and life expectancy (34.92%) indexes carry the greatest weight in the HDI score (in education it ranked 80th out of 177 countries in 2004, and in life expectancy it ranked 112th). Uzbekistan's per capita GDP figures (ranking 141st out of 177) are less optimistic. If the country can succeed in improving this indicator, it could achieve a further increase in its HDI score and ranking.

Chapter 1 of this report set out the basic principles of human development, which is based on the principle of expanding choices through building human capabilities, including the capability to lead long and health lives, to be knowledgeable, to have

Box 2.1: Every year a new social policy priority.

Uzbekistan has established a tradition of attaching to each year a certain name to emphasize the priority areas of reforms in social policy. It aims at focusing the attention of society, joining efforts, and consolidating a range of government, private sector and civil society resources to address particular problems. Since 1997 each year has been dedicated to a specific goal and a special program adopted and implemented:

1997—year of the people's interests;
1998—year of the family;
1999—year of women;
2000—year of a healthy generation;
2001—year of mother and child;
2002—year of the older generation's interests;
2003—year of the Mahalla;
2004—year of kindness and mercy;
2005—year of health;
2006—year of charity and medical workers;
2007—year of social protection.
2007—year of social protection.

access to resources needed for a decent standard of living, and to be able to participate in the life of the community. While the other chapters in this report focus on the country's efforts to improve the access and quality of education provided to its citizens, this chapter focuses on recent government efforts to improve per capita GDP and to provide opportunities for all citizens to have a decent standard of living.

In order to ensure that citizens have access to the resources needed to achieve a decent standard of living, the country has to achieve high rates of economic growth and ensure that the benefits of this growth are enjoyed by the various strata of society through access to remunerative employment and production resources, such as land, credit etc. Analysis of the latest economic and social data shows that, while per capita GDP rates have been increasing, the strong economic growth experienced by the country since 2003 has not been reflected in a proportionate reduction in income poverty rates, especially in rural areas. Therefore, a sizeable section of the population has not yet benefited from this growth. Productive job creation, however daunting a task, is vital and pivotal to the Welfare Improvement Strategy (WIS) for 2008–2010. This comprehensive strategy envisages a series of policy measures to change the character of economic growth, make it more broad based and labour-intensive, as well as to strengthen the redistributive policies currently in place (mainly but not only in the form of targeted social transfers) and increase public investment in social and economic infrastructure.

2.2. THE CHALLENGE: ECONOMIC GROWTH WHICH LEADS TO THE CREATION OF NEW PRODUCTIVE JOBS

As indicated above, the country has experienced steady growth in recent years. Figure 2.1 shows that in the period 2003–2006 rates of economic growth increased to 7–8 per cent annually (compared to 3–4 per cent in the period 1996–2002), and growth rates are forecast to remain in the range of 8–9 per cent in the period up till 2010 (see WIS Table 1.1)

Figure 2.1
GDP Growth rate in Uzbekistan

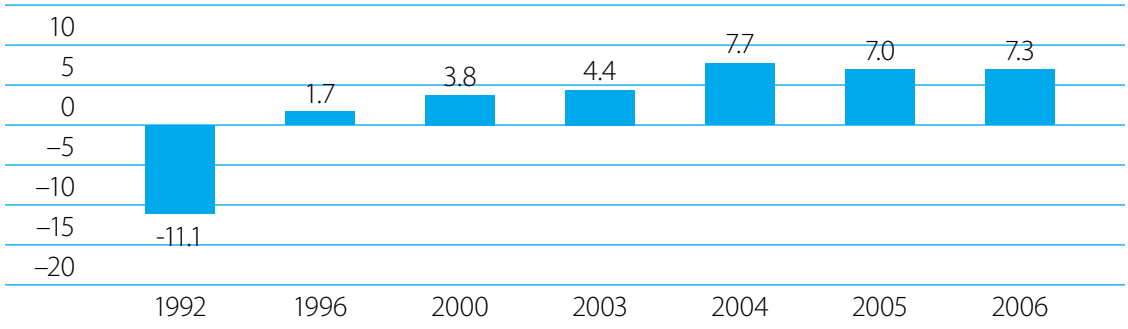


Figure 2.2.
Inflation rate by CPI

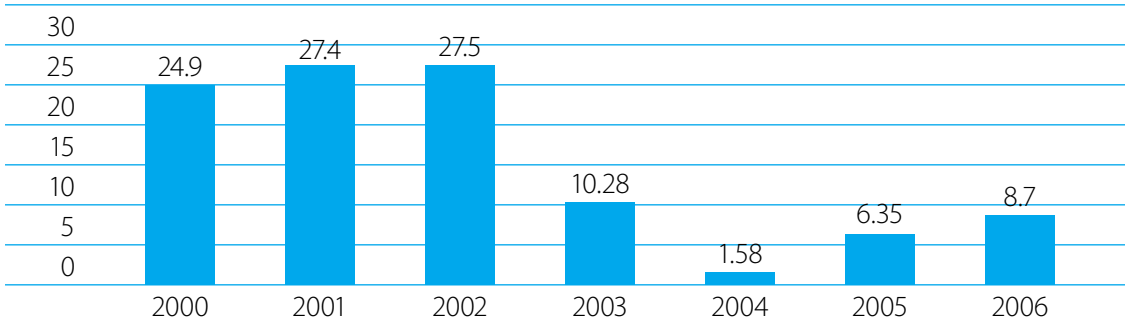


Figure 2.3.
Budget Deficit (Surplus)

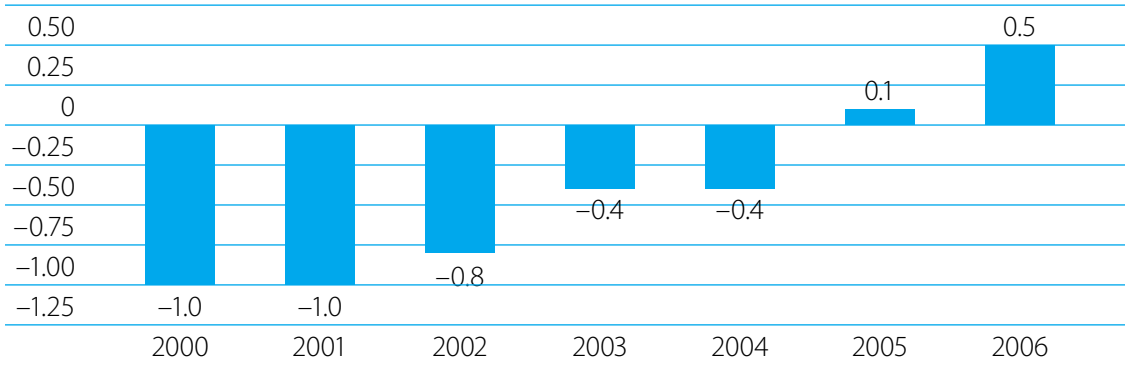


Table 2.1.
Growth in Real Disposable Household Incomes

	Compared to the previous year (%)	Compared to 2000 (%)
2000	124.7	100.0
2001	117.9	117.9
2002	111.4	131.3
2003	101.0	132.7
2004	112.9	149.8
2005	120.2	180.0
2006	144.5	260.1

Source: annual Household Budget Surveys carried out by the State Committee of Statistics

The government has also continued to pursue policies aimed at maintaining macroeconomic stability, and the inflation rate was kept at the relatively acceptable level of 6.8% (compared to levels in the range of 21–28 per cent in 1997–2002), and since 2005 there has been a budget surplus, constituting 0.5 per cent of GDP by 2006.

The positive results reported above have been reflected in trends for real average per capita income growth, and by 2006 real disposable incomes were almost 2.6 times higher than in 2000.

However growth in average income levels does not give the full picture on living standards in the country. Firstly, they do not capture the income inequality and differences in rates of income growth (between regions and between population groups). Secondly, income is generally known to be a poor indicator of living standards in transition economies, where income is often derived from informal economies and goes undeclared.

For this reason, since 2001 poverty levels have been calculated for the country using data on per capita consumption levels from the annual Household Budget Surveys conducted by the State Statistical Committee, and using a food poverty line, based on the cost of typical basket of goods that yields a daily intake of 2,100 calories. On this basis it has been estimated that 6.8 million people were living in poverty in 2001, comprising 27.5 per cent of the total population. Since these results are based on food consumption only, i.e. the poverty line is based on quite a restrictive basket of goods, with no allowance for non-food expenditure, these can be taken as estimates of quite severe poverty.

Analysis of the results for the period 2001–2005 suggests that there has been a slowly decreasing trend in poverty rates (from 27.5 to 25.8 per cent, see table 1 below), but that the main reduction has been achieved in urban areas, where poverty rates have fallen from just over 22 per cent in 2001 to 18 per cent in 2005. Poverty rates in rural areas have remained stable, and were even slightly higher in 2005 compared to 2003. The difference in poverty risk (and living standards) for those living in urban and rural areas appears to be growing: while there was an 8 per cent difference in 2001, the difference is now almost 12 per cent (table 1). And while 64.4 per cent of the total population lives in rural areas, the share of the poor population living in rural areas is 74.7 per cent.

Table 2.2.
Poverty headcount 2001–2005 (per cent)

	2000/01	2002	2003	2004	2005
Overall	27.5	26.5	27.2	26.1	25.8
Urban	22.5	21.8	22.6	18.8	18.3
Rural	30.5	29.4	29.8	30.3	30.0

Source: WIS, chapter 3 (based on results from the Household Budget Survey conducted by the State Statistical Committee)

As for the geographical distribution of the poor, there is evidence of a large differentiation in poverty risk between regions, and of a striking difference in living standards and opportunities between Tashkent city and the rest of the country. The poverty risk is highest in Karakalpakstan (44 per cent), and lowest in Tashkent city (6.7

per cent); Fergana is the oblast with the lowest poverty risk if we exclude Tashkent city (15.8 per cent). Tashkent city accounts for 8.2 per cent of the population, but just 2.1 per cent of the poor population (see table 2.3 below).

Table 2.3.
Geographical Distribution of the Poor Population in 2005

Area/Oblast	Poverty headcount	Share of total population	Share of poor population
Overall	25.8	100	100
Urban	18.3	35.6	25.3
Rural	30.0	64.4	74.7
Karakalpakstan	44.0	5.1	8.7
Andizhan	23.1	9.5	8.5
Bukhara	20.8	6.4	5.1
Dzhizak	29.6	3.7	4.3
Kashkadarya	41.0	8.5	13.5
Navoi	26.3	2.9	3.0
Namangan	33.4	7.9	10.2
Samarkand	23.9	11.2	10.4
Surkhandarya	34.6	7.3	9.8
Syrdarya	32.6	2.4	3.0
Tashkent oblast	20.4	10.1	8.0
Fergana	15.8	11.6	7.1
Khorezm	31.0	5.1	6.1
Tashkent city	6.7	8.2	2.1

Source: WIS, Chapter 3

Analysis of the 2005 annual Household Budget Survey data showed that in poor households 11 per cent of able bodied family members are employed, compared to 56 per cent in rich households, suggesting that access to productive employment is critical to improving household living standards (see WIS, chapter 3). Households with more than 2 children were more likely to be poor, as were those with more than 2 working age adults. In 2005, the average size of poor families was 6.5 members, while it constituted 4.76 for non-poor families, and the average dependence rate for poor households was 0.81, compared to 0.73 for non-poor. This suggests that the government has to enhance and strengthen its efforts to provide strong support to families with children (through child benefits and the provision of health and education services). Another result which has been highlighted already in chapter 1, is that the risk of poverty was higher for households whose head had acquired only secondary education (see chapter 1, table 1.5), suggesting that encouraging access to post-secondary education should also be a policy priority.

Demographic Trends and Living Standards

Demographic trends in the country have a considerable effect on the country's HDI scores–especially annual per capita GDP, education, and life expectancy.

While GDP has displayed an impressive growth in recent years, Uzbekistan's population has also continued to grow, therefore continuous GDP growth has had to be "diluted" among a larger population size, and as a result per capita GDP growth is slower than the growth rate for real GDP (see table 2.4 below). While population growth has slowed down since the 1980s, the population is currently still growing at circa 1.2% a year, and the UN Population Division forecasts suggest that during 2006–2010 the population will grow by 6 per cent. The growing population of children places a significant burden on education and public health care budgets and delivery systems, as well as social infrastructure, and makes it more challenging to maintain standards of quality in basic social services.

Table 2.4.
Growth in GDP (real), GDP per capita, and population (change in % of previous year)

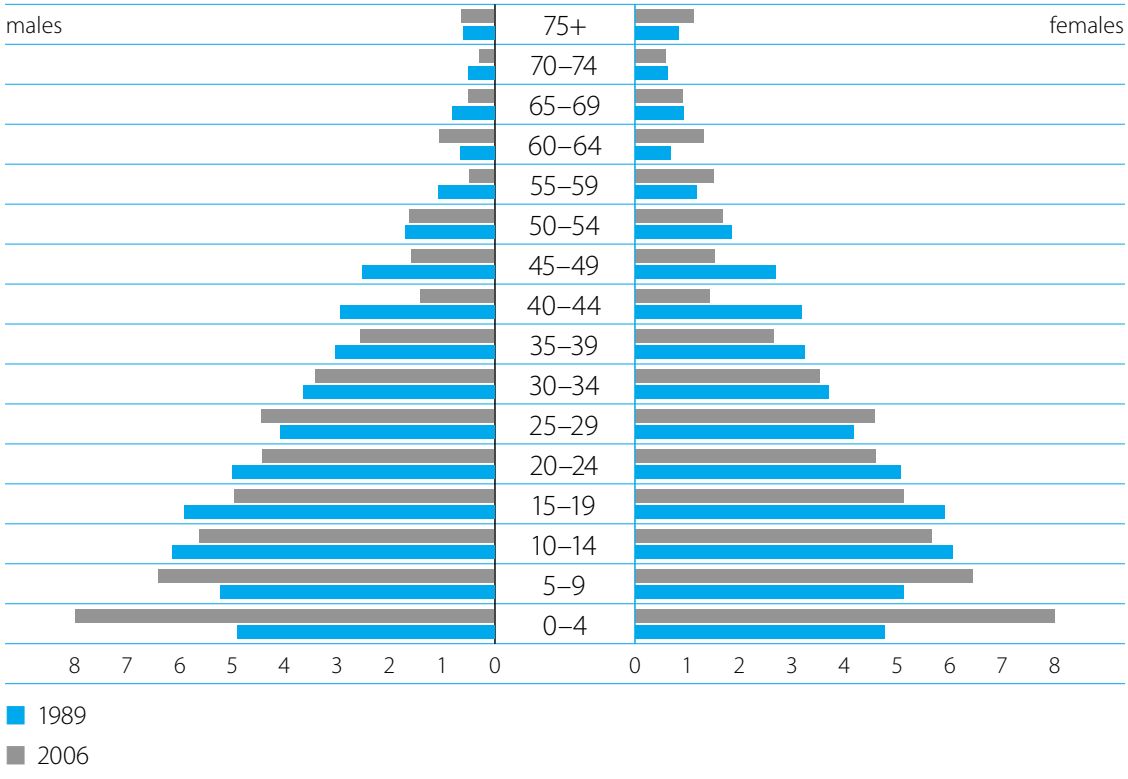
Year	Growth in real GDP	Growth in per capita GDP	Population growth
1995–1996	1.74	–0.20	1.98
1996–1997	5.20	3.28	1.93
1997–1998	4.26	2.55	1.81
1998–1999	4.33	2.81	1.53
1999–2000	3.84	2.41	1.46
2000–2001	4.16	2.86	1.33
2001–2002	3.97	2.71	1.22
2002–2003	4.23	3.03	1.24
2003–2004	7.44	6.22	1.10
2004–2005	6.95	5.72	1.22
2005–2006	7.34	6.06	1.12

Source: World Development Indicators (World Bank 2007, available on line), and TransMONEE data base (UNICEF 2007, available on line)

The age structure of the population reflects this high birth rate over the last few decades. In 2006 children aged 0–18 years represented circa 42% of the overall population. Although this proportion has been declining (in 1995 children represented 48.7% of the population), children and young people still represent a sizeable share of the population, as can be seen in the age pyramids for 1989 and 2006 below.

The implications for human development and government policy are several. Firstly, children are dependents and therefore represent an extra burden on the household budget; as stated above, families with children are particularly reliant on support from the state–in the form of welfare benefits, access to education, health services. Secondly, the number of young people entering the labour market has been and will continue to be large. To maintain household living standards, and guarantee a decent standard of living, economic growth in the short to medium term will have to be as labour-intensive as possible, in order to ensure access to productive jobs and incomes for this growing working age population. Thirdly, it is important to invest in the education and health of this growing generation in order to increase their capabilities to compete in the labour market, and meet the growing demand for skilled labour.

Figure 2.4.
Uzbekistan's population structure (age and sex) for 1989 and 2006



Box 2.2:
Factors contributing to the decline in the birth rate in Uzbekistan

- Before the transition period the average annual population growth rate was at least 2.5% with the average family having 5.5 members. Within the last 15 years these indicators have declined significantly due to the following factors:
- The demographic policy of the government has changed. The government has reversed the previous Soviet policy of encouraging, both materially and morally, couples to have many children;
- Public health policy has changed, and is now oriented towards the birth and upbringing of healthy children by increasing the number of years between the birth of each child and encouraging women to give birth between the ages of 20–30, which is considered to be the best age for pregnancy and motherhood;
- Access to contraceptives has been improved, including those provided for free. Contraceptives have been widely advertised with the aim of avoiding unwanted pregnancies;
- The majority of families have decided to limit the number of children due to the problems faced during the transition period. These problems include price rises and the greater expenses for providing for their children, as well as the reduction in free pre-school education;
- Many families have had to adapt their life style because the man (or sometimes the woman) has had to leave home and work as labour migrant abroad
- More women are taking on the role of major contributor to the family budget, or primary breadwinner, thus shifting gender roles and influencing reproductive preferences within the family
- In addition the impact of world trends in declining birth rates was also important.

Employment and Living Standards

Due to the demographic trends described above, the proportion of able-bodied, working age within the population has been growing over the last 15 years, creating considerable pressure on the labour market. Table 2.5 shows that the working age population accounted for 58 per cent of the population in 2006 compared to just under 50 per cent in 1991). In 2006 alone the working age population grew by 9 per cent.

Table 2.5. Trends in employment

Indicators	1991	2000	2001	2002	2003	2004	2005	2006
Able-bodied, working age population: Million people	10.2	12.9	13.4	13.8	14.2	14.7	15.1	15.5
As % of the total population	49.1	52.5	53.5	54.5	55.6	56.6	57.5	58.3
Employment rate, as % of the able-bodied, working age population	80.6	69.4	68.4	67.7	67.5	67.7	67.7	67.7

Source: State Statistical Committee

In addition to demographic pressure on the labour market, the transition period has also witnessed a process of shedding labour, first from industrial enterprises (former state enterprises) and more recently from the agricultural sector, due to the transformation of former collective (kolkhoz) and cooperative (shirkat) farms. As a result of these processes, employment rates have fallen from 80 per cent in 1991 to just over 68 per cent of the population in 2006 (Table 2.2).

Since 2000 the pace of economic growth has accelerated, but employment rates have shown only a weak positive trend. This can partly be explained by the character of recent economic growth, which was largely based on exports of natural resources (primary commodities), rather than a broader-based growth in private sector employment. (Exports grew by 18 per cent from 2003–2006.)

Despite the pressures of demographic trends on the labour market, unemployment rates are low, at around 4 per cent, and registered unemployment is only 0.2 per cent (WIS, chapter 3). However there is evidence that a section of the employed population is engaged in low productivity and low wage jobs, often in the informal sector. These jobs do not always secure enough income to ensure the employed and their dependents with a decent standard of living. Thus the problem for many is not unemployment, but under-employment.

In the formal sector there has been a marked decline in employment in the agricultural sector. This sector represented 42 per cent of all formal employment in 1991, compared to 28.3 per cent in 2006. This slump in formal agricultural employment has been largely due to the process of transforming the previous collective farms into cooperatives (shirkats), and more recently into private farms. Since early 2000s the process of converting shirkats into private farms has taken place and is due to finish in 2007. It has led to an increase in labour surplus in rural areas, and a rise in seasonal employment. Private farms are more productive, and employ on average 25 per cent fewer workers than shirkats with some of their workforce employed on a

formal basis. The rest is hired on a temporary or seasonal basis. It has been estimated that 460,000 workers were made redundant from the elimination of shirkats in 2004 alone. This has been happening in a period in which the working age population has been increasing by circa 250,000 annually (see WIS, chapter 2).

Table 2.6.
Employment in Uzbekistan by sector, 1991–2006 (as % of the employed)

Sectors	1991	1995	2000	2003	2004	2005	2006
Agriculture	41.9	41.2	34.4	31.9	30.7	29.1	28.1
Industry	14.3	12.9	12.7	12.8	13.0	13.2	13.4
Construction	8.2	6.4	7.5	8.0	8.2	8.3	8.4
Services, total	35.6	39.5	45.4	47.3	48.1	49.4	50.1
Out of which:							
Trade, catering, procurement	5.6	8.3	8.4	8.5	8.7	8.9	9.3
Transport and communications	4.8	4.1	4.3	4.5	4.6	4.8	4.8
Municipal and consumer services	2.3	2.5	2.8	3.0	3.0	3.1	3.2
Finances, banking, insurance, other financial services	0.3	0.5	0.6	0.5	0.5	0.5	0.5
Education, culture, science	13.6	12.5	12.8	13.1	13.3	13.6	13.7
Public health, sports, social security	5.9	5.8	6.5	6.8	7.0	7.2	7.3
Other sectors	3.1	5.8	10.0	10.9	11.0	11.3	11.3

Source: State committee on Statistics

The data in table 2.6 demonstrates the employment trends in the formal sectors of the economy. However labour market surveys conducted by the Ministry of Labour and Social Protection show that under half of all the employed work in the formal sector. In recent years the informal sector has absorbed much of the increase in supply, and now accounts for the employment of circa 56 per cent of the workforce. Over 23 per cent of those are small farmers with small land plots (dekhan households); since 2003 there has been a significant increase in those employed in seasonal and temporary jobs (mainly agriculture and construction). Therefore, the shedding of labour from the formal agriculture sector has brought about a rise in the share of low-wage temporary and seasonal employment, often within agriculture, which has had a negative effect on living standards for households in rural areas (as seen in the poverty figures reported in Table 2.2 above).

The labour oversupply has led not only to an increase in seasonal and temporary employment (increasing underemployment), but also to an increase in labor migration. It is estimated that the number of labour migrants going abroad each year has increased from 44,000 in 2001 to more than 330,000 in 2006 (WIS). Recent estimates are even higher suggesting that within one year over 500,000 (up to 5% of the labor force of the country) leave the country for short-term or seasonal work.

Labor migration has not only helped to ease some of the pressure on the labour market, it has also had a positive impact both on economic growth and income growth. It is estimated that remittances account for almost 10 per cent of GDP. (WIS chapter 2). However, a lot of the migration is informal, and labour migrants are excluded from the social protection systems in the host countries. If remittances are re-

Table 2.7.
Employment structure in the informal sector

Indicators	2001	2002	2003	2004	2005	2006
Number employed in the informal sector (thousands)	4064.5	4318.9	4657.3	5141.5	5657.6	5904.2
Share of employed population	44.5	46.3	48.6	51.8	55.5	56.4
Of whom: (%)						
Individual entrepreneurs	2.5	2.5	1.6	1.6	1.5	1.5
dekhan farmers	12.9	12.9	12.8	12.6	13.2	13.7
Unregistered entrepreneurs	17.9	19.4	27.1	30.4	33.2	33.7
Family members doing unpaid work	11.2	11.5	7.1	7.2	7.6	7.5

Source: State Statistical Committee and Ministry of Labor and Social Protection (from WIS chapter 3, table 3.14)

invested in Uzbekistan, they could also play a role in stimulating local job creation and increasing living standards.

To summarise: rates of economic growth have accelerated since 2003, but the character of this growth has not been employment intensive, and therefore the effect on improving living standards has been patchy: not all population groups, nor all regions have benefited. Underemployment and lack of income-generating opportunities is a significant problem both in rural areas, and in small towns where Soviet-era factories have closed down or are operating at reduced levels. In recent years the share of unofficial employment has remained fairly constant, while the share of unregistered informal employment has grown. The large informal sector means reduced job protection, low wage and insecure jobs for workers, but also represents a considerable loss in tax revenue for the government. The character and quality of employment is the problem. The challenge for the government is to achieve economic growth which can create productive jobs, and to create incentives for the expansion of the formal sector. This is also necessary in order to raise revenue which can be invested in public expenditure in the education and health and social infrastructure for the growing population. Further poverty reduction is dependent on the high economic growth rates, but growth which translates into productive employment, especially for the poor, and which can reduce rural-urban and sectoral disparities.

There is also evidence of further imbalances in the labour market, namely between demand for skilled workers, and an oversupply of unskilled labour. For instance, industrial enterprises lack engineers, and there is a need for educated, experienced managers for small businesses, as well as agricultural specialists (see WIS chapter 2). The newly established professional colleges as well as the system of higher education are designed to train such specialists for these sectors. However, return-to-work services and retraining assistance, continuous upgrading of worker skills and a policy of encouraging life-long learning are also needed.

The following section summarises the mix of policy measures envisaged by the government, and set out in its Welfare Improvement Strategy, in order to reduce differences in living standards by ensuring more broad based economic growth. These include measures aimed at improving the business environment and providing incentives for private sector development (e.g. ease the tax burden, optimization in tax administration, institutional strengthening to ensure protection of prop-

erty rights and limited government interference in the economy), increasing public investment in agriculture, and measures to promote private investment, access to credit lines through further reform of the banking sector and the development of microfinance. The strategy also envisages further development in the country's human capital, through public expenditure on health and education, and measures to improve the quality of the services provided in these sectors; and strengthening of social protection for families with children, the elderly and the disabled.

2.3. POLICIES TO FURTHER IMPROVE UZBEKISTAN'S HDI: INCREASING OPPORTUNITIES AND CHOICES FOR ALL CITIZENS

In order to not only improve the GDP per capita index, but also to ensure a more equitable distribution of income and a reduction in poverty, as well as decent work for all[22] , the government has been working on several policy directions to stimulate growth with job creation.

The country has continued with its export-oriented policy aimed at strengthening the balance of trade. Exports have continued to increase, not only due to favorable world market prices for raw materials, but also due to the increasing proportion of high value-added manufactured goods in the export basket. The balance of trade now stands at a 2 billion dollar surplus, mainly due to raw materials. The mining, energy and gold sectors which represent a large share of the export basket are not labour-intensive sectors, and in the future, the share of manufactured goods in the export basket will have to further increase if current economic growth rates are to remain sustainable. This in turn requires private sector development.

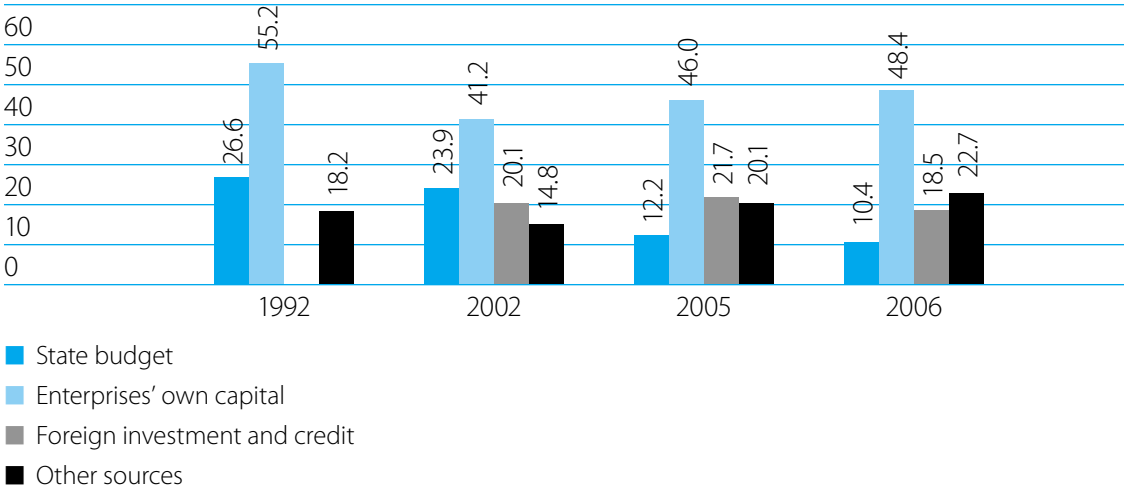
The government has already taken several measures to promote the development of private business. Regulation was eased and the intervention of state authorities in the activity of business has been significantly reduced. Much of the red tape involved in the registration and running of businesses has been cut, and there has been a reduction in the number and frequency of financial statements required by the tax authorities. Apart from improvements in tax administration, the reduction in tax rates and various charges and fines has fostered an improvement in the business and investment climate. For example, the corporate tax rate has been gradually reduced from 18 per cent in 2004 to 10 per cent in 2007. As a result of this and other measures, small businesses are showing signs of development. The contribution of small businesses to GDP has grown from 38.2% in 2005 to 42.1 per cent, and the annual growth of the small business sector has exceeded 23–25%.

It will be extremely important to continue the policy of relieving the tax burden and optimizing the rates of customs payments. This will improve the competitiveness of domestic products both in the domestic market and in foreign markets. Relieving the tax burden will also encourage private investment and contribute to the creation of a more sustainable base for high rates of economic growth.

Policies aimed at promoting private sector investment have been implemented. In 2006 the amount of capital investment from all sources of financing accounted for 4041.0 billion soums. Industrial investment accounted for 34.3% of all capital investment. The role of investment provided by sources other than the central government increased in 2005 to 77.5%. This growth was due to an increase in for-

22 The ILO promotes the right of women and men to obtain decent and productive work

Figure 2.4.
Structure of Capital Investment



eign direct investment (16.5% more than in the previous year), enterprises' own capital (14.8% more than the previous year) and loans provided by commercial banks (16.6% more than the pervious year).

However, further financial sector reforms, especially commercial banks, are needed to mobilize savings and encourage private investment. There is currently a low level of trust in the banking system, due to the fact that commercial banks carry out functions which should not be within their remit, eg tax collection and control of money supply. This does not encourage confidence of citizens in the banking system or encourage the accumulation of saving and increase in capital. Commerical Banks will gradually divest themselves of these roles. There is also a need to broaden the opportunities for accessing microfinance, through the further development of micro-financing institutions and credit unions. The legal basis for this has been provided through the 2006 laws on Microcredit Organizations and Microfinancing.

In order to encourage further private investment and private sector growth, the government plans to increase public investment, i.e. public investment will be used to stimulate private investment. The country now has quite a large current account surplus, which represents idle resources. These resources can be invested in the country's development, since the reserves are no longer needed to pay off external debt. Public investment has declined from an already low 3.8 per cent of GDP in 2003 to 2.6 per cent in 2006. As part of this process, any remaining state privileges for capital-intensive industries will be removed. This in turn should help promote a broader-based growth, which will increase demand for labour and drive up wages.

Promoting private sector development and investment will require institutional changes in order to protect private property and owners' rights. Any proprietor who observes the laws and regulations should be confident that the state will never encroach on his/her property, and that the state will not permit anyone else to do this. Growth in investment is only possible when investors are not afraid of losing their capital and when, on the contrary, they expect to earn a return on their investment.

Since most of the poor live in rural areas, there is also a need for policies which contribute to the development or rural areas. There is a need to increase the share of public investment for agriculture and rural infrastructure (irrigation, roads, land reclamation). At present there is a lot of unproductive employment in agriculture.

Productivity has to increase in this sector, which has already implied, and will imply more, shedding of labour. However, even with shedding of labour, land degradation may have reached such levels that productivity cannot be expected to rise significantly in the short to medium term. For this reason, it is urgent that new employment opportunities open up in parallel in the non-farm sector (such as light and food industry, construction materials, low-technology enterprises in the engineering sector). This requires the attraction of public and private investment.

As indicated above, the quality of land has been deteriorating, mainly due to salinity and degradation caused by overuse, but also to poor maintenance of and lack of investment in irrigation and drainage systems. The amount of irrigated land available for cultivation has been decreasing annually, while the rural population has continued to grow. Contrary to past practices, environmental considerations have to be taken into account in the further development of agriculture and also the industrial sector. Both new agricultural and non-agricultural enterprises have to operate in ways which are economically and environmentally sustainable. Rural households are far less likely to have access to piped water, central heating, and central sewage systems (see table 2.8 below). This contributes to inequalities in living standards between urban and rural citizens, and is another issue which is being tackled by public investment.

Table 2.8.
Access to Social Infrastructure/ communal services,
(Share of households with access to listed services, in working order)

	Urban population			Rural population		
	Total	Urban poor	Urban non-poor	Total	Rural poor	Rural non-poor
Piped water	84.9	71.9	86.8	24.3	22.1	25.0
Piped hot water	34.7	16.7	37.3	1.1	1.1	1.1
Piped Gas	93.4	92.4	93.6	71.8	67.0	73.4
Central heating	33.2	18.8	35.4	3.9	4.3	3.8
Central sewerage	46.0	21.5	49.6	0.3	0.2	0.4

Source: State Statistical Committee, Household Budget Survey, 2005

Improvements in the health status of the population are being achieved through reform of the system of primary health care in order to improve access to basic health services, especially in rural areas. Programmes are also being implemented to improve maternal and child care, improve nutrition levels, and prevent the spread of infectious diseases, including TB and HIV/AIDS. However the share of GDP currently allocated to health is low (2.48 per cent of GDP in 2005), and public expenditure on health will have to increase.

Crucial to all the above is further investment in country's the human capital. Uzbekistan is not behind industrially developed countries in terms of literacy levels, however, the quality of the population's knowledge is not always adequate for the building of a "knowledge economy".

At present, all over the world the most competitive economies are focused on 'building and selling knowledge'. Such products are presented on the world mar-

ket in the form of new technologies and the latest equipment. Management methods and market research, along with the methods and techniques for knowledge dissemination, are in great demand and very expensive. Building and selling knowledge require very little in the way of material resources. Transportation costs to deliver the ready products to consumers are extremely low. The final cost of this knowledge, however, is extremely high. As a result, producers enjoy huge advantages over those who are oriented towards just material production.

However, to focus the economy on 'building and selling knowledge', it is necessary to have highly skilled people who are capable of producing this knowledge. It requires a significant increase in the numbers of well-educated people, especially those with an advanced engineering education. The quality of education should be such that it will help experts not only master new technologies and improve them, but also to anticipate new trends and design things currently not even imagined. Moreover, there is a need for the effective integration of industrial and scientific work with research and design activities.

The government's current focus on achieving 12 year school education, including vocational education for all, will help improve the quality of labour resources in the country. The government is also encouraging closer links between enterprises and public educational institutions in order to provide relevant vocational training and promote research. Promoting innovation is one of the factors behind the development of the 'knowledge based economy'. The experience of developed economies provides examples of how government-supported programs can foster innovation in large and small businesses. Government policy in this area needs to be backed up with the establishment of institutions that can effectively implement the various policy measures aimed at promoting innovation and a knowledge-based economy.

CHAPTER 3

OVERVIEW OF THE EDUCATION SYSTEM IN UZBEKISTAN

'The state policy in the sphere of personnel training envisages the formation of a well-educated individual and citizen through a system of continuous education, closely related with the intellectual and spiritual upbringing of a person'[23]

Islam Karimov

3.1. LEGAL FRAMEWORK OF THE NATIONAL EDUCATION POLICY

3.1.1. The pre-reform system of education in Uzbekistan had both strengths and weaknesses. On the one hand, it could boast a number of significant achievements:

- All stages of education existed in the country: pre-school, primary, secondary, primary vocational, higher, two-levels of postgraduate, personnel training and upgrading of personnel skills;
- All citizens of the republic had access to all types of education, irrespective of their gender, ethnicity, and religion. Secondary education was general and compulsory and education at all levels was free of charge;
- The level of literacy of the able-bodied, working age population was high.

On the other hand, the legal framework of education system had all the shortcomings typical of a centralized economy:

- Curricula, textbooks, teaching methods and methodology were tightly regulated by the centre. Educational establishments and teachers were not permitted to teach using textbooks, teaching materials and curricula not previously approved by the Ministry of Education;
- Education was focused on the average child with average knowledge and abilities, there was little teaching catering to individual needs, particularly for talented children;
- Undemocratic and 'ideology-based' education did not teach schoolchildren to think independently. Pupils and students had imposed upon them ideological dogmas set by the state. Alternative methods and ideologies were not accepted;
- Due to the lack of continuity between general and professional curricula, graduates of secondary general schools did not have a relevant professional orientation and the specific skills required by the workplace. Young people encountered serious difficulties when choosing a profession which catered for their abilities and preferences along with their creative and career aspirations.

23 I. Karimov. A harmoniously developed generation is the basis of progress in Uzbekistan. p. 43.

3.1.2. Stages of reform and legal framework of Uzbekistan's education policy.

After Uzbekistan gained its independence in September 1991, it was able to develop its own legal framework for a national education policy. The country embarked on a radical transformation of the old system. New reforms sought to improve the structure and content of education.

This transformation process can be divided into four major stages:

1) **(1991–1997)—preparatory,** when the major problems and contradictions of the education system were identified and analyzed along with the disconnect with the economic and political transformations taking place in society;
2) **(1997–2001)—initial stage,** when the new national policy of personnel training was formed.
3) **(2001–2005) active stage of large-scale** transformations of secondary special vocational education.
4) **(after 2005) perfection and development of the school education system.**

In accordance with the Constitution of the Republic of Uzbekistan all citizens of the country are entitled to receive education. The state guarantees everyone a free general education and school education is under the supervision of the state.

During the preparatory stage the envisaged reforms could not be launched immediately after independence for a number of reasons:

firstly, at this stage the understanding of what kind of economic and political reform was required in a new society had not yet been formed, and it was this understanding that would need to be reflected in the changes made to the education system;

secondly, some time was required to identify the contradictions and problems of the existing education system and to study the best international education models with the aim of forming the national idea and model of education;

thirdly, due to the deep economic recession during the period prior to 1996, the country did not have sufficient financial funds to reform the education system.

Some attempts to partly reform the education system were undertaken in 1992, i.e. at the preparatory stage, when a new law 'On Education' was adopted in Uzbekistan. This law established the legal guarantee of free and compulsory general secondary school education, as well as the opportunity to get education both at state and at private educational establishments. Also, the law provided the opportunity to get education in the form of distance study or external education. Higher educational establishments were allowed to choose their own curricula, textbooks and methods of teaching.

The law also sought to introduce national standards in education. Educational establishments started to use new curricula, study plans, textbooks and teaching materials. The system of governance was partly reorganized and some new educational establishments were created at each educational level. Taking into consideration the specific features of the labour market in different regions of the republic, mainly in rural areas, new vocational schools, vocational lyceums and business schools were established.

In higher education a decentralization and regionalization of personnel development was introduced. Enrolment to higher educational establishments in Tashkent was reduced, while enrolment to higher educational establishments in other regions

was expanded. New universities were created specializing in new spheres of personnel training, such as the University of World Economy and Diplomacy and the Islamic University. The transition of higher education to a two-tier system began.

Unfortunately, the law 'On Education' of 1992 continued without any change some norms from its predecessor, the law 'On Education' adopted in the Soviet Union. In part, the regulation about 9-year compulsory and two-year voluntary general secondary education was duplicated. This approach affected the quality of education in secondary schools. Moreover, many graduates of the 9th form of schools, who did not continue their studies, were not provided for. Their lack of a professional qualification and the age requirement that forbade children working before the age of 16[24] undermined the possibility of starting their working life.

As a result about 10% of the population aged 15–16 were thrown out onto the street without any guarantee of employment. This created some serious problems on the labour market, which the young people joined, often illegally. They were not yet ready for a working life, not only because of their lack of professional skills but also in terms of maturity. In the years up to 1997 about 103,000 school leavers (having completed just nine years of secondary education and so without any professional training) or 21.5% of the total number (compared to 5.4% in 1991) joined the labour market.

This increased number of young people who failed to find a job after school was a threat to social stability. Such teenagers lay behind the growth in juvenile crime and the spread of drug addiction.

During this period the shortage of financial resources also created some serious problems. Many qualified professionals left the education system, the quality of education fell along with attendance levels.

During the ninth session of the Oliy Majlis the President of the Republic of Uzbekistan, Islam Karimov, presented a critical analysis of the education system and set the priorities for radical reform in this sphere.

Firstly, it was noted that the content of education 'had not been fully freed from the ideological dogmas of the Soviet period'[25]. This problem was especially acute in the teaching of the social sciences and humanities, the arts and also the content and organization of educational and moral development.

Practical measures undertaken with the aim of reforming the system of education in accordance with the Law "On Education" of 1992 'did not ensure compatibility between the content and … organization of the system of continuous education". The need for some subjects at different stages of general secondary education had not been deeply studied and fully justified. Some basic principles of continuity of content had been violated and the specific requirements of various age groups had not been considered. In addition, it was debatable whether it was appropriate to have extended the number of years of general secondary schooling from 10 to 11.

A significant drawback of the pre-reform system of general secondary education was the unnecessary number of compulsory subjects—twenty in total. Some subjects obviously were not now appropriate given the democratic and market changes taking place. Curricula paid insufficient attention to those subjects which taught the basics of ethics and morality, providing for social, economic and legal knowledge. Teaching foreign languages also did not meet modern requirements.

24 Graduates of the 9th form were aged 15–16.

25 I. Karimov. A harmoniously developed generation is the basis for progress of Uzbekistan. Tashkent, Uzbekistan, 1997, p. 17

One of the major shortcomings of the former system of general secondary education was the poor preparation of the new generation for independent social and work roles. Without any professional skills or general work and life skills, school graduates (including those with an 11 year education) had difficulties in finding a job that matched their abilities, desires and preferences. This shortcoming was, in fact, built into the 11 year system of general secondary education. It neither trained schoolchildren for independent labor activity, nor adapted to the conditions of a market economy. Also, there were some drawbacks in the organizational structure of general secondary education and the system of continuous education.

The continuity of educational and vocational curricula, disrupted at the level of general secondary education, created problems at the following stage—in the system of primary vocational and technical, and secondary special education. The low professional level of teachers did not ensure an appropriate quality of teaching and education. Schoolchildren received poor knowledge and only a narrow specialization. These educational establishments and the qualifications of the graduates were not sufficiently up to date.

These serious contradictions, which appeared in the system of education during 1991–1996, necessitated **the second stage of reforms—the initial stage related to personnel training.** The government of Uzbekistan was the first post-Soviet country to make a decision on the radical transformation of the education system. In 1997 the President of the Republic of Uzbekistan initiated and supervised the National Program of Personnel Training, which was adopted as a Law. The basic components of the Program were the following:

- Creation of a system ensuring life-long learning: starting from pre-school age up to retirement age;
- Compulsory and free general 9-year education;
- Introduction of a new system of 3 year free general compulsory secondary special vocational education for graduates of 9th forms of general schools;
- Introduction of a two-tier system of higher education, divided into Bachelor's degree and Master's degree programs;
- Preservation of the two-tier system of postgraduate education, including the postgraduate 'candidate' course and doctoral study;
- Declaration of the necessity of a continuous education system, professional training and raising the level of personnel skills.

The National Program of Personnel Training introduced a new stage, three-year free compulsory secondary special vocational education. This stage connected the general secondary education with the professional training of young people. In doing so the government bridged the gap between the knowledge received at school and the lack of practical skills and experience necessary in the workplace. The reform envisaged two types of secondary special vocational educational establishments:

Vocational colleges, which taught general subjects and provided professional skills and knowledge for a chosen profession;

Academic lyceums, which provided an in-depth knowledge of both academic and practical subjects.

At the initial stage of implementing the National Program of Personnel Training much work was done in establishing the legal framework. Some regulatory acts were adopted to determine the general principles of education at all stages,

Scheme 3.1.
Reform of the education system

<table>
<tr><td>Educational stages</td><td colspan="2">Pre-reform period</td><td colspan="2">During the period of National Program of Personnel Training implementation</td></tr>
<tr><td rowspan="3">School education</td><td colspan="2">11 grade general secondary education</td><td colspan="2">Compulsory secondary education</td></tr>
<tr><td colspan="2">10–11 grade secondary education</td><td colspan="2">Primary (compulsory 1–4 grades)</td></tr>
<tr><td>Primary (compulsory—1–4 forms)</td><td>Базовое обязательное (5–9 классы)</td><td colspan="2">Compulsory secondary—5–9 grades)</td></tr>
<tr><td rowspan="3">Secondary special, vocational education</td><td>System of vocational education</td><td>System of secondary special education (technical schools, specialized schools)</td><td colspan="2">System of compulsory secondary, vocational education</td></tr>
<tr><td>1) Vocational technical schools based on 9th grade (term of study 1–1.5 years—workers) without a certificate of secondary education, schoolchildren join the labour market or enter a technical vocational school, providing a certificate of secondary education, or enter a technical school based on a 9-year education.</td><td>Technical schools and their branches based on school and secondary vocational technical school leavers from the 9th and 11th grades</td><td>Academic lyceums</td><td>Vocational colleges</td></tr>
<tr><td>2) Secondary vocational technical schools based on 9 forms (term of study—3 years—workers)—certificate of secondary education, after finishing graduates join labour market or enter a technical vocational school or higher institute.</td><td>Term of study 3–4 years—professionals of the middle level, after finishing graduates join the labour market or can enter a higher institute.</td><td colspan="2">Term of study 3 years after general secondary school (9 years)—junior specialist</td></tr>
<tr><td>Higher education</td><td colspan="2">Universities (4–5 years)—specialist with higher education</td><td colspan="2">Universities: Bachelor's degree—not less than 4 years, Master's degree—not less than 2 years</td></tr>
</table>

from pre-school to postgraduate education. Specific principles for the functioning of secondary special vocational educational establishments were legally approved as well as programs for developing the infrastructure and facilities, as well as preparation of textbooks and teaching materials. As such the practical implementation of the Program had begun.

Now graduates of academic lyceums and vocational colleges have an opportunity to acquire deep professional knowledge and skills. Along with general subjects they get in-depth knowledge related to their future profession and can test their abilities in their chosen research area. According to the reforms these general and vocational courses, closely related to the general sec-

Scheme 3.2.
General direction and measures aimed at creating and developing the national model of continuous education

Initial stage—beginning of reforms in 1997

Reform of the education system, ensuring its development as a single educational and production complex based on state-owned and private educational establishments thus introducing competition.

Adjustment of the system of education to the on-going transformation in society, namely the creation of a developed democratic state.

Provision of an educational system with highly qualified teachers and engineers engaged in teaching, upgrading the status of pedagogical activity.

Reorganization of the structure and content of continuous education in light of the social and economic development of the country, the needs of society, and the latest achievements of science, culture, engineering and technology.

Introduction of effective forms and methods of the moral evelopment of students.

Introduction of a new system to fairly assess the quality of education, certification and accreditation of educational establishments.

Creation of a regulatory framework and also physical facilities to ensure the required level and quality of education, guarantees for functioning and sustainable development, raising the priority of the education system in the new social and economic conditions.

Ensuring the effective integration of education, science and production;

Introduction of effective mechanisms with the aim of improving the financing of the educational system, attract private funding, including foreign investment.

Development of mutually beneficial international cooperation in the area of education.

→

Achievement of the target—creation of a perfect system of continuous education based on the rich legacy of the nation's and international values, achievements of modern culture, economics, science, engineering and technology, formation of a perfect generation.

Stages of reforming the continuous education system

First stage (1997–2001)—creation of the legal, personnel, scientific, methodological, financial and material conditions with the aim of reforming and developing the system of continuous education while preserving the existing positives

→

Second stage (2001–2005)—large-scale implementation of the National Program, its adjustment, taking into consideration both accumulated experience in labor market development and real social and economic conditions.

→

Third stage (2005 onwards)—improvement and further development of the system of continuous education based on analysis and generalization of the accumulated experience, in accordance with the prospects of social and economic development of the country.

Structural transformation and radical renovation of educational content.

Training and upgrading the qualifications of teachers and engineers teaching at educational establishments to meet modern requirements.

Creation and introduction of national educational standards.

Elaboration and introduction of a new generation of textbooks, teaching materials, didactic and IT provision of the education process.

Creation of the relevant material infrastructure and facilities, academic, methodological and personnel base for secondary special vocational education.

Improvement of the system and mechanisms for education financing, creation of a competitive environment in educational service provision.

Introduction of a rating system to assess the performance of educational establishments, as well as the achievements of students.

→

Complete transition to compulsory general secondary and secondary vocational education, based on national standards, as well as differentiated teaching, taking into consideration the abilities of students.

Staffing educational establishmnets with highly qualified teachers.

Continued improvement of the facilities of educational establishments, provision of quality textbooks, advanced teaching and information technologies. Efficient use of all mechanisms to form a market for educational services.

→

Further strengthening of resources, personnel and the information resources of educational institutions, sufficient provision of the newest textbooks, advanced teaching and information technologies.

Improvement of the content and organization of continuous education taking into consideration the changing needs of society, the social and economic development of the country and world experience.

ondary, secondary special and vocational education, were to prepare graduates for life, active participation in the labour market, and also create a market for educational services.

This compulsory 12-year education system entailed a choice for 9th grade graduates to choose between studying at academic lyceums or vocational colleges in accordance with their abilities. Since the general curricula of lyceums and colleges are equivalent, all graduates have the right to continue their education on to the next stage.

Thus, the new system of education has been brought forth to form a well educated individual able to think independently, having high spiritual and moral qualities, well-bred and professional.

Box 3.1.
Evaluation of education reforms undertaken in Uzbekistan

"…The development of the National Program of Personnel Training is an absolutely scientific and innovative approach and solution to the problem. The experience of Uzbekistan in implementing this national model of personnel training will become the "know-how" of the President of the Republic of Uzbekistan. This can be called an export, which can be used in countries with similar social, economic and demographic conditions, as well as similar cultural and historical traditions and customs"

V. A. Shukshunov, President of the International Academy of Sciences of High Schools

Source: "New era—time to study in a new way", "Pravda Vostoka" daily newspaper. May, 29, 2007

Also much has been done in schools to improve textbook provision, as well as in transferring teaching from the Cyrillic alphabet to Latin.

A two-tier system of university education was introduced at this stage, including master's degree and bachelor's degree courses and students being selected on the basis of tests. A large program called 'Umid' (Hope) was introduced, according to which the best students were selected and given grants to get Master's and Bachelor's degrees at overseas universities. The system of university financing was changed with some students starting to study on a fee basis.

During the third stage, based on the experience already gained in implementing the National Program of Personnel Training, the curricula and study plans of vocational colleges and academic lyceums were improved and program indicators were adjusted.

The system of higher education started to recruit not only on a grant (scholarship) basis but also on a contract or fee paying basis, with an increasing proportion of students studying on a fee basis.

The fourth stage of reform was focused on radical changes carried out in the system of school education. In 2006 a new program of school education development was adopted, which envisaged:

Improvement in the curricula and study plans of school education, creation of new textbooks and teaching materials;

Increasing teacher's wages and introducing a special director's fund to create financial incentives to assist in motivating the teachers of general schools;

Upgrading of school facilities, construction of new schools, capital renovation, repair of schools, and provision of new facilities and equipment, including the wide-scale creation of computer labs;

Development of sports, including at general schools.

To help achieve these school reforms, a special School Education Fund was established along with the Children's Sports Fund.

This stage of reform is to be completed in 2009, when the objectives focused at reforming the system of school education and secondary special vocational education will be fully achieved.

3.1.3. Governance of the Education System

System of continuous education. As a result of the reforms the system of continuous education consists of the following institutions providing educational services:

- Pre-school education (for ages 3–7)—by kindergartens, both public and private;
- General secondary education (for ages 7–15)—mainly by state schools, providing free services, as well as by a small number of private schools, providing services on a fee basis;
- Secondary special, vocational education (for ages 16–18)—by state vocational colleges and academic lyceums, providing free services;
- Higher education (after graduation from a secondary special vocational educational establishment)—by universities and institutes;
- postgraduate education—at universities, institutes, academies providing education (Banking and Finance, Tax, Public Administration), business schools under universities and academies;
- extracurricular education (while studying at school)—independently and at school;

Table 3.1
Dynamics of enrolment in educational establishments in the Republic of Uzbekistan during the period of implementing the National Program of Personnel Training (per 10,000 people)

Education stages	People								Growth rates		
	1998	2000	2001	2002	2003	2004	2005	2006	2000, as % of 1998	2006, as % of 2000	2006, as % of 1998
Total											
Including:											
General schools	2347	2424	2410	2480	2427	2355	2257	2135	103.3	88.1	91.0
System of secondary vocational education	105	130	177	214	265	302	337	402	123.7	308.8	381.8
System of higher education	65	74	82	91	99	101	106	107	112.5	145.2	163.4
System of postgraduate education	1.8	1.6	1.5	1.3	1.1	0.9	0.9	0.9	91.2	56.1	51.2

Source: State Committee on Statistics

- raising the level of professional skills and personnel training (during the whole career)—at universities, institutions, specialized institutions for upgrading professional skills, and business schools;
- home-based education and self-study.

Governance. The system of education is governed by the Department operating under the Cabinet of Ministers. This Department is responsible for the development of the overall social sector, including the implementation of reforms in the system of education. The Cabinet of Ministers bears direct responsibility for the governance of some higher educational establishments such as the University of World Economy and Diplomacy, Islamic University, as well as branches of recognized overseas universities (Moscow State University, Westminster University).

At the same time, some functions related to the administrative management of the education system are performed by central economic agencies such as the Ministry of Finance (system of financing), Ministry of Economy (program of facilities development, demographic forecasts, forecast and programs for enrolment to educational establishments, including fee paying and others).

Two ministries, the Ministry of Public Education and the Ministry of Higher and Secon dary Special Education, are responsible for the governance of educational establishments.

The Ministry of Public Education is responsible for the activity of pre-school, extracurricular educational establishments and general education schools. In addition, five higher educational establishments and 16 institutions providing upgrading courses for teachers are also under the jurisdiction of this Ministry. The Ministry has a central office as well as regional, district and city branches of public education, which provide methodological supervision over the activity of these educational establishments. Prior to 2007 these agencies provided the financing of these educational establishments. Since 2007 this financing function has been fully transferred to the corresponding branches of the Ministry of Finance.

The Ministry of Higher Education bears responsibility for the activity of educational establishments providing secondary special vocational and higher education. A special Centre with local branches has been established with the aim of controlling the activity of these educational establishments.

The Ministry of Labour and Social Security is responsible for some programs aimed at professional training and raising the level of employees' professional skills.

In most countries only one ministry is responsible for education, mainly focusing on school education. Secondary special and higher educational establishments are mainly self-governed. The existence of two ministries responsible for education is necessitated at this stage because:

- of the share of children of pre-school and school age as a proportion of the whole population (31.5%). It is necessary to govern a large number of general schools (about 10,000) in which up to 6 million schoolchildren are enrolled, and kindergartens (over 6,000) catering for 562,200 children. Over half a million teachers and educators are employed;
- the reforms in the system of school and secondary special professional education have not been completed. These reforms entail a huge amount of management, intellectual and human effort;
- the self-governance of universities is restricted by the necessity of upgrading the quality of education.

3.2. OVERVIEW OF THE MAJOR TYPES OF EDUCATION IN UZBEKISTAN

3.2.1. Pre-school education.

Pre-school education is the first stage of the continuous education system. It ensures the formation of healthy, developed children, arouses their inclination to learning, preparing them for systematic study. Pre-school education is provided to children until they are aged 6–7 at state or private pre-school educational establishments, and also within the family.

The objective of pre-school education is to prepare children for school studies, to form healthy, developed and free children, reveal their abilities, to develop an interest in education, including systematic learning.

Pre-school education, irrespective of its forms and ways to get it, solves the following tasks:

- Targeted and systematic preparation of children for school studies, development of their individual abilities and gifts;
- Informing children about the moral and cultural values of their nation as well as of the whole humankind; intellectual development of children;
- Formation of a foundation of high spirituality and morality;
- Strengthening the physical and psychological health of children.

Public and charity agencies, mahallas and international funds also participate in the achievement of these objectives and the implementation of these tasks of pre-school education.

Pre-school educational establishments. State and private educational establishments are to assist parents and society in bringing up physically healthy, fully developed children, ready to study at schools.

Pre-school educational establishments are created taking into account the demographic, economic and other specific features of different regions. Pre-school education in Uzbekistan is provided in the state language (Uzbek), as well as in the languages of ethnic groups where there is a concentration of that population: Karakalpak, Russian, Tajik, Kyrgyz and Kazakh.

Pre-school educational establishments are divided into the following types according to their specific activity:

- nursery, nursery-kindergarten, kindergarten, home-kindergarten (both as an independent institution and as a branch);
- institution of pre-school instruction and primary education (kindergarten-school);
- pre-school educational establishment with one or several specializations (language, art, sports and others);
- specialized kindergarten catering for special needs children—those with problems of physical and psychological development;
- rehabilitation kindergarten for children with poor health, providing medical and other preventative treatment;
- kindergarten combining the characteristics of more than one type—with several specific directions (general, special needs and rehabilitation types in different combinations);
- Children's homes.

The working hours of pre-school educational establishments and the length of time that children stay at them are determined by national requirements, by individual char-

ters, and based on the agreement between the educational establishment and the parents, as well as the founders (owners).

There are specialized educational establishments for children with health problems. Children are enrolled to these institutions on the basis of a medical certificate of a psychological, medical and pedagogical commission, established by the local education and healthcare authorities. The task of providing continuity of pre-school, school and general secondary education is still an ongoing one. With this in mind there have been established 205 educational complexes known as "kindergarten-schools".

Non-traditional forms of pre-school education such as home-based and small kindergartens, various centres for early instruction of children of pre-schooling age, and Sunday schools are being developed. The number of groups in non-traditional pre-school establishments totalled 13,744, in which over 123,600 children are being instructed.

The content of the educational and instruction process in pre-school educational establishments, irrespective of their ownership form, is determined by the Basic National Program. Pre-school educational institutions have an option either to choose for their activity any curriculum from the set of curricula approved by the Ministry of Public Education, or to elaborate their own curricula based on the model one which should then be approved by the Ministry of Public Education.

Access to pre-school education. There are 6,413 state-owned pre-school educational establishments in Uzbekistan, with the total number of children aged 1½—7 covered by them being over 562,200. Within the last few years the number of children enrolled in such establishments has increased (by 2.8% in 2005) up from 16.2 in 1999 to 19.0% of the total number of children in 2005.

Table 3. 2
Trends in pre-school educational establishments in Uzbekistan (1997–2006)

	1997	2000	2001	2004	2005	2006
Total						
Number of establishments	7,546	6,704	6,865	6,603	6,495	6,413
Number of children covered (thousand)	681.2	624.6	642.5	575.1	565.6	562.2
Non state-owned pre-school establishments						
Number of establishment	2,405	588	407	85	72	57
Number of children (thousand)	143.7	31.6	22.5	4.0	3.5	3.0
Out of them private:						
Number of establishments	-	1	1	7	15	12
Number of children (thousand)	-	-	-	0.1	0.3	0.2
Percentage of children at pre-school establishments as % of children of respective age	17.6	18.2	19.4	19.3	19.0	18.8

Source: State Committee on Statistics

The number of pre-school educational establishments and the number of children enrolled sharply declined after 1991.[26] The main reasons were:

26 In 1991, 9,834 preschool establishments enrolled 1,339,500 children, including 14,500 children at the age of 1.5 to 3 years enrolled at 173 pre-schools. The coverage of this pre-schooling network was 35.1%.

- Changed national policy towards family (home) upbringing of pre-school age children and instruction at pre-school educational establishments. The sharp reduction in the number of children aged up to 3 at nurseries of Uzbekistan was caused by a high sickness rate and wide-spread infectious diseases among children of an early age. With the aim of organizing home-based upbringing of small children, mothers were given partly paid maternity leave to take care of children until they are 2 years old. After this mothers can continue bringing up the child at home until he/she is aged 3, having the guarantee of a preserved job;
- Reductions in state subsidies provided to support children at pre-school educational establishments and therefore increased fees paid by the parents. Families having several children of pre-school age faced financial difficulties in trying to pay for services provided by many pre-school establishments. For example, according to a survey conducted by the Ministry of Public Education in six regions of the country, 86.4% of the population is interested in pre-school education. However, due to financial and other reasons 74.4% of the population cannot afford the services provided by the pre-schooling network. Enrolment is especially low in the regions of Kashkadarya (11.7%), Surkhandarya (12.4%) and Khorezm (16.1%);
- Altered demographic situation with a significant reduction of the birth rate, as a result of which the demand for the services of pre-school educational establishments dramatically declined;
- Reduction in jobs, and as a result a growth in the number of women unable to find work. These women then stayed at home and took care of their preschool age children;
- Concerns amongst parents about the falling quality of pre-schooling. The level of provision of developmental toys is only 53%. There is also a lack of modern children's and methodological literature, manuals for classes, and technical teaching aids. Public funds are not allocated for the purchase of stationary which restricts the ability of classes to do modelling, painting, and designing. The implementation of a model program for the preschool network 'Child of the third millennium' is supported neither materially, nor technologically, nor methodically. Levels of provision of sports equipment stand at just 41%, sports areas at just 78% and only 20.4% pre-schools have gyms. There is absolutely no modern sports equipment for pre-school aged children. All the equipment used for sports classes is home-made by the instructors;
- The insufficiency of financial resources allocated to pre-schools especially in rural areas. For example, in the 2006 financial year the real amount of funds allocated per child to preschool establishments averaged less than 723 soum per day. This figure ranges in different regions from 376 to 741 soum in nursery groups, and from 550 to 1214 in kindergarten groups. Due to the difference in costs of food per child in different regions, the quality of food also differs significantly. In 2006, due to the lack of funds, pre-schools bought only 83.5% of the planned meat, 72.2% of butter, 65.6% of sugar, and 76% of potato and other vegetables. As a result, children did not get sufficient amounts of dairy products, fruit, and as for fish they do not get it at all. These factors affect the physical and psychological health of children of pre-school age, and threaten the implementation of the national education standards.

The need for pre-school education is partly met by special preparation programs organized at pre-schools in the form of part-time groups. Currently there are over 30,000 such groups in the country, where children study for 3–4 hours a day to receive the knowledge and skills necessary for school. Within the framework of a UNICEF project some special methodological manuals have been elaborated aimed at providing such educational services.

Also, non-traditional forms of pre-school education are being developed, such as home-based and small kindergartens, various centres for the early development of children at pre-school age, and Sunday schools. The number of non-traditional pre-schools totalled 13,744, in which 123,600 children are trained.

Measures to upgrade the quality of pre-schooling. The educational content in pre-school educational establishments, irrespective of their form, is determined by the Basic national program. Pre-school educational establishments can either choose any curriculum from a set of curricula approved by the Ministry of Public Education, or elaborate their own copyrighted curriculum on the basis of the Basic national program, which should be approved by the Ministry of Public Education.

The National Program of Personnel Training envisages a number of measures to increase the quality of education at pre-schools:

Firstly, priority training of qualified professionals, both teachers and instructors. It is important that pre-school children be instructed by the best teachers, motivated in their work, and whole-heartedly caring for the children.

Effective pedagogical methods are gradually being introduced into the education and instruction process, ensuring the development of children's abilities, skills and interests, and meeting their growing needs. Pre-schools lay the foundations for the spiritual and moral upbringing of pre-school aged children based on the rich cultural, historical and spiritual heritage of the nation and values common to the whole of humankind. It is planned to elaborate and produce modern teaching aids, technical devices, toys and games for children.

Some manuals and recommendations have been prepared for preschool instructors and parents. Local authorities provide some incentives for pre-schools within the legal framework. In addition, they take care of the production and procurement of goods for children and pre-schools located in their regions.

Departments, enterprises, organizations, various funds and other participants of the educational process can be founders of pre-school educational establishments, providing material, technical or financial aid, and organizing the production of some goods required for children at pre-school age and for the pre-school network.

In accordance with Resolution of the Cabinet of Ministers of the Republic of Uzbekistan of June 24, 1999 #313 "On measures aimed at creating and developing the private pre-school educational network" there are now ways of widening the network of private pre-schools operating on a commercial basis and ensuring a high quality of service. In 2006 the number of private kindergartens was 12.

Pre-school education provided at home. In the Republic of Uzbekistan family upbringing is considered to be a necessary element of pre-school education, alongside education provided by state-owned establishments[27]. Government and

27 In accordance with the article 31 of the Law "On Education" parents (or those performing their functions) are to protect the rights and interests of children, and are responsible to society and the nation for their upbringing, irrespective of the ways of getting quality pre-school education and preparation for systematic learning at school. According to article 34 parents can be called to account for the violation of this Law.

society seek to provide the necessary organizational and methodological support to families.

It is well-known that the family is the main contributor to the socialization of a child. In the family such values as respect for parents, for one's own home, and for the motherland are formed. In the family children get acquainted with their culture, national traditions and moral values for the first time. The development of thinking, independence and responsibility for ones actions are rooted in the family upbringing. According to the laws of Uzbekistan parents (or whoever performs their function) are to provide for the overall protection and harmonious development of children. It is the family that creates the conditions for the emotional well-being of children and the family bears primary responsibility for their preparation for school.

Pre-school education in the family can be provided either on an independent basis, or children can occasionally attend one or several state-owned pre-school (extra-curricula) educational establishments.

With the aim of supporting families the government and society organize centres to provide professional medical, psychological and pedagogical advice. Issues of pre-school education are discussed in periodicals, radio and TV programs. Special pedagogical literature is available in sufficient copies.

Local authorities use various ways and means to encourage families to provide the highest level of preparation for school studies. Parents can receive quality consultations on all issues of pre-school education. Children aged 1–7 receiving pre-school education in families or at pre-schools are eligible for annual medical examinations.

3.2.2. General Secondary Education

The 9 year general secondary education in Uzbekistan is compulsory and free. It is divided into primary (1–4 grades) and secondary (5–9 grades) education. Education at the 10th and 11th grades has gradually been shifted to secondary special vocational educational establishments. It will sharply decline in general schools during the 2007/2008 academic year and completely stop after 2009.

Table 3.3
Trends at general schools, by education stages*

School year	2004/2005	2005/2006	2006/2007
Number of pupils (thousand)	6111.1	5928.7	5687.9
Including:			
Pupils of 1–4 grades	2383.3	2277.2	2164.8
Pupils of 5–9 grades	3143.2	3146.4	3106.0
Pupils of 10–11 grades	584.6	505.1	417.1

Note: * pupils with restricted mental and physical abilities are not included
Source: State Committee on Statistics

The aim of general secondary education is as follows:

- Formation of knowledge and skills in accordance with the national education standards;
- Adaptation of children to society and development of independent thinking;

- Formation of a harmoniously developed personality, citizen of his/her motherland;
- Instilling a feeling of devotion to the principles of independence and democracy.

Primary education in Uzbekistan is compulsory, free and general. It means that all children of school age attend general or specialized (for special needs children—both physical and mental) primary school. The primary education covers 100% of children of the respective age group.

After primary schooling children should have reading, writing and calculating skills. Pupils are introduced to such things as theoretical thinking and the skills of self-control. They acquire knowledge in standards of speech, basics of personal hygienic, healthy life-style and behaviour in society. The quality and content of subjects at primary school are flexible in respect to different types of schools and learning conditions.

At primary schools the differentiation of teaching and educational activity according to the abilities of children is achieved in the following ways:

- Options within the educational process;
- Rates of learning;
- Opportunity to choose in-depth study of some subjects;
- Adaptation of study assignments to the individual abilities of children;
- Organization of levelling classes and groups.

All first-form pupils are provided with the necessary new textbooks and stationary free of charge. Since 1996 pupils of the 1–9 grades from needy families are annually provided with sets of school equipment and winter clothes free of charge, all costs being covered from the government budget.

Primary and secondary education in Uzbekistan are closely interrelated in terms of both organization and content. Each general school provides teaching at both stages of the general secondary education. This enables full monitoring of the number of graduates of primary schools and also continuity in the system of general secondary education.

General secondary education is the logical continuation of primary education, though it has a different content and incorporates different methods of teaching. Secondary education ensures the formation of the pupils' personality, their preferences, interests and ability to make choices in society. Secondary school pupils have a systematic knowledge in the basics of the sciences. During their studies they become broad-minded and develop abilities in creative thinking. Through sharing knowledge on the spiritual and cultural heritage of the nation, teachers inculcate a responsible attitude towards the surrounding world. Secondary school provides schoolchildren with more opportunities for independent study. The structure of secondary education content includes both compulsory and optional subjects.

The compulsory component is determined by the national educational standards which sets the minimum requirement for each educational level. This is guaranteed by the general secondary educational establishments. This component is set taking into account the needs of society as well as the interests and needs of the individual.

The optional component is determined on the basis of the pupil's needs and abilities, available facilities, staffing, and the requirements of social and economic development of the particular area where the school is located. The volume of this additional study load is determined by norms fixed by the Ministry of Public Education.

Teaching and the general education activity of schools is based on the Basic study plan and education curricula of general secondary education approved by the Ministry of Public Education.

The list of subjects, educational curricula, and length of study time are determined by the national education standards of general secondary education as well as by the Basic study plan.

General secondary education is provided on a full-time basis. At the end of the studies graduates receive state certificates and those who have the best results receive certificates with excellence.

Schoolchildren can take part in external studies which is certified on the basis of the Regulation on external studies, approved by the Ministry of Public Education.

Accessibility of school education, its infrastructure and facilities. The accessibility of school education is ensured not only by the fact that it is free, but also by the possibility to study in one's native language. Also, a sufficient number of schools and their convenient location are very important for attendance.

There are 9,800 day schools, including 2,100 in urban areas and 7,700 in rural areas. The total number of schoolchildren in the 2006/2007 academic year was 5,707,200 pupils, including 1,805,700 in urban areas and 3,901,500 in rural areas.

Table 3.4
Trends in general schools and their pupils 2000–2006

	2000/2001			2006/2007				2006/2007 as % of 2000/2001	
	Total	Including:		Total	Including:		Total	Including:	
		urban	rural		urban	rural		urban	Rural
Number of school	9,726	2,065	7,661	9,796	2,085	7,711	100.7	101.0	100.7
Number of pupils (thousand)	6017.6	1922.5	4095.1	5707.2	1805.7	3901.5	94.8	93.9	95.3
Proportion of schools with more than one shift	73.6	76.1	72.7	72.6	73.8	72.0	98.6	97.0	99.0

Source: State Committee on Statistics

The fall in the number of pupils at general secondary schools is mainly related to the transition to secondary specialized vocational education. The declining birth rate also had some impact on this process. The total number of schools, though, has not recently decreased, on the contrary it has grown. As a result, the percentage of children studying in different shifts was reduced from 73.6 in 2000 down to 72.6 in 2006.

The number of schools instructing in languages other than the state language also grew.

Table 3.5
Trends of language of instruction

Language	Uzbek	Russian	Karakal.	Kazakh	Tajik	Kyrgyz	Turkm.
2003/2004							
Number of schools	8,765	780	375	555	307	69	56
Number of pupils (thousand)	5506.3	284.1	144.6	140.6	116.3	15.5	14.1
2004/2005							
Number of schools	8,801	753	376	544	282	67	56
Number of pupils (thousand)	5440.8	277.0	134.6	127.4	101.8	14.4	15.0
2005/2006							
Number of schools	8858	760	383	531	261	63	50
Number of pupils (thousand)	5299.0	270.1	128.5	115.7	90.5	12.4	12.4
2006/2007							
Number of schools	8,827	760	383	522	258	61	48
Number of pupils (thousand)	5075.3	282.6	116.3	99.1	91.1	12.2	11.0

Source: State Committee on Statistics

In a total of 760 schools instruction is provided in Russian and the languages of other ethnic groups (Russian-Uzbek, Russian-Karakalpak, and others). Out of them in 93 schools children are taught only in Russian. The opportunity to study in one's own native language creates favourable conditions for getting a good education.

At the same time, the quality of school facilities has been poor so far. At the beginning of the 2006/2007 academic year 37.3% of schools were housed in buildings constructed for other purposes, while the buildings of 252 schools (2.6% of the total) were in emergency accommodation. Many schools did not have centralized heating systems, running water and gas. Over 27% of pupils studied in 2–3 shifts. The proportion of schools with sufficient teaching aids and laboratory equipment was just 29%, and only 4.6% had sufficient computer equipment. Just 48.4% of schools had gyms, and those with sufficient sports equipment and inventory were just 23%. The problem was especially acute in rural areas.

This situation necessitated the adoption of a large-scale and innovative (first in the former Soviet Union) Program of School Education Development. According to this program, during the 2004–2009 period it was planned to build 325 new schools, to reconstruct 2,313 schools and to conduct major and routine repairs at 5,838 schools. This was the largest construction project in the history of the country.

In accordance with this program in 2004–2005 129 new schools were constructed for 35,800 pupils, and major repairs were carried out on 286 schools for 112,800 pupils. In addition, local authorities and sponsors financed construction and repair works at 380 schools for a total number of 209,500 pupils, allocating over 25.1 billion soum.

By 2007, into the third year of the program, the number of schools having drinking water increased from 70% in 2004 to 80%, having gas grew from 52.8% to 59.8%, having communications rose from 48% to 59%, and having sewage grew from 43% to 47%. In 2006 alone, 409 schools were connected with drinking water, 318 schools were provided with gas, and 276 schools were linked to the telephone network.

Table 3.6
Improvement of school infrastructure and facilities in 2005–2006

Types of improvement	Number	actual		planned	
		2004–2005	2006	2007	2005–2009
New construction	schools	129	65	62	299
	students	35,798	23,621	20,390	108,193
Capital reconstruction	schools	286	388	497	2,305
	students	112,756	149,195	188,181	777,831
Capital repair	schools	436	525	676	3,339
	students	246,628	278,700	378,934	1,698,949

*data on capital repair is only available for 2005

Source: State Committee on Statistics

Within the framework of this program between 2004–2006 schools bought furniture, teaching aids and laboratory equipment, computers and sports inventory worth over 100 billion soum (or the equivalent to about 100 million USD).

As a result, by the beginning of 2007 the provision of physics laboratories with special teaching and laboratory equipment reached 40%, of chemistry laboratories 38%, biology laboratories 37%, and computer classes 38%.

Box 3.2.
Indirect benefits of the school education development program

In order to provide the necessary equipment for schools, new modern production of special school furniture, teaching aids and laboratory equipment was established. Here are some of the indicators:

- The number of companies producing specialized furniture, laboratory and sports equipment grew by 2–2.3 times, while production was established in more than 10 provinces;
- Production volume increased by 1.3 times, whereas imports of laboratory and specialized equipment declined by 23–25%;
- Over 170 types of furniture and equipment were produced locally and it is expected that in 2007 the process of localization will increase by a factor of 1.2.

The provision of textbooks was significantly improved. For this purpose in 2004–2006 the government allocated 46.4 billion soum. Schools bought 55.2 million copies of textbooks and school books, which upgraded the provision of textbooks to the new generation from 82.1% in 2004 up to 92.1% in 2006. Within this period 1,435 titles were published in 7 languages of instruction, with renewed content and quality printing.

Access to school education for all groups of children is achieved in part by the availability of specialized educational establishments (subsidiary schools), where children with special needs (physical and psychological abilities) are instructed. Children with limited abilities and poor health are educated at sanatorium type boarding schools.

The quality of education and availability of qualified teachers is the most important factor in school education reform. Within the framework of the National program of school education the relevant agencies elaborated new and improved

national education standards (NES) and curricula. Since the 2004/2005 academic year this new improved NES and modernized curricula has been piloted initially in 29 experimental centres. In addition, for all subjects, the authorities organized experimental classes in various regions.

Well-known scientists and leading specialists in teaching methods, along with teachers specializing in innovative teaching methods, were attracted from different regions of the republic to the work carried out at these centres. At the first stage of the NES and curricula testing 31 subjects were developed in the light of this experience and in the new instruction languages.

The second stage of the experimental work aimed at improving the NES and curricula continued during the 2005/2006 academic year with 81 subjects organized by subject and languages of instruction in 45 experimental classes. It should be noted that among the subjects tested were 26 subjects for schools with instruction in Russian and other minority languages.

The results of the experimental centres were approved by the board of the Ministry of Public Education and recommended for the general schools nationally.

During the 2005/2006 school year pilots of these new NES and curricula were launched in an additional 50 subjects compared to the 2004/2005 school year.

Systematic monitoring of the curricula and the NES pilots shows that the level of children's knowledge and skills is rising in all subjects, grades and instruction languages when compared with the requirements of the former version of the NES and curricula. Thus, at the end of the 2005/2006 academic year the level of acquired knowledge and skills in experimental classes accounted was at 87.6%, which is 2.4% higher than in the previous year.

During the 2006/2007 academic year the third stage of this piloting was launched. Currently 53 subjects at 54 experimental centres are being tested out.

The introduction of the national education standards into the educational process has produced positive results.

These improvements were influenced by the gradual improvement in the school infrastructure and facilities, as well as the modernization of the NES and curricula. The provision of schools with modern textbooks was of particular importance, as well as the application of new pedagogical and communication technologies.

For the development of children's abilities and talents the authorities established specialized schools and classes for greater in-depth study of some school subjects. The organization of such activities in both general and specializing schools with focus on a few particular subjects is one of the tools used with the aim of raising the overall quality of education.

Table 3.7
Numbers of schools and pupils with in-depth study of some subjects

	2003/2004	2004/2005	2005/2006	2006/2007
Number of special schools and lyceums	355	376	265	245
Number of pupils (thousand)	153.6	160.3	115.1	116.1
Number of schools with in-depth study of some subjects	3,116	2,853	2,341	1,845
Number of pupils (thousand)	594.0	473.0	383.1	291.0

Source: State Committee on Statistics

Schools carry out a lot of groundwork in searching for, selecting and teaching gifted children. Such children are provided with special (including copyrighted) curricula designed especially for them, additional scientific and methodological literature as well as computers. Gifted and talented children can be given individual study programs.

The results of Uzbekistan's schoolchildren at various international contests testify to the improvement in the quality of education. Between 2004–2006 118 pupils of Uzbekistan participated in international competitions and won 36 medals and 41 diplomas.

It should be noted that recently the prestige of schools and teachers has grown. The number of applicants to pedagogical institutions increased from 36,205 to 49,055 within a 3-year period.

A special role in reforming general secondary education is played by the educational establishments (schools) in rural areas. By implementing educational programs, they execute a number of specific functions and objectives related to the social and economic development of rural areas.

Many instruction hours are used in rural schools to organize optional classes related to agriculture and work training. Teaching and the education process in rural areas has improved significantly. The gap in pupils' knowledge between rural schools and urban schools narrowed in such subjects as mathematics, physics, native language and foreign languages.

Work training organized for high-school pupils at plots of land allocated to the schools by the local authorities can be considered as a positive experience.

At the same time, the quality of education at schools where instruction is in the state language is affected by the lack of certain types of literature, including textbooks, fiction, and books on social and political issues written in the new Latin alphabet. As a result, many schoolchildren do not have the opportunity to broaden their understanding of the world by reading books additional to the school curricula. There are big divergences in the quality of education in different schools not only within regions of the country, but even within one region. The role played by the school director is especially important. He or she is the person who organizes the work of the professional teachers. There is a national certification to assess the professional qualities of school directors—their abilities to manage and lead the staff. The results of the recent certification show that among directors not everybody meets these requirements. Out of 9,601 school directors who were certified in 2006 just 3,459 (36%) met the requirements, 2617 (27.3%) were certified conditionally, and 1,378 (14.4%) of directors showed a very low level of knowledge and as such were not certified.

There is still a lack of teachers, especially in rural schools. At the beginning of the 2006–2007 school year, schools lacked a total of 1,455 teachers of foreign languages and 551 teachers of mathematics. Currently 141,900 teachers do not have a higher education (31.4%), including 15,800 teachers (3.5%) teaching one of the major subjects such as native language and literature, mathematics, physics, chemistry, history, fundamentals of the state and law, foreign languages, geography and biology.

Rural schools are still the weak link in the educational process where teachers with a higher education make up only 66% of the total, while for cities this figure is 76%. There the primary school teachers are mainly trained at colleges rather than at higher educational institutions. This is a serious drawback since psychologists have proven that the foundation for the whole human life is laid in primary school.

In order to resolve these problems the authorities created a system to form a reserve for future school directors and ensure their gradual upgrading of qualifications at specially tailored courses. In addition, currently an improved system of salary payment in the public education sector is being introduced. Teaching personnel have been given more rights and the pedagogical boards of general schools have become more independent. A mechanism for transparent and fair payment to teachers is being introduced.

The Director's Fund has been established at all schools through which teacher's work can be rewarded. Teachers can receive additional payments for the following activities:

- For class tutoring and for the regular checking of student's homework—(up to 100% and 50% of the minimum salary respectively);
- For high levels of educational and extra-curricula work with pupils—up to 15% of the basic wage rate of the corresponding qualification category;
- For professionalism and significant contribution to the educational process and good quality work—up to 25% of the basic wage rate of the corresponding qualification category.

Between 2005 and 2006 teachers' salaries have grown by a factor of almost 1.9. This created a more effective way of encouraging talented teachers—those who show devotion to their profession, initiative and high levels of professional skill. Better organization of the teaching load, carried out in compliance with educational standards, attracted new professionals into the public education sector. The increase of the basic wage rates for managing staff in the education system had a positive impact on the activities of managing staff at all levels.

A good system of training and upgrading qualifications has been established for teachers of all school subjects. It is provided at 22 higher education institutions of the country. Tashkent State Pedagogical University named after Nizamiy is the coordinating agency engaged in developing the methodology for teachers' training. The university has created the conditions necessary for studying and then disseminating best practice as well as for applying the lessons learned.

Table 3.8
Number of teachers and their qualifications (2000–2006)

	2000		2006		2006, as % of 2000
	Thousand people	As % of total	Thousand people	As % of total	
Total	443.0	100	451.7	100	102
Out of them with higher education	316.7	71.5	309.8	68.6	97.8
including:					
In urban areas					
Total	114.7	100	115.8	100	101
With higher education	89.9	78.4	88.2	76.2	98.1
In rural areas					
Total	328.3	100	335.8	100	102.3
With higher education	226.8	69.1	221.6	66.0	97.7

Source: State Committee on Statistics

Within the framework of investment projects by international organizations such as ADB, JBIC, KFW and GTZ, educational resource centres for distance learning have been established in 70 selected schools and 15 institutes for teacher training.

As a result of this work in training qualified personnel and improving the skills of teachers, the quality of teaching is constantly improving. The number of teachers at general schools is 451,700 (full-timers), including 309,800 with a higher education degree.

Additional extra-curricula education. In order to develop supplementary education for children and teenagers the Government of the Republic of Uzbekistan adopted a number of comprehensive programs to develop extra-curricula education, including sports, especially in rural areas. These programs give priority to those sports which do not need expensive sports equipment. Special attention was also paid to include children from needy families, orphans and the disabled. Governmental programs provided for the creation of sports grounds and basic play areas on the territory of each district for each local body of self-governance (mahalla).

In 2006 a network of 1,400 children's sports and extra-curricula educational institutions involved over 16% of school pupils from grades 1–9.

Table 3.9
Number of institutions of supplementary education for children and teenagers in 2000–2005

	2000			2006			2005 as % of 2000		
	I	II	III	I	II	III	I	II	III
Extra-curricula institutions-total	581	32.8	487.6	628	26.2	551.2	108.1	79.9	113.0
Including:									
Clubs of schoolchildren	190	14.0	205.8	144	7.2	157.0	75.8	51.4	76.3
Centres of creative technical work	130	7.0	95.5	134	5.3	115.2	103.1	75.7	120.6
Nature centres	108	5.1	72.5	112	3.8	79.9	103.7	74.5	110.2
Centres of children's creative work	65	4.7	79.8	107	6.9	139.6	164.6	146.8	174.9
Others	88	2.0	34.0	131	3.0	59.5	148.9	150.0	175.0
Number of sports schools for children and teenagers	530		261.2	516		298.6	97.4		114.3
Number of art and music schools	311		70.3	304		39.7	97.7		56.5
Number of groups of collective creative work for children and teenagers operating under clubs		6061	105.1		6192	97.8		102.2	93.1

I—No; II—No of groups (thousand); III—No of participants (thousand)

Source: State Committee on Statistics

General schools have organized over 122,000 groups and sections with a great range of profiles and titles. Supplementary education is provided to more than 2.4 million pupils (38%).

The problem of supplementary education and children's leisure time is also addressed by opening 'extended day' groups. In 2006 such groups were opened at 2,854 schools, which covered 390,200 pupils of grades 1–9, including 147,800 in urban areas and 242,400 in rural areas.

Preventative measures are also undertaken to ensure that young people do not get into trouble with the law. These measures include explanatory work in the mass media, as well as targeted interventions for the most at risk children and teenagers, those deemed to be most likely to become involved in crime.

With the support of the local authorities such families receive assistance at the local (mahalla) level. Members of the mahalla committees are usually older respected citizens (aksakals). The mahalla committees help to create a favourable environment in rural and urban areas, to support the role of the family in bringing up young people, and to provide material aid to needy families and families with many children.

In 89% of mahallas (out of a total of 11,400) teachers work jointly with the mahalla committees in organizing extra-curricula work for schoolchildren in their own neighbourhood, which is seen as an effective way of organizing the leisure time of schoolchildren and providing them with assistance in getting additional education.

At the same time, this system of supplementary extra-curricula education should be further developed. The main constraint is financial, and so far the demand for these types of services is not high.

3.2.3. Secondary specialized vocational education

General description of secondary specialized vocational education. Compulsory 3-year secondary specialized vocational education (SSVE) is an independent element in the overall system of continuous education. It is provided in compliance with the laws of the Republic of Uzbekistan "On Education" and "National Program of Personnel Training". Though secondary specialized vocational education will only become compulsory as of 2009, currently graduates of secondary general schools already have the right to choose the direction of their further studies—whether at an academic lyceum or a vocational college.

The objective of secondary specialized vocational education is not only intensive intellectual development and in-depth study of general subjects, but also preparing graduates to join the labour market and providing them with professional skills.

Secondary specialized vocational education is provided on a full-time basis, in two types of educational establishments: academic lyceums and vocational colleges.

Academic lyceums are secondary specialized vocational educational establishments, providing a 3-year education in compliance with the national education standards. Lyceums are focused on intensive intellectual development, a deep specialized and professionally-oriented education, taking into consideration the pupils' interests and abilities. While studying at academic lyceums pupils can choose the direction of studies (humanities, sciences, agriculture and others).

Academic lyceums are usually established under higher educational establishments in order to involve qualified university teachers, and in some cases use university laboratories, equipment and libraries.

To provide in-depth, specialized education, academic lyceums can involve relevant research institutions, which can act as patrons of an academic lyceum based on an agreement with the Ministry of Higher and Secondary Specialized Education.

Vocational **colleges** are the second type of secondary specialized vocational educational establishments providing a 3-year education. In compliance with the national education standards these colleges provide secondary specialized vocation-

al education with in-depth development of professional skills—training students in one or several trades of a chosen profession.

Local authorities, industry and other bodies can function as trustees to provide support to these vocational colleges and some can also have higher educational establishments as their patrons.

Implementation of this vocational and educational curricula at vocational colleges takes place at both the college and in industry, on the basis of the national education standards.

Vocational colleges are equipped with up-to-date equipment as required by the relevant profession. In using such equipment students can acquire relevant special skills and work experience.

The education and vocational curricula of academic lyceums and vocational colleges is provided on a 3-year basis. At the end of each year of studies students are tested in exams in order to assess the students' level of knowledge and skills.

The academic year is divided into two terms, with holidays ranging from 10–12 weeks.

All classes in lyceums and vocational colleges last for 40 minutes. When necessary, classes can be joined into pairs.

Upon completion students of secondary specialized vocational educational establishments are awarded a diploma of secondary specialized vocational education with the following information:

- For academic lyceums—profile of studies including academic specialization;
- For vocational colleges—awarding relevant professional qualification.

Academic lyceums and vocational colleges provide a secondary specialized vocational education with which they can go on to further study or join the labour market in accordance with their acquired skills and profession.

Access to secondary specialized vocational education. As of January 1, 2007 there were 1,055 new secondary specialized vocational educational establishments, including 99 academic lyceums and 953 vocational colleges. Of these vocational colleges 296 are housed in newly constructed buildings and 628 are housed in the buildings of former vocational schools having undergone major reconstruction including equipping them with modern teaching materials and laboratories. The total amount of government investment between 1998–2006 on the infrastructure and facilities of the secondary specialized vocational education network was:

- For construction and reconstruction—981.3 billion soum;
- For provision of equipment—78.5 billion soum, and an additional 113 million USD from foreign investment;
- For teaching materials—11.4 billion soum.

Currently secondary specialized vocational educational establishments cater for 1,075,000 students, out of which 1,021,900 students (164,400 after the 11th grade) enrolled in 953 vocational colleges and 53,100 students enrolled in 99 academic lyceums. The secondary specialized vocational education network covers 62.8% of the graduates of general schools.

At the same time, the access to vocational education is restricted by the following factors:

Firstly, vocational colleges are not always located in the right places. Currently 684, or more than half, of the vocational colleges and almost all of the academic lyceums are located in cities. As a result graduates of general schools situated in rural

areas can encounter difficulties. For while the education provided by vocational colleges is free, students do not receive scholarships and as such there is an additional expense for those who have to move to the city and live in dormitories.

Secondly, the irrational specialization of vocational colleges restricts the choice pupils have of their profession. For example, most rural school graduates have to study at the colleges located close to them but the majority of the colleges in rural areas specialize in agriculture. While initially this may seem logical, given the importance to the economy of agriculture (25%), in fact the reforms in agriculture are creating a surplus of labour in the agricultural sector, meaning that many school graduates need to and want to train for other professions.

Thirdly, access to education in certain specialties is restricted. The biggest proportion of students of vocational colleges are being trained in the production sphere: industry, transport, construction and communication. However training in many types of specialties in these spheres is not provided. There is an urgent need to review the specialization of many colleges, especially those focused on training professionals for such emerging sectors as oil and gas, light industry and food processing.

Unfortunately, within the last five years the sector specialization of colleges has hardly changed and as a result does not fully reflect the needs of economy.

Table 3.10
Structure of students at vocational colleges by sectors in 2006 (as % of total number of pupils)

Industry, construction, transport, communications	28.2
Agriculture	18.5
Economics, law	13.1
Healthcare	14.0
Education, sports	14.3
Service sector	9.5
Culture and art	2.4

Source: State Committee on Statistics

Thus, structural reform of the secondary specialized vocational education and the radical renovation of its governance system should be among the priorities for further reform of the education system.

Fourthly, access to vocational education for girls is even more restricted. They can study only at educational institutions close to home. This can be explained by the traditional concerns of parents, common in Muslim countries, about sending their daughters to other regions for studies, where they would have to live in a dormitory. As a result girls are usually taught at nearby colleges specializing in training pedagogical and medical personnel. Among students of colleges specializing in production, transport, construction and agriculture the share of female students is much lower than 50%.

Fifthly, there are problems with access to secondary specialized vocational education for children from needy families. The direct and indirect costs of education are especially high if children study outside their home region. So children from needy families tend to study only in the very local colleges. Even then, everyday transport ex-

penses and the cost of living separately from the family (in a dormitory) are quite high. There is no centralized transportation of students to the place of their studies.

Sixthly, the problem of access to secondary specialized vocational education for students with special needs has also not been solved. There are no secondary specialized vocational educational establishments for training such students. There are no appropriately developed curricula, textbooks and manuals.

The content of secondary specialized vocational education (SSVE). The content of SSVE includes those sectors determined by the national education standards:

- The general curricula for academic lyceums and vocational colleges is the foundation for the potential continuation of studies at university level (to get a Bachelor's degree);
- In-depth curricula on subjects relevant to the particular specialty of each academic lyceum;
- Professional curricula for vocational colleges.

Study at these vocational colleges and academic lyceums is organized according to a recently introduced Classifier of directions, specialties and professions of secondary specialized vocational education along with qualification requirements for junior specialists. The Classifier currently in force includes 348 specialties and 840 professions. Training is currently provided in 268 specialties which cover 712 professions.

During the period 1998–2006 277 branch educational standards and 3,503 curricula on general vocational and special subjects for vocational colleges, 5 branch standards, 11 study plans and 69 curricula for in-depth general preparation according to the specialties of academic lyceums were designed, piloted in experimental classes, discussed at seminars and conferences, approved and introduced. During the 2006/2007 school year 268 new typical study plans, characterized by mobility, flexibility and fast adaptation to the needs of labour market, were approved and introduced. Modernized study plans take into consideration all forms and types of studies, the organization of the independent work of students, as well as some hours allocated for educational establishments to make their own choices.

An assessment rating system has been elaborated and introduced with the aim of assessing the quality of students' knowledge. This newly introduced mechanism ensures continuity with the rating systems of both general secondary and higher education.

The integration of secondary special vocational education with industry is achieved in the following ways:

- By the creation of joint production at vocational colleges and departments of colleges organized at factories and plants;
- By development of a dual system of personnel training;
- By the preparation and development of qualified personnel through combining classroom training with paid internships in industry;
- By systematically upgrading teachers' qualifications in the area of advanced technologies, and providing on-site training;
- provision of students with jobs for practical training;
- provision of educational establishments with up-to-date equipment;
- participation of industry in funding educational establishments as founders, trustees, and sponsors;
- provision of students of academic lyceums with the infrastructure and facilities of higher educational establishments and research institutions, or for those stud-

ying at vocational colleges—with a relevant patron and higher educational establishment;

- encouraging the active involvement of students in both social pursuits and also the production process with real output.

At some vocational colleges in areas for which legislation sets age or other restrictions the structure of study is determined by special study plans in accordance with the national educational standards by professions.

The content of secondary special vocational education for teenagers with both physical special needs and learning disabilities (blind, deaf, slower learners and others) is determined by the education authorities in collaboration with the healthcare and social protection agencies.

Modernization of teaching methods and resource base. Between 2001 and 2005 **9**95 new textbooks and school books were published, totalling 5.1 million copies, and at a total cost of 9.1 billion soum. In addition 131 electronic textbooks were created.

Within the framework of foreign investment projects and grants there are plans to organize a number of events to develop and publish more new textbooks and school books that meet world standards. For example, in the framework of the Asian Development Project UZB–1737 "Development of secondary special education in the Republic of Uzbekistan" study materials on 19 subjects were developed and published, and in the framework of the German bank KFB project study materials for 16 subjects were developed for training specialists in information and communication technologies.

The libraries of educational establishments have been fully stocked with literature on general subjects in Uzbek and Russian. In addition, with the aim of modernizing the educational process and introducing new pedagogical and information technologies, academic lyceums and vocational colleges have been equipped with multimedia computer systems and language laboratories, and additional educational material has been created such as educational films, multimedia software, electronic mini-posters and others. Teacher workshops and seminars have been organized to upgrade the qualifications of teachers so that they can effectively utilize these new teaching aids and equipment.

To further support the modernization and increased quality of the educational process a new set of regulatory documents have been approved and since the 2005/2006 academic year introduced into the study process. These include "Individual schedule of teacher's activity", "Rating system for the assessment of pupils' knowledge", "On the organization of pupils' independent work", "On pupils' written works", "On open classes", "On work load norms" and "On rating of teachers".

Between 2000–2006 over 240 new types of teaching aids and equipment were introduced for teaching general subjects. Special laboratories and production shops are being equipped with these new devices, with 70% to 90% of them being the most up to date technology.

The SSVE Centre under the Ministry of Higher and Secondary Specialized Education is responsible for managing the academic, methodological and organizational activities of academic lyceums and vocational colleges, providing services related to secondary special vocational education for the leaders of governance bodies (as agreed with the local authorities), and also for providing qualified professors, teachers and technical trainers.

This SSVE Centre thus has a supervisory and coordinating role over this sector, with the aim of developing and introducing national educational standards, bringing coherence into the education programs, and training and retraining the teaching staff.

The existing secondary special educational institutions which were established as vocational colleges under the Ministry of Culture, Academy of Arts or Ministry of Health are still under their control.

The secondary special and vocational-technical educational institutions established as vocational colleges under branch ministries, agencies, corporations, associations and enterprises are supervised by two bodies. The branch ministries, agencies, corporations, associations and enterprises provide for them material and financial assistance, students' vocational and practical skills training, make needs assessments to identify the required number of specialists, and resolve issues related to the job placement of graduates.

A secondary special educational institution is headed by a director who is appointed and dismissed by the higher education management body. For accredited private educational institutions this is done according to the schools charter. The director is fully responsible for the results of that educational institution.

In both academic lyceums and vocational colleges there are scientific and pedagogical councils that are collective bodies under the director. They support in organizing and improving the teaching and pedagogic process.

There is now an opportunity to establish public governing bodies (trustees or supervisory councils) in secondary special vocational educational institutions. These function on the basis of the legislation and the school charter.

Teaching personnel. 62,835 teachers and vocational training officers work in the system of SSVEs. 57,591 of them (92%) have a higher education and 5,244 (8%) of them have a secondary special education. There are 103 (0.2%) doctors of sciences, 875 (1.4%) candidates of science amongst them. Between 1998 and 2006 66,900 teachers and vocational training officers upgraded their qualifications in 43 retraining and in-service training courses that are offered on a constant basis.

To quickly train up the necessary number of teachers for secondary special vocational training a special correspondence bachelor's degree program was set up at special departments of Tashkent State Pedagogical University, Bukhara Food and Light Industry Technology Institute, Namangan Engineering-Pedagogical Institute, and also the Urgench, Karakalpak, Andijan, Samarkand and Fergana State Universities. These teachers have been selected amongst the teaching personnel that already have a secondary special education and who had at least three years of relevant teaching experience.

In order to provide qualified pedagogical and technical teachers for academic lyceums and vocational colleges, a Target Program for selecting, certifying, preparing, upgrading and retraining of leaders and pedagogical personnel was developed and implemented.

9 Centres for the upgrading and re-training of pedagogical and technical teachers of secondary special vocational training were established at the Republic's best vocational colleges, selected for their highly qualified personnel and good facilities.

As a result of foreign investment during the period 1998–2006, 1,087 teachers participated in study visits and upgraded their qualifications abroad. Within the framework of the investment projects of ADB, JBIC, KFW, and GTZ in the 2005–2006 academic year alone courses were conducted for 3,708 SSVE teachers to study and mas-

ter new educational standards and state of the art pedagogical and information technologies. Regional In-Service Training Centres were established at 14 vocational colleges included in the ADB project, and similar centres were also established in 9 vocational colleges.

Thus, during 2005 and 2006, it was necessary to re-train and upgrade the qualifications of 22,200 teachers at higher educational institutions. In 2007 there is less need—just 13,000 teachers from the technical training colleges which are closing and teachers who used to teach at the 10th and 11th grades being phased out of general schools will need re-training. It is planned to involve in academic lyceums and vocational colleges 2,800 specialists from other branches of the economy and engineering teachers from higher education after their relevant retraining.

Existing educational institutions and also the opportunities provided by the Fund "Istedod" are widely used for the vocational training and retraining of teaching staff. Thus, in 2006 944 leaders and teachers upgraded their qualifications with the help of foreign experts and the Fund at the Tashkent Information Resource Centre.

At the same time, the current differences in salary restrict the possibilities of university professors teaching in the SSVE sector, and it is also difficult to recruit qualified specialists from various branches of economy to be vocational training officers.

The facilities in the in-service training institutions are much worse than in the newly established SSVE educational institutions, and this affects the quality of training provided at these centres.

Job placement of graduates of vocational colleges and academic lyceums. To address this issue and to integrate the economy and education, the Government of the Republic of Uzbekistan approved the "Territorial Programs on Quality Training and Use of the Labour of Graduates of Vocational Colleges and Academic Lyceums for 2006–2010" on the 23rd November 2005. These territorial programs take into account the specificity of each region in line with the administrative division which has been developed on the basis of this Program. Coordination Councils have been established under the regional governments (Khokimiyats). They are headed by the mayor (Khokim) and include representatives of many governmental and public organizations.

The territorial programs are aimed at employing as many graduates as possible, and also at creating new jobs through using the funds of the Employment Fund; developing regional vocational training institutions responsive to the needs of local labour markets; measuring supply and demand in the labour market in that region; and establishing the mechanism for effective monitoring of the performance of vocational colleges from the employers' point of view.

The employment issue is not only related to a shortage of jobs, although this is also the case. There are also some other problems to be addressed, some of them serious. It is necessary to tackle these problems in order to change the situation regarding the SSVE graduates' employment. For example, it is necessary to develop and introduce an appropriate social partnership mechanism for the participants of the education sector, labour market, employers, and public organizations; it is necessary to improve the system of selection of older pupils and give them the opportunity to choose professions they like, otherwise after finishing the SSVE they may not want to work in their professions.

However, despite the measures taken, there are still many problems with the employment of graduates of secondary special educational institutions. In 2006 only

Box 3.3.
International Assistance in Establishing the System of Secondary Special Vocational Education in Uzbekistan

International donors and organizations have provided considerable assistance in the process of reforming the education sector in Uzbekistan. Between 1998 and 2006 the following projects were implemented:

- Financed by a loan from the Government of the Republic Korea totalling $35 million, 218 vocational colleges and academic lyceums were equipped with learning and lab equipment, 240 SSVE teachers, technical trainers and management upgraded their qualifications in Korea.
- "Assistance in Reforming the Area of Vocational Training in Uzbekistan" within the framework of the TACIS program managed by the European Union was a project worth 1 million Euros. As part of the project 3 vocational colleges were equipped, manuals and learning materials covering 6 areas of pilot colleges were developed, and over 30 teachers and college leaders and SSVE Centre personnel were trained abroad;
- As a result of a grant given by the German Technical Cooperation Society entitled "Support for Developing Primary Vocational Schools in Uzbekistan", totalling 5.25 million DM, 850,000 DM was spent on equipping 8 model colleges. The teaching staff of these model colleges upgraded their qualifications and at the same time textbooks and learning material related to certain academic fields were developed and introduced into these colleges;
- Another project was with the German International Development Fund (DSE) and involved conducting six-month courses on upgrading the qualifications of 72 employees of the SSVE in Germany with preliminary teaching of the German language in Uzbekistan;
- A Government of Japan grant worth $6.3 million dollars had the objective of delivering learning and lab equipment to the Institute of Upgrading Qualifications and Retraining of Personnel in the SSVE sector and also equipped 9 regional centres for the training of teachers, retraining and upgrading the qualifications of the technical teaching personnel in the SSVE sector at vocational colleges;
- The "Development of Secondary Special Vocational Education in the Republic of Uzbekistan" was implemented thanks to a loan given by the Japanese Government. The total amount of the loan was 6,347 million Japanese yen. 5,506 million Japanese yen was utilized to purchase equipment and 491 million Japanese yen was used to upgrade qualifications. Equipment for 50 agricultural vocational colleges in 7 agricultural areas was purchased, and 50 directors of model educational institutions and 6 members of personnel of the SSVE Centre Management, 50 teachers (trainers) of model educational institutions and employees of the SSVE Centre were trained abroad within the framework of the project;
- "Social Partnership in Education and Training in Uzbekistan" was implemented as a result of a grant of the TACIS program of the European Union. 950,000 Euros were spent on developing social partnership. During the project vocational colleges were equipped with the necessary items for their areas of training (these were located in Bukhara, Samarkand, Navoi, Tashkent region and the city of Tashkent).

Projects currently being implemented:

- In support of the "Development of Secondary Special Vocational Education in the Republic of Uzbekistan" the Asian Development Bank has given a loan worth 391 million dollars. The objectives of this project are to purchase equipment for 42 vocational colleges and 3 academic lyceums; to upgrade the qualifications both abroad and in country of 263 directors and teachers of model educational institutions, along with the personnel of the Development of Secondary Special Vocational Education in the Republic of Uzbekistan and the SSVE Centre; to develop and produce learning materials for six areas of general educational subjects and for 30 areas in specialist subjects, to purchase textbooks and manuals for model educational institutions, and to establish resource centres in which authors can produce textbooks;
- The preferential loan long-term project of the Government of Germany that is implemented through KFW and the German Technical Cooperation Society (GTZ) aims to equip 24 vocational colleges in the area of information and telecommunication technologies, to upgrade the qualifications of leaders and teachers of model colleges; to publish teaching materials and manuals; and to prepare multipliers for the Institute of Upgrading Qualifications and Retraining of Personnel in the SSVE sector. The size of the loan is 7.6 million euros and just over 1 million euros is provided for technical assistance in the project;
- The "Development of Vocational Education" is being implemented thanks to a soft loan provided by Poland to deliver learning and technical equipment to 84 vocational colleges in the spheres of agriculture and light industry. The size of the loan is 15 million US dollars;
- The "Development of Vocational Skills—Uzbekistan" is financed as a result of a grant given by the Swiss Consulate. The size of the grant is 3.5 million Swiss francs. The objective of the project is to prepare Uzbekistan's sector of secondary special vocational education to tackle the challenges posed by the changing social and economic environment through creating models of cooperation between colleges and employers;

61% of all graduates of vocational colleges found a job, with just 45.1% finding a job according to their trade. Almost 79,700 graduates or 33.6% did not find a job.

Table 3.11
Employment of Graduates of Secondary Special Vocational Educational Institutions in 2006

Type of secondary special educational institution	Number of graduates, in thousands	Entered universities, %	Were employed, %		Not employed, %
			overall	in their specialty	
Vocational colleges	23,7126	5.3	61	45	33.6
Academic lyceums	7,872	59.2	11.8	n/a	28.9

Source: State Committee on Statistics

This employment problem is created not just because of a shortage of jobs, although this is a problem. There are some other serious problems which will need to be addressed in order to improve the job prospects of SSVE graduates.

First, it is necessary to take a more flexible approach to the specialization of educational institutions, especially those located in rural areas. It is not surprising that it is difficult to solve the employment problem if every year hundreds of specialists in one area finish the college located in the region (for example teachers of kindergartens or librarians or workers of municipal services). The population's mobility is quite low, and the result is an excess supply of workers in some areas in one region, and a shortage in others. Of course no one educational institution can train specialists for all required professions at the appropriate level, however it is clearly necessary to be more flexible in choosing the specialization of vocational colleges.

Second, college vocational training in industrial professions is multiple-disciplinary, there is no vocational specialization even during the last years of training. For example, the education of specialists for the food processing industry or textile industry does not provide students with a broad spectrum of the necessary specialties required by the relevant industrial enterprises. This means that many newly established industrial enterprises are having to retrain graduates of vocational colleges in order to enable them to work in these narrower fields of activity.

Third, the educational standards are not perfect. Many SSVE educational standards are focused on the process of training rather than the outputs.

Fourth, the quality of the academic curricula and programs does not result in the required quality of training. For example, the general academic programs are insufficiently consistent with school programs, with quite a bit of overlap and are not consistent with the vocational part of training. The vocational training programs are training professionals in line with the requirements of employers because they have been developed without serious consultation and coordination with employers. Students study a lot of subjects in a way that results in superficial learning, and this is not sufficient for preparing for the selected profession in-depth. There are no instruction manuals for teachers in many subject areas which is a problem because especially in vocational training the educational process depends very much on the teachers' skills.

Fifth, the insufficient qualifications of the teaching staff, in many cases, is caused by a lack of teachers' instruction manuals, lack of a system of training and retraining

teachers in specific areas to work in secondary special vocational educational institutions, lack of systems of sharing experiences among teachers and training teachers at relevant modern enterprises. The current system does not yet have sufficient resource capacity to organize the systematic upgrading of qualifications and sharing experiences among the pedagogical personnel.

Sixth, the majority of students in secondary special vocational educational institutions do not have access to practice and internships at the relevant modern enterprises.

3.2.4. Education of Orphans and Disabled Children

The social security of the population is a priority of government policy. In recent years various targeted social security programs for different categories of the population have been introduced. The Government pays special attention to issues related to the social security of vulnerable children. The objective of the social security system aimed at children in critical life situations is not only to enable their survival, development and active participation in social life once they leave their institutions, but also to take preventative measures to avoid social orphans. As a result in the Republic:

the system of state bodies to be engaged in protecting children's rights and interests within the framework of their competence has been established. The Legislative Chamber of the Oliy Majlis of the Republic of Uzbekistan (Parliament), the Cabinet of Ministers of the Republic of Uzbekistan, the National Human Rights Centre, the Human Rights Commissioner under the Parliament, along with the relevant ministries and institutions, Supreme judicial and investigating bodies are all engaged in dealing with these issues at the national level. Khokimiyats, law-enforcement bodies, commissions on juveniles' affairs, trusteeship and guardianship bodies, public prosecutors' offices, courts, and some other bodies are engaged in protecting child's rights at the local level;

- there has been a strengthening of the coordination of such issues as addressing the needs of vulnerable children, child neglect and juvenile delinquency, and also disabled children;
- work is being carried out to improve the legislative framework related to children's rights, and the system to facilitate the reintegration of children from "Mehribonlik" (mercy) children's homes and also those children particularly at risk back into society;
- the educational content is being updated, with new educational forms and methods being put in place;
- the social support for children from families having many children, the needy and troublesome families, orphans and children without parental care is provided (the education and care of orphans and children without parental care or other legal representatives is carried out by the state as determined by the legislation);
- an Educational Centre has been established to address access issues of children from orphanages and needy families to additional education, and their self-image when they reach adulthood;
- a broad network of new institutions is being built including social health centres for families and children, for the psychological-pedagogical rehabilitation of difficult teenagers, pedagogical and social services for children, and educational centres for children and adults;

- psychological support is provided for orphans and psychological and law bodies have been established to provide them with relevant services, and detailed information on all the pupils of "Mehribonlik" children's homes has been collected and the data stored;
- programs for the professional training of specialists in social work and children's rehabilitation have been introduced in higher and secondary special educational institutions.

The Government has taken radical measures to provide social security for younger generations, which have laid the foundation for future prevention of the problem of "deserted children".

About 7,000 children and teenagers without parental care are found each year and all of them are sent to different public educational-pedagogic institutions, or are placed in foster families or adopted.

Specialized preschool educational institutions are established for children suffering from mental and health abnormalities. They are admitted on the basis of a medical certificate given by the psychological-medical and pedagogic commissions established by the authorized public bodies responsible for managing education and health care at the local level.

At present, in the country there are operating 13 infant's homes with 700 infants enrolled, 28 children's homes with 3,100 pupils enrolled, and 17 boarding schools for children from needy families and children without parental care. Over 5,100 children and teenagers, including 1,600 orphans and children without parental care live and study in them.

Each of these institutions makes a significant contribution to the elimination of society's "social diseases" which can cause much suffering for these children.

Table 3.12
Functions of the Social Support System for Children and Teenagers in 2005

	Units	number of children by the end of 2005.			Including placed in 2006.		
		In total under	Including the age of		In total under	Including the age of	
			Under 7 years old	From 7 to 18 years old		Under 7 years old	From 7 to 18 years old
Infant's homes	13	732	732	0	109	109	n/a
Orphanages	28	2992	349	2643	505	154	351
Boarding-schools for children from needy families and children without parental care	17	5076	104	4972	230	14	230
In foster families		26173			3634	823	2811
Adopted in families		36943			2415	1571	844

Source: State Committee on Statistics

In 2006, 900 disabled children were admitted to academic lyceums and vocational colleges bringing the total to 2,600 disabled students currently studying in them. 1,200 thousand orphans were admitted in 2006, bringing the total to 3,600 orphans studying in them.

Disabled children receive the necessary treatment and education to support their overall development and preparation for independent life and work at special medical-educational institutions.

Sanatorium schools and sanatorium boarding-schools have been established for children suffering from chronic diseases, where the working schedule adapts to their specific conditions and medical-educational objectives.

Table 3.13
Network of educational institutions for children with disabilities requiring long term medical care and number of students catered for in 2000 and 2006

	2000		2006	
	units	number of students (ths)	unit	number of students (ths)
Schools for children with mental or physical disabilities	**87**	**20.9**	**88**	**19.6**
blind and visually impaired	10	2.4	12	2.3
deaf-and-dumb and hearing impaired	18	4.1	18	4.7
other	59	14.4	58	12.6
Sanatorium-boarding schools for children suffering from different diseases	**21**	**6**	**21**	**6.2**
forms of tuberculosis	3	0.9	6	1.9
patients with a scoliosis	8	2.3	10	3.2
Other diseases	10	2.8	5	1.1

Source: State Committee on Statistics

Children with mental and physical disabilities study at schools and boarding-schools for the mentally retarded children, deaf and hearing impaired, blind and visually impaired, for children with poliomyelitis after effects and cerebral palsy, and with dysphasia. These children study for a longer time as they require special methods of education and rehabilitation.

In the country there are 5 boarding-houses for handicapped children with 1,600 children enrolled in them. Within the education system special provision has been made for children with learning disabilities such as special schools and compensation classes. Rapid tiring, lethargy, and a lack of sufficient vocabulary are potential problems if these students are placed at normal schools. These boarding-schools help to introduce these children to the rhythm of school life, in order to satisfactorily cope with academic programs. As a result of this additional support, some of them can subsequently attend normal schools, while others stay at the boarding-school to receive a partial secondary education over a longer period of study time.

At the same time, much more should be done to support the inclusive education of handicapped children at all levels of education. It is very important not to waste their mental capacities for the sake of their own self development and self-image, as well as for the sake of society.

3.2.5. Higher education

General characteristics of the higher education sector. Access to higher education is on the basis of completion of secondary special vocational training (and up until 2009 also secondary schools), which as discussed exists as an independent part of a wider system of life-long education. Higher education provision is based on the Laws of the Republic of Uzbekistan "On Education" and "On the National Vocational Training Program".

The goal of higher education is to provide for the professional training of qualified, competitive personnel meeting the modern requirements of graduates. They must be able to independently work in their chosen areas of knowledge (professions), to contribute to the scientific, technical, economic, social and cultural development of the country and have high moral, cultural and ethical characteristics.

The higher education system includes the following:

- higher educational institutions that carry out educational and vocational programs in line with the state educational standards irrespective of ownership types and departmental subordination;
- scientific and pedagogical institutions which conduct research necessary for the development of higher education;
- education management government bodies, and also the enterprises, institutions and entities that are under their jurisdiction.

Government policy in this sector is based on the following principles:

- humanistic, democratic character of training and education;
- the priority of university education;
- continuity with both secondary special vocational, and higher and post-university education;
- secular nature of the education system;
- availability of education for all within state educational standards;
- holistic and differentiated approach to choosing education programs;
- fostering endowments and talents;
- combination of government and private management within the system of higher education;
- integration of higher education, science and industry.

Students are admitted to educational institutions by means of ordinary and additional tests that check the knowledge of entrants.

Higher educational institutions provide professional training funded both by government grants but also on a fee basis.

There are two main tiers in higher education sector: bachelor's and master's.

Bachelor's — otherwise known as basic higher education. This provides the fundamental and applied knowledge in the area of professional training for the duration of four years.

After finishing the bachelor's program, graduates are awarded with degree "bachelor" according to their chosen field of education, and they are given state attested diplomas.

Master's — higher education that provides both fundamental and applied knowledge in the chosen field of specialization for the duration of two years. Entry is on a competitive basis upon completion of a bachelor's degree.

After finishing master's programs, graduates are awarded with a Master's degree according to their chosen field of education, and they are given state diplomas.

Box 3.4.
Extracts from the History of Higher Education before Gaining Independence

The first ideas for establishing a secular national university emerged in Turkistan, the motherland of great oriental philosophers, at the end of the nineteenth century. These ideas were developed in the Jadids' (reformers) publications such as Tarjimon (Translator) and Oyna (Mirror). An initiative council including liberal representatives of the nation was set up to develop a system, identify the areas of education, structure of departments and drafts of curricula.

The well-known educator Munavvarkori Abdurashithonov (1878–1931), the first Rector of the National University, declared that the university would start its activity on 12th May 1918. The event was held in one of the monumental buildings of the old city (subsequently TYUZ was housed in that building). At the first stage of its activity the National University provided training at three educational levels: primary, secondary and higher. At the higher education level there were five departments: literature and philosophy, economics and sociology, agriculture and livestock, natural sciences and mathematics, and also industry and engineering. In a short period of time, by 1921, the University was providing professional training for students in physics, mathematics, medicine, social economy, engineering, history, philology, agriculture, and military science. Moreover, professional training was provided for students at the rabfak.

The National University was part of the very foundation of higher education and a leading educational institution of the country, and so established regional branches and other independent higher educational institutions across the country.

During the Soviet period, there were 42 higher educational institutions, including three state universities (Tashkent, Samarkand and Karakalpak), 14 Pedagogical or Linguistic-Pedagogical, 9 Engineering-Technical, 3 Agricultural, 7 Medical-Pharmaceutical, 3 Institutes of Arts and Culture, and also the National Economics Institute, the Cooperative Institute and the Institute of Physical Training and Sports. Almost half (19) of these higher educational institutions were located in Tashkent and Samarkand (5 in each), Andijan (4) and Bukhara (3). Thus three quarters of the higher educational institutions of the Republic were located in four cities.

Professional training in many important areas was provided only in the central higher educational institutions at the centre of the former Soviet Union and the access of school graduates of the Republic of Uzbekistan was limited for many reasons. Curricula and academic programs which were used at the republic level of higher education had to be approved in the Union centre, and it was prohibited to bring about any changes regarding regional characteristics.

Holders of bachelor's and master's degrees are qualified for professional work according to their specialization or to continue training in the higher educational institutions.

Higher Educational Institutions. Higher educational institutions are legal entities and are of the following types:

university — provides academic programs in the sector of higher education and post-university education in a wide spectrum of fields of knowledge and areas of professional training;

academy — provides academic programs in the sector of higher education and postgraduate education in a specific field of knowledge and areas of training;

institute — provides academic programs in the sector of higher education and, as a rule, at the postgraduate level in specific fields of professional training within one area of knowledge.

Legislation permits the establishment of non-governmental higher educational institutions. The educational institution of this type can operate if accredited and certified in line with the established guidelines.

The Quality Management Agency responsible for supervising professional training grants certification to higher educational institutions irrespective of which department they come under or their type of ownership. In addition it certifies the faculty and other teaching personnel, and the state testing centres, according to procedures approved by the Cabinet of Ministers of the Republic of Uzbekistan. The state accreditation of any higher educational institution can be withdrawn on the basis of the certification results.

Box 3.5.
Organization of teaching and learning

To organize the educational processes in higher educational institution, faculties, departments, chairs and students' academic groups have been formed.

The educational process in higher educational institutions is performed in line with the state educational standards and is regulated by the curricula, academic calendar and timetables. Educational activities can be of the following types: lecture, tutorial, seminar, case study, laboratory work, test, colloquium, independent work, practice, course project (work), or final attestation work.

The length of an academic hour is 45 (or 40×2 for a lecture without breaks) minutes. The length of the break between classes is 10 minutes. Generally there are two terms in an academic year. At the end of each term it is necessary to check the students' knowledge through assessing them on the basis of their achievements (rating scores). Students' progress is assessed through rating them on the basis of scores achieved.

Advanced students transfer to the next course upon the confirmation of the head of the educational institution at the suggestion of the dean of faculty. Conditional transfer is not permitted. Students who do not meet the requirements of the curriculum but have a valid reason are given the opportunity to clear their academic debts prior to the beginning of the new academic year or are given academic leave. Students who do not reach the necessary standards within a reasonable amount of time would have to drop out.

At the end of the educational process in a higher educational institution, graduates must be tested through taking compulsory final examinations. In addition it is the employers who assess the relevance and quality of training courses.

Educational-vocational programs in higher education can be taken in different modes: full-time education or correspondence education in the form of external studies and distance learning. With the permission of the head of a higher educational institution, it is possible to change the mode of study and educational institution but within one area of education. It is also possible to simultaneously study for a second higher education in another mode on a fee basis.

Students who study full time with state grants are provided with stipends, the level of which is set by the Cabinet of Ministers of the Republic of Uzbekistan. The most gifted students may receive special individual stipends. Students who study by correspondence are given paid leave for the period of study and passing examinations.

External studies — a student may independently study the academic disciplines according to the educational-vocational program of higher education in their chosen field and she or he will have final examinations in a higher educational institution.

Distance learning — a student works and studies at the same time, and the educational institution is located in a different place. Distance learning is based on using modern information technologies and telecommunication facilities.

The list of professional training that can be provided only on the full time mode has been drawn up by the Cabinet of Ministers of the Republic of Uzbekistan.

Reforms in the higher education system. The first stage of reforms in higher education can be called the stage of restructuring, and it mainly took place between 1991 and 1995. The basic areas of reforming higher education during that period were:

priority of university education. Tashkent State Technical University, Tashkent State Economic University, the University of World Economy and Diplomacy, and the Tashkent Islamic University were established. Andijan, Bukhara, Gulistan, Karshi, Namangan, Fergana, and Urgench universities were established on the basis the existing regional pedagogical institutes. The status of university was also awarded to the Tashkent Institute of Foreign Languages and Tashkent Agricultural Institute;

breaking up into smaller units and the specialization of higher education institutions. From one large Tashkent Polytechnic Institute two more universities were established: the Tashkent Chemical Technological Institute and the Tashkent Architectural-Construction Institute in addition to the existing Tashkent State Technical University. The Tashkent State Institute of Oriental Studies branched off from Tashkent State University to become an autonomous university;

localization of higher education. To overcome a skew in the location of higher educational institutions, three quarters of which were located in several large cities and the majority in Tashkent, universities were established in all regions of the country. They include the already mentioned 7 regional universities and the universities established on the basis of branches of Tashkent universities: Djizak Polytechnic Institute, Karshi Engineering-Economics Institute, Namangan Engineering-Economics Institute, and the Navoi State Pedagogical Institute. Each higher educational institution had a concrete program for restructuring the forms and content of education according to the new status given.

The second stage of reforms in the system of higher education began in 1996, when the Higher Education Development Concept was developed. This document was firstly discussed in the universities of the Republic, and then it was published in the mass-media to be widely discussed by the public. The basic priorities of that stage were the following:

- transition to a two-tier system of higher education: bachelor's and master's;
- transition to a new system of funding that provides financing from government budget funds in the form of state grants for the students who have the best results in the entrance tests and also private financing in the form of admitting students on a fee basis;
- complete transition to admitting students on the basis of entrance tests (instead of the previous oral and written examinations) which are given on one specific day and time throughout the whole country using state-of-the-art computer technologies.

Access to higher education in the Republic is ensured through 64 higher educational institutions of which 20 are universities, 40 institutes, and 2 academies. In addition, in Tashkent there are international universities such as Westminster International University in Tashkent, branches of the Russian Academy of Economics named after G. V. Plehanov, and the Moscow State University named after M. V. Lomonosov. A branch of the Russian University of Oil and Gas named after Gubkin will start providing higher education as of 1st September 2007. Taking into account the branches of different universities, the number of higher education institutions has reached 72, and 35 out of them or nearly half are located in the regions, thus increasing the availability of this kind of education to many graduates of schools and secondary special vocation-

al institutions. At the same time, Tashkent is still the largest centre of higher education because 37 higher educational institutions are located in this city.

Among the country's universities 22 provide professional training in the field of education, 15 in the areas of industry, construction, transport and communication, 5 in medicine, 4 in agriculture, 9 in economics and law, and 7 in other sectors.

There are a total of 286,300 students in higher education, including 273,700 at the bachelor's level and 12,600 people at master's level. 69% of students study on a fee basis at the bachelor's level and 75% students study on a fee basis at the master's level. Since 2000 the number of new university students enrolling each year has increased by over a third, and the overall number of students studying in universities has increased by over 1.5 times.

The master's level is developing even more dynamically. The number of newly enrolled students each year has increased by over 2 times, and the number of students who study by over 3 times during the period in question.

Table 3.14
Trends in higher education development 2000–2006, in thousands of people

	2000	2001	2002	2003	2004	2005	2006	2006 as % of 2000
Number of higher educational institutions (units)	61	61	62	62	63	62	62	101.6
Enrolment in higher educational institutions (people)	44.7	50.6	54.6	61.0	59.3	59.6	61.1	136.7
Bachelor's	41.9	46.6	50.6	56.1	54.2	54.2	55.4	132.2
Master's	2.8	4.0	4.0	4.9	5.1	5.4	5.7	203.6
Number of students	183.6	207.2	232.2	254.4	263.6	278.7	286.3	155.9
Bachelor's	179.6	200.4	223.5	244.9	253.2	267.4	273.7	152.4
Master's	4.0	6.8	8.7	9.5	10.4	11.3	12.6	315.0
Graduates of higher educational institutions	31.6	36	39.8	45.5	52.8	57.8	60.7	192.1
Their share as % of the total number	35.9	33.8	32.3	32.3	31.3	31.2	27.4	

Source: State Committee on Statistics

Internationally there are two models of entrance to higher educational institutions: limited access and unlimited access. The majority of countries throughout the world limit access to higher educational institutions on either a centralized or decentralized basis. The factors which influence the choice are the amount of finance available, the resource capacity of higher education institutions, and also the results of entrance examinations (or tests) of those who wish to enter. In many countries (such as Japan, South Korea and China) there are relatively high assessment criteria for being admitted to higher education institutions. This approach initially provides a very high quality of education as it allows for the selection of the most gifted and well prepared young people.

Under the decentralized system the admission quota is determined by each higher educational institution on the basis of its own resources. This quota is a boundary line and those applicants whose entrance scores fall below this cut off point are not admitted.

Moreover, in many countries limited access to higher education is related to the fact that a tuition fee is charged and the level of this fee plays an important role. There are many who are interested but just don't have the financial means to study or even complete in the entrance tests.

When admission to higher educational is unlimited, and this model is most popular in the industrially developed countries of Europe, access to higher education is easy and the only reason it does not cover all the population is due to family and individual choices. However the quality of learning is not always so high under this system, as those less able struggle to cope with the program, and they either have to repeat the course or the requirements are adjusted to students or the standards are lowered to include those less able students. However, this system does provide for a high level of secondary education in the country and it means that talented but needy students are not excluded from higher education.

Access to higher education in Uzbekistan is limited due to several factors:

- there are set quotas for entrance to educational institutions. This makes sense since education is provided both on a grant basis and also on a fee basis. At the same time, these quotas are often unrelated to the resource and personnel capacity of the institution. The quotas are determined by government bodies responsible for regulating the needs of the labour market in various professions, and this is done on the basis of rather subjective estimations of the institutions in question;
- test results. The required entrance level is separately established for each higher educational institution. The result is that this system often produces 'double exclusions'—the student who did not get a sufficient score for his or her chosen university might have scored enough to get into another university, but students can only apply for one each year. As a result many talented entrants have to miss an academic year, and sometimes completely miss out on receiving a higher education;
- the high tuition fees for those who study on a fee basis. Although the annual tuition fee is approximately $400–800 per year, this is very expensive for needy families. The existing system of educational loans is practically not accessible for needy families as it demands guarantees or collaterals, and needy families frequently cannot meet these requirements;
- there are less educational opportunities for girls compared to young men. The share of girls amongst students in higher educational institutions is 40% as a result of family restrictions on girls studying in higher educational institutions. The reasons might be the location of higher educational institutions and the parents' unwillingness, common in many Islamic countries, for their girls to leave homes, or girls get married before they finish their educational and their new families do not wish them to continue their education, or low-income families are reluctant to invest money in an education they may not be able to complete or use after marriage

Lack of inclusive education for students with disabilities.

Access to higher education can be increased using new forms of training, such as external studies, distance learning and evening classes.

The quality of higher education is assured through introducing the State Educational Standards (GOST) established for 149 bachelor's areas and for 650 professions at the level of master's. An important component of higher education quality is the continuity and links between general secondary, secondary special, vocational and higher education.

The Higher Educational Institution Development Fund has been established within the system of higher education to allocate funds to create new textbooks, improve educational facilities and students' accommodation, and to introduce advanced information technologies. Thanks to this Fund, the personnel of higher educational institutions have created many new textbooks (over 3,400 titles). Moreover, modern effective sources of professional information have been created—including original electronic books (over 170 titles) and the electronic versions of existing books (over 2,900 titles).

In all higher educational institutions abstracts of lectures, methodical aids for laboratory works and practical classes, instructions for course projects and internships, handbooks for final bachelors' and masters' dissertations, and other methodological documents have been developed and introduced. With the aim of developing the students' skills of independent leaning, new study plans have been introduced which reduce the volume of classes from 36 hours to 32 hours and so increase the proportion of students' independent work.

A corporate information system established under the Ministry of Higher and Secondary Special Education enables the bringing together of the higher educational institutions of the republic in a single information area, introducing elements of electronic document circulation, raising management efficiency and cooperation between higher educational institutions. A program has been introduced for developing content for the public education information network ZiyeNET with historical, scientific, cultural, moral and ideological information resources. The gateway of the Ministry of Higher and Secondary Special Education has a data base with the full texts of 8,798 electronic educational sources. Electronic profiles of all higher educational institutions and information on all teachers, students studying at bachelor's degree courses, master's and postgraduate courses are entered into a corporate information network of the Ministry. Also, information on the students' assessments is available at the site which ensures regular monitoring of the educational process.

The main libraries of higher educational institutions are equipped with computers and various means of information exchange and delivery. The system "Irbis" for storing and searching for information search is being introduced. To complement the traditional stocks of books and magazines, modern libraries have introduced electronic versions of books and electronic textbooks, both locally developed and from abroad.

At the same time, the poor quality of education in higher educational institutions has given rise to harsh criticism from students and their parents, and also of the graduates who are the main consumers. The quality of education at the Masters' level is particularly poor.

Firstly, the causes are:

- The educational process is excessively overloaded with too many subjects having to be learned. In the leading higher educational institutions in Western countries students study 3–4 subjects during a term, whereas in Uzbekistan that number is 10–14. As a result the majority of subjects are not studied in suf-

ficient depth, and students do not focus on the detail needed for their future profession. For example, according to the state standards approved in Uzbekistan, a student's maximum amount of academic hours per week is 54 hours, including up to 32 hours of classroom work and no less than 22 hours for independent study. At universities of the industrially developed countries classroom study accounts for up to 24 hours, and up to 30 hours are given to independent study;

- the key focus remains on academic study in the classroom, and the entire educational process is oriented toward this mode of study. Students do not have enough time to study independently. A teachers' classroom load is greater in comparison with leading foreign higher educational institutions, and the salary for one academic hour in class is low. The result is a poor quality of students' education that does not meet current requirements;
- lab equipment and educational facilities in higher educational institutions do not meet contemporary requirements. Many types of educational and lab equipment either are not in place or are outdated. This is the cause of the very poor quality of training for students in the technical and engineering professions;
- students' internships and study visits are frequently only a formality. In most cases this is why they are not an effective component of the educational process, and they do not ensure the necessary quality of professionals;
- the low and decreasing level of teaching at schools and secondary special vocational educational institutions in the areas of mathematics, physics, chemistry, and biology has a knock on effect on the quality of education in higher educational institutions, especially in the natural sciences and technical professions;
- the low level of teachers' salaries not only leads to a poor quality of teaching but also causes corruption in the higher education sector, and unfortunately this is a widespread phenomenon in many higher educational institutions;
- the assessment of students' knowledge based on tests is not conducive to promoting transparency in assessment and the struggle against corruption. Thus, this 'formalization' of assessment frequently results in losing the quality of education since students are not focused on gaining a comprehensive and profound knowledge but only answering these formalized questions;
- master's programs and curricula are badly developed, and they are inadequately related to the bachelor's programs. There is a shortage of textbooks and manuals as well as instruction materials. The low level of teachers' qualifications who teach at this level is so far hindering the full implementation of the idea of a high-quality two-tier education.

Pedagogical personnel of higher educational establishments. Over 20,000 professors and teachers work in the education system of the country, including professors and doctors of science—8.2%; and assistant professors and candidates of science—35.2%.

With the aim of encouraging and increasing responsibility for the results of their work, the mechanism of teachers' rating was introduced.

The resolution of the Cabinet of Ministers "On further improvement of pedagogical personnel training and qualification upgrading" was adopted, which envisages compulsory and differentiated qualification upgrading by professors

and teachers of universities, as well as certification and results assessment. With the aim of providing governmental support to upgrading qualifications, the President's Fund "Istedod" (meaning 'progress') was established. Grants have been provided to 935 teachers to organize their qualification upgrading at the educational establishments of developed countries. All the resources made available for qualification upgrading meant that by the end of 2006 about 3,000 teachers had internships and had increased their qualifications.

With the aim of fully utilizing staff resources, the "Typical staff of higher educational establishments" program was introduced.

While the supply of teachers working in the higher educational network seems to be relatively satisfactory, there is a lack of qualified teachers. In 2000–2006 the number of candidates of science per university decreased from 108 to 103. Due to the low inflow of doctors of science into the education sphere, the number of students per one doctor of science grew from 131 to 191, or by almost 1.5 times.

Most university teachers do not have close links with the world of practice and so can only share theoretical knowledge. The best teachers of overseas universities usually have significant experience of work at companies or combine teaching with work at a company in a role such as consultant or expert.

Table 3.15
Number of teachers and professors per higher educational institution in proportion to the number of students, 2000–2006, thousand people

	2000	2001	2002	2003	2004	2005	2006	2006, as % of 2000
Number of professors and teachers per university (total)	302	325	349	360	360	373	377	124.9
Out of them:								
Doctors of science	23	28	23	24	23	23	24	105.4
Candidates of science	108	110	113	116	113	116	103	95.4
With higher education	171	187	214	220	224	234	250	146.2
Number of students per teacher (total)	177	171	216	224	232	257	254	143.5
Out of them:								
Doctor of science	131	122	166	170	176	199	191	145.5
Candidate of science	28	31	33	35	37	39	45	160.8
With higher education	18	18	17	19	19	19	18	104.6

Source: State Committee on Statistics

International links and cooperation in higher education. With the aim of improving the quality of the educational process and upgrading teachers' qualifica-

tions, the Ministry of Higher Education of the Republic has engaged in wide-scale international cooperation.

Currently affiliates of leading universities of foreign countries such as Westminster International University in Tashkent, the Russian Academy named after Plekhanov, and Moscow State University named after Lomonosov are operating in the Republic. A branch of the Russian Institute of Oil and Gas named after Gubkin is being established in Tashkent, and a master's department is being created at Samarkand State University jointly with Bologna University (Italy). Negotiations are being carried out with Japan, the Netherlands, and Spain concerning joint staff training. For example, Spanish partners provided favourable credit amounting to 25 million euro with the aim of developing joint forms of personnel training with the Uzbek State University of World Languages. Close cooperation was established with a number of leading overseas universities such as Cambridge, Sorbonne, Oxford, Harvard and others. The Japanese government provided a grant to the Tashkent Textile Institute amounting to 440 million yen with the aim of equipping it modern laboratory equipment. Distance learning using the educational curricula of the Massachusetts Technological University has been arranged. Over 200 foreign students study at universities of the country. All these and some other initiatives enable Uzbekistan's national network of continuous education to integrate into the world education community.

3.2.6. Postgraduate education

Postgraduate education is targeted at meeting the society's needs for highly qualified scientists and teachers, in line with the creative, educational and vocational interests of individuals.

In contrast to developed countries, where postgraduate education includes studying for a Master's degree and Doctor's degree, in Uzbekistan postgraduate education includes the stages inherited from the Soviet system such as the candidate qualification and doctorate. Each stage entails preparing and defending a dissertation with the aim of receiving a Candidate's degree at the first stage and Doctor's degree at the second stage. Study at theses stages can be both full-time and by correspondence, and can be on a competitive basis. Approximately 50% of all defended candidate and doctor dissertations are defended on a competitive basis.

Candidates of science are prepared in 298 scientific directions, and doctors of science are prepared in 60 scientific areas. Though the range of scientific directions is wide, there are no candidates and doctors in a number of priority areas due to the lack of corresponding scientific schools and insufficiency of academics in some specific directions.

Within the period starting in 2000 the number of those studying at candidate and doctoral courses dropped sharply. In 2005 this figure was less than half the figure in 2000. At the same time, the effectiveness of these courses also did not grow significantly. The number of those who graduated from such courses and successfully defended their dissertations increased both in absolute and relative terms. However, the effectiveness of such courses is very low. Only 15.6% of candidate students and 8.6% of doctoral students finish their studies and defend their dissertations.

Table 3.16
Dynamics of preparation of research personnel in 2000–2005 per 1000 researchers

	Post-graduate courses			Doctorate courses		
	2005	2000	2005, as % of 2000	2005	2000	2005, as % of 2000
Entrants	32.9	23.4	71.2	4.6	2.2	47.8
Total currently studying (people)	144.5	74.2	51.3	13.3	7.2	54.3
Graduates	35.0	29.4	84.1	3.8	2.6	69.3
Including with thesis defence	3.0	4.6	154.2	0.2	0.22	94.0
As % of graduates	8.6	15.7		6.3	8.6	

Source: State Committee on Statistics

Within the last two-year period the state quota for enrolment to candidate and doctorate courses slightly increased: in 2005 (compared to 2004) to candidate courses by 30% (by 76 people) and to doctorate courses by 40% (by 10 people); in 2006 (against 2005) to candidate courses by 28% (by 92 people) and to doctoral courses by 54% (by 19 people). Currently within just the network of the Ministry of Higher and Secondary Specialized Education (33 higher educational establishments and 2 research institutions) there are over 900 postgraduate students in 200 academic areas, 75 of whom are preparing doctorate dissertations in 70 areas.

The key causes of this low effectiveness of the postgraduate education network are as follows:

- Insufficient qualifications of entrants to candidate and doctorate courses. Due to the lack of incentives for working as teachers at universities, the best university graduates prefer to work at more prestigious and better paid jobs in companies and joint ventures. As a result the best graduates don't enrol;
- In overseas universities the first stage of a postgraduate education is considered to be the master's. The next stage is then the doctorate. Uzbekistan preserved an additional stage of education which requires additional time. In leading overseas universities higher and postgraduate education last from 7 to 10 years[28], while in Uzbekistan there is no option but to study 11 years[29], and for medical personnel it takes 13–15 years;
- The complicated and expensive process of preparing and defending a dissertation for both candidate and doctoral students, especially for those students located in the regions. Practically all the specialized councils are located in Tashkent. To pass all the procedures starting from the dissertation preparation to its defence, it is required to discuss the research work many times at diverse seminars, usually held at Tashkent universities. As a result, students from the regions regularly have to travel to Tashkent, which is expensive and time

28 The minimum term of studies includes 4 years at the Bachelor's degree level, 1 year at master's and 2 years for the doctorate, and maximum term is 4 years for a Bachelor's degree, 2 years at master's and 4 years for the doctorate.

29 4 years at Bachelor's level, 2 years of master's, 3 years of candidate studies and 2 years of doctorate.

consuming. The processes of presentation, choice and discussions with official 'opponents' or examiners, and the external examiner, as well as the defence at a specialized council, also require multiple trips to Tashkent. This complicated and expensive procedure of dissertation preparation remains an obstacle for all students from the regions;

- The insufficient number of qualified research personnel in regional universities and research institutions hinders the creation of the academic environment required for the development of a new generation of research personnel. This becomes a vicious circle when the lack of qualified personnel does not create the right research environment, and then the lack of this research environment discourages the inflow of qualified research personnel into regional universities;
- Lack of a proven and effective curricula for candidate and doctorate studies, a lack of connection between dissertations and practice, and as a result a low level of application of the research.

3.3. FINANCING OF EDUCATION

3.3.1. International Experience

Progress in the field of education is closely related to the financing and effective utilization of the allocated financial resources. Of course not all levels of education require special funding. It was estimated that only 20% of the knowledge people acquire is through a formal education (such as in academic institutions, completing in-service training courses, various seminars and workshops). The remaining 80% is gained through life experience—informal education such as in their families, at work, while interacting with other people and organizations, at meetings, conferences, and on business trips.[30] Thus most of the knowledge has been acquired for free, or at least nobody intentionally funded it. Thus, here we can only discuss the financing of formal education, and just a few aspects of informal education (such as informal tutoring).

A) Worldwide Comparison of Expenditures on Education

The share of expenditures on education as a proportion of GDP differs significantly in all countries of the world. The highest is 15% of GDP in the Marshall Islands, located in the Pacific Ocean. As of 2004 its share of spending was 25 times higher than in Equatorial Guinea where it was 0.6%[6].

The richest countries allocate the largest funds. This is true regarding public expenditure, which (being on average 5.6%) exceeds the world average (4.4%) by over one fourth and is twice as high as in those countries with the lowest level of human development2. However, this does not take into account private investment, which due to the wealth of these countries is able to complement public funding to a significant degree (the average level of private investment amounts to 2% of GDP). This level of spending is not only high in relative terms but also, of course, much higher in absolute terms because 1% of GDP in rich countries is many times larger than 1% of GDP in poorer countries.

30 [6] "Modernization of Higher Education Economics: Challenges, Priorities and Prospects". Collection of Abstracts of the International Scientific-Practical Conference.—Tashkent, TGEU, 2007, p. 305.

Table 3.17
Government Expenditure on Education in Selected Countries Worldwide in 2004 (as percentage)

	% of GDP	% of government expenditure
Uzbekistan	8.5	36.2
Morocco	6.3	27.8
Ethiopia	6.1	20.4
Belarus	5.8	13.0
South African	5.4	18.1
Columbia	4.9	117
Iran	4.8	17.7
Hong Kong (China)	4.7	23.3
Kyrgyzstan	4.6	23.0
Ukraine	4.6	18.3
Thailand	4.2	27.5
Panama	3.9	8.9
Tajikistan	2.8	16.9
Lebanon	2.6	12.7

Source: 2006 World Development Indicators. The World Bank, Washington D. C.

In the majority of countries worldwide the increase in educational expenditures per capita depends on the level of education: the increases are minimal at the elementary education level, whereas they reach the highest level in higher education.

However, there are exceptions to this general rule. According to the GDP per capita indicator in Australia, Great Britain, Iceland, Macedonia, Nepal, Poland, and Turkey and in some other countries public expenditure per student in secondary education is lower than for primary. In at least two countries of the world—in Japan, Kazakhstan—expenditure on higher education is on average lower than on secondary, and even on primary education. In Portugal expenditures for higher education are lower than for secondary, but greater than for primary.

In industrialized and industrializing countries expenditures per student at the primary, secondary and higher levels are similar, the differences between them usually not exceeding three or four times. Malaysia and Kuwait are the exceptions because the expenditures for higher education are larger than in primary education by a factor of 5 and 7 times, and Belize is also an exception because here the difference reaches double digits—13 times larger. As for the poorest countries of the world similar contrasts are more likely the rule than the exception: expenditures for higher education are more significant than on primary education. For example, in Gambia, the Congo and Lesotho approximately 30 times more is spent per capita, and in Eritrea by a factor of 110!

B) Models of Financing Education

Worldwide there are several models of financing education depending on several factors:

- the country's economic development and budget resources;
- the ideological commitment of the country's government to raising the population's educational level for human development and for the economic progress of the state as a whole;

- opportunities to raise extra-budgetary financial resources for the education sector;
- the population's values related to education as a whole, and also to education of a certain level and quality.

The characteristic of the first model of financing education is that the state completely and independently finances all levels of education, except for small amounts of parental fees for children in preschool establishments, school uniforms, textbooks and educational accessories, and also for able-bodied but not working students for their full time study in secondary special and higher educational institutions.

Over a number of decades this model formed the basis of policy in all former socialist countries (the former USSR, a number of Eastern European and Asian countries along with Cuba), where education at schools, secondary special educational institutions, high schools, postgraduate courses and doctoral courses, and also various in-service courses was free-of-charge. At present this model is used in a limited number of countries.

The advantages of this model are obvious: it ensured practically equal opportunities of access to each level of education for the entire population, irrespective of their financial situation or place of residence.

It is no accident that there is practically no illiteracy in all the countries that used to have this model, irrespective of their level of economic development, and their educational indicators are amongst the highest in the world.

The disadvantages of this model are related to limitations in the government budget, especially in the areas of expensive capital spending for the renewal and reconstruction of educational facilities and their equipping with state of the art equipment. There is also a low return on the investment in terms of the quality of training, and limited opportunities to raise additional financial resources for the sector of education to improve its quality and effectiveness.

The second model of financing education is the opposite of the first one, and it is characterized by insignificant amounts of government expenditure and charging fees for most educational services.

This model was in use up until about the mid 1990s in many poor African countries which did not have the budgets to finance even primary education. Consequently the level of illiteracy was extremely high, and the weighted distribution of the population according to their number of years of education was characterized by a bimodal (two-peak) curve. One of the peaks showed that many people just had two years of education, and a second large group had around 8 years[317].

However, the situation drastically changed in the period between 1960 and 2000 because the majority of these African countries independently, or assisted by international aid, began to introduce a system of compulsory free of charge primary education stage by stage.

The third model of financing of education is characterized by both public and private financing, supplemented by external sponsors' contributions. In turn, this model is subdivided into several types:

- dual financing at all education levels;
- some levels of education are financed completely by the state (for example primary education and in some countries also secondary), and higher levels of education are funded from a variety of financial sources;

31 [7] Justice and Development. World Development Report. The World Bank, 2006, p. 55.

- some levels of education (lower ones) are funded from diverse financial sources, and higher ones are funded by only private money.

This model of financing education is used in the majority of countries throughout the world. The best type is considered to be the variant in which primary schooling, and even better, also secondary school education, is significantly financed by the government, providing equal access to education for all social groups, despite their differences in terms of their income.

The **advantage of the dual financing model** is the diversification of financial sources that together can provide sustainable sums because the system does not depend on one financial source alone. Moreover, much research demonstrates that the financial expenses for education incurred by consumers of educational services motivate them to learn more effectively, and they demand more from teachers and the education system. This creates additional incentives to raise the level and quality of education.

The **disadvantages of this multi-channel financing model** are related to the restrictions on access to fee based education of children from relatively poor families, and to unequal human development opportunities for a significant number of the population, especially in the poor and developing countries.

Table 3.18
Government Share of Financing of Expenditures for Education (as % of total expenditure on education)

Countries	Government expenditure as proportion of total expenditure on education
Mongolia, Equatorial Guinea	100
Austria, Denmark, Israel, Costa Rica, Finland, Czech Republic, Sweden	95–98
Italy, The Netherlands, France	90–92
Barbados, Latvia, Cyprus, Rumania, Slovenia, Turkey	85–89
Argentina, Bulgaria, Great Britain, Germany, Mexico	80–83
The USA, Japan	75
Columbia, Fiji	60–63
Chilli, South Korea	55–58

Source: World Education Report 2006. UNESCO, Montreal.

Analysis of international trends in the models of financing education show that they gradually develop in favour of one version of the third model because this model is more flexible and it allows countries to quickly change the proportions of sources of funding in line with the financial opportunities of countries and commitments of the governments to education.

The UN recommends that countries significantly expand free education, initially at the level of schooling, and also to provide government assistance for various forms of early learning. This approach creates equal access to education for children irrespective of their economic background.

More and more governments aspire to fund school education but funding for higher education is done through many different forms:

- free higher education is provided for students in public universities in some countries (for example in many industrially developed European countries such

as Austria, Denmark, Finland, and Germany). Funding is provided by central government, but also city government, sponsors, money made by universities from foreign student fees, and selling scientific and research outputs and experimental-design projects;

- free higher education at public universities for some students (provided with government grants) and fee paying education for others (this system is widely used in the CIS, including in Uzbekistan);
- subsidized education in public universities, when students pay only a portion of the real cost and the rest is covered by the government (public universities in the majority of industrially developed countries such as the USA, Japan, and the UK);
- fee based education at public universities (the majority of developing countries in Asia, Africa and Latin America);
- fee based education in private universities (the majority of countries all over the world). Private and university grants are sometimes given to gifted students (and are very common in the most famous universities in the industrially developed countries);
- subsidized education in private universities (For example in Chile this accounts for over 60% of higher education, in Thailand about 50%, in OECD country-members about 33% and in India over 20%).

Table 3.19
Proportion of students in private universities in selected countries in 2004 (as % of total number of students in the country)

Countries	Proportion of students in private universities, as %
Japan, South Korea	80
Chile	74
Brazil	68
The Philippines	66
Indonesia	61
Paraguay	58
Columbia	55

Source: World Report on Education 2006. UNESCO, Montreal.

The choice of financing model mainly depends on and is connected to the chosen model of economic development. For example, it is imperative for developing countries to have a literate population as the people should be able to adopt industrial production processes transferred from more advanced countries. These countries should be ready to effectively manufacture goods using the technologies transferred to them. Therefore the government funding approach to school education quickly began to take root in these countries.

As for higher education, the situation was quite different. In the less developed countries there were, as a rule, few universities because of a lack of budget resources to fund them. Therefore private universities and fee based forms of education began to develop. In Chile, for example, the students from prosperous families have been

charged a fee for a university education, which means that not only has this enabled the funding of a significant expansion of the higher education system (at present over 40% of the age group 18–24 are covered, a very high level) but also it has enabled the government to focus state funding on supporting poorer students.

The majority of industrially developed countries, especially the European countries, aspire to provide higher education for all because their policy is to develop a "knowledge-based economy". Labour intensive industries that needed competent workers but of a relatively low education level are gradually moving offshore to developing countries. In their place high technology and knowledge intensive industries which are responsible for driving economic progress are to be developed, and these require highly trained workers. So there is a need to raise the educational and intellectual levels of the population to enable such large-scale involvement in the high technology sector. These countries are preparing for knowledge production in the form of scientific and technical development and inventions.

B) Principles of Government Financing of Educational Institutions

In many developing countries the financing of school education is changing from providing targeted subsidies for some items to the direct financing formula according to which operating expenses are covered according to a certain formula, such as the number of pupils. In some countries the system of school financing encourages competition between schools using the principle of "the money follows the pupil". Allocating funds to schools then depends on the quality of their educational services and on the satisfaction levels of pupils and their parents (and even of future employers). This is a powerful incentive for the leadership and teaching staff of schools. Teachers are similarly rewarded: school principals are authorized to make a differentiation in their salaries depending on their pupils' successes, as well as to grant scholarships for gifted children. Thus there has emerged a trend in some countries of granting primary and secondary schools significant autonomy in how they budget what has been allocated to them, in how they recruit and pay teachers, and in selecting textbooks and educational material. However, it is only possible to do this if there are good results and progress, otherwise some schools (as is the case in the USA) may completely lose their funding.

Increasing the effectiveness of government expenditure on universities, their commercialization of them, and increasing the proportion of fee paying students are the focus of measures taken to expand funding for higher education.

In some countries, where reforms are seen to have been successful, there has been a transition away from the basic principle of allocating funds to high schools (in which the allocation for the previous year is taken as the starting point) to the use of standard inputs per student that are differentiated according to the structure of training and other circumstances. In some countries this innovation has an additional feature—for example in the Czech Republic the funding system takes into consideration not only the number of students enrolled at the university but also the number of successful graduates.

So the public financing of universities depends simultaneously on a whole range of criteria. The focus is not only on the number of students enrolled in universities but increasingly on the number of students who have achieved the best results in the entrance exams or during tests. Other factors to be taken into consideration are whether the university has met a commitment to increase the quality and effectiveness of its activities, or if a university designs new projects for improving its activi-

ties. While allocating public funding to universities, special attention is paid to the complexity of educational programs and their productivity (dropout level, proportion of bachelor's, master's and doctoral qualifications in the makeup of their graduates), and the qualifications of the faculty (number of academic degrees and academic status amongst the teaching staff).

The other important innovation in the system of public financing of universities is the allocation of funds to the sector in the form of so-called 'block grants' (sometimes for periods of a number of years into the future) that cover administrative costs, wear and tear of facilities, and renewing the basic funds of the university. As for university expenses on research, they are either included in such block grants or have a separate budget line. In such cases consideration is given to the research and developmental plans of the universities, the amount of funds they have raised by other means in particular from private companies and national and international research funds, and what other similar institutions are doing.

Financial pressures sometimes force universities to earn additional funds through providing services not related to their core activities. In Japan, for example, many universities have medical departments which produce up to 20% of their budget revenues, then 12% is produced by tuition fees and charged examinations, 3% from bank loans and a similar percentage through cooperation between university researchers and the private sector. As for Hungarian Technical Universities, one of the key sources of financing has been incomes generated by carrying out contracts for private enterprises. Approximately half of all university departments sell educational courses for the general population, and this generates from between 5% to 20% of their income. Universities in the Czech Republic generate 20% of their income independently.

In the USA, Australia and in many other industrially developed countries the majority of universities are full participants in the market place, forming partnerships with business. They earn a lot of money selling educational services, the outputs of their research activity, transferring high technologies, and launching small knowledge-based and innovational enterprises.

An increasing source of raising additional funding for universities is the export of educational services. For example, the UK earns over $5.3 billion per year from international students. In the USA universities earn much more money from international students than from government funding.

c) Public and bank co-financing of private education. At present, in the majority of OECD countries approximately 10% of students are enrolled in private primary schools. Governments allocate similar levels of funding for primary and secondary schools. In India support for private educational institutions makes up a bigger proportion of expenditures on school education—almost 1/3. Governments provide significant financial support for private schools in Latin America (where every seventh student studies in one), and in the countries of Sub-Saharan Africa and in some other regions.

Much attention is given to solving the problem of access of children from poor families to the best schools, especially the private ones. This is a pressing problem both for developing and industrially developed countries. In Bangladesh, the UK, Columbia, Puerto Rico and Chile it is solved through granting vouchers to poor families for educating their children in private secondary schools. Similar vouchers are given to the poor (those whose incomes are less than $25,000) in the USA, however this is done on the basis that a voucher does not cover all the expenses for private education but only a portion of them. The rest should be financed from the family budget.

In order to minimize the amount poor households have to spend on their children's school education, in India uniforms have been abolished, and in Sri Lanka students are given free uniforms and school dinners. Also in Sri Lanka, and in Malawi, Botswana and in some other developing countries, parental fees for primary school education have been abolished at the urging of the World Bank.

In many countries worldwide there are efforts to develop mutually advantageous cooperation between the state funding of school education and the private sector. Such cooperation is better able to satisfy the level of demand for the quality of education as well as its quality.

One of the forms this cooperation takes is for local governments to contract out with private schools to admit students from both poor and wealthy families, funded by the government budget. The state thus manages to avoid large capital expenses for building new educational institutions and at the same time private schools have a stable source of financing. In practice this creates competition between private schools over which ones receive this type of government support.

Problems of access to higher education have been successfully addressed in many countries of the world as a result of the wide use of a variety of forms of financial support for students. Most notable amongst these are educational vouchers, targeted grants, subsidies, credits on favourable terms, interest-free loans and incentive grants.

The risks related to the incomplete or delayed repayment of educational loans are generally not so great. This is because the students who make use of them are sensitive to developing a poor credit history and so tend to strictly follow the terms of repayment. The insurance risks for such credits are also insignificant since students are generally quite healthy and will be healthy during the period when they need to pay back the loan.

In the majority of the countries worldwide, and, in particular in China, the tuition fee is less than the real expense. Quite often this fee is set according to the future earning potential for graduates, the effectiveness of the teaching and research activities of the universities, and also the form of payment. In Australia, for example, the tuition fee is reduced by a quarter for those paying up front and there are a number of other privileges. In Belarus the tuition fee is reduced or waived for students of public universities who are the children of the police in that region, and for the families living in areas affected by the Chernobyl disaster.

Educational loans are generally provided by special governmental financial institutions or private banks. They are paid back usually within 5–7 years or 2–3 years after graduating from university. In Sweden and in some other countries, the interest rate for these educational loans is set according to the inflation rate.

There are certain restrictions and privileges in the system of educational loans in some countries. In Lithuania, for example, these loans are only for students in public universities, in South Africa and in some other countries they are only given to students in need. To stimulate high academic achievement, students in the Netherlands, for example, can have their loans transferred into a grant on a competitive basis. It is possible, and even encouraged, that part of the loan is paid back by the employer. In China graduates' loans can be written off if they work in remote areas for a certain time.

D) Structure of expenditure in educational institutions. The basic items of expenditure in educational institutions are the operational expenses (consist-

ing of wages and other costs) and also capital expenses. In primary and secondary school education the largest item of expenditure is salaries. In nearly all cases this is more than half of the overall expenditure with the exception of Malaysia and the Comoro Islands where the salary is a little less than half.

This item also dominates the structure of expenditure in higher education, however there are many more exceptions in this case. In particular, in a number of countries including Romania, the Czech Republic, Estonia, Columbia, Cyprus, and Greece the item in question is less than 50%, and in Moldova it accounts for little over 25% and in Malaysia only 20%. Capital expenses are always less than operational expenditures with the maximum being over 40% of expenditure in Panama, Greece and Malaysia.

E) Financing reforms in education. Around the world there are great differences in how funds are allocated to finance reforms in education. Some countries have chosen reforms that are relatively cheap to carry out, while others have carried out comprehensive reforms that require significant financial resources.

Government policy on funding education in Russia, for example, is aimed at anticipating the growth in allocations of public expenditure for the education sector, significantly increasing the efficiency of spending and creating the conditions for raising funds from private sources. In China the government has resolutely rejected the practice of residual budgetary financing of education, and tangible tax benefits for educational institutions and their investors have been provided for. In the Ukraine the education financing system has improved as a result of linking the amount of funds allocated to educational institutions with the quality of educational services. Budgetary allocations are made by the state on the basis of competitive bidding from educational institutions of various patterns of ownership.

3.3.2 Financing of Education in Uzbekistan

Total expenditure on education. Public expenditure on education in Uzbekistan as a proportion of GDP is relatively high. Over the last few years it has constantly exceeded 10% of GDP (twice as much as the OECD average) and in 2005 it was 10.8%.

Table 3.20
Total Expenditure on Education in Uzbekistan (as % of GDP)

Source of financing	2000	2001	2002	2003	2004	2005
Government expenditures	9.6	8.8	9.1	8.6	8.5	8.8
Extra-budgetary expenditures	1.1	2.2	2.6	1.8	2.2	2.0*
Total	10.7	11.0	11.7	10.4	10.7	10.8

* forecasted data

Source: Ministry of Finance

Much research has focused on the fact that Uzbekistan's educational expenditure indicators exceed those in the other Central Asian countries and in any country of the European Union. There are several objective reasons for this high weighting of expenditure for education in Uzbekistan.

First, it is related to the clear commitment of the government to the dynamic development and foundational importance of this sector for human development in the country, to reduce poverty and develop the economy. Second, it is related to the demographic situation in the country since the proportion of the population under 24 years old is 52.9%, and so there are many more young people in Uzbekistan than in the majority of the industrially developed countries. The country has a bright future if this young population is well-educated and is capable of ensuring the increase of effectiveness and efficiency in the labour market. These two factors impact on the proportion of expenditure on education. Moreover, GDP per capita in Uzbekistan is not very high, and so it is impossible to compare the government's budget with those of the industrially developed countries. This is another reason for the high proportion.

Government expenditure on education. Despite the scarcity of budget resources, government expenditure as a proportion of total expenditure on education has always exceeded 80%, and this testifies to the government's commitment to support the education system. Government expenditure on education is made up of three main sources: current budget expenditures, future expenditures of future budgets allocated to cover foreign loans that have been used to develop the education system, and also the funds of the extra-budgetary School Development Fund established in 2004.

Table 3.21
Public Expenditures on Education (as % of GDP)

	1988	1989	2000	2001	2002	2003	2004	2005
Public	7.8	9.9	9.6	8.8	9.1	8.6	8.5	8.8
by sources:								
state budget	7.8	9.9	9.6	8.7	8.7	8.4	8.0	8.2
foreign loans and grants repaid from future budget revenues*	0.0	0.0	0.0	0.1	0.4	0.2	0.5	n/a
Expenditure of the public School Development Fund**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

* Converted at the average official exchange rate.

** Financing of Basic Education capital investment through the School Development Fund (SDF).

Source: Calculations are based on data provided by Ministry of Finance of the Republic of Uzbekistan, July 2005.

Public financing of education in Uzbekistan has always been targeted, most recently by adopting and implementing two large-scale national programs: the National Program for Personnel Training that was introduced in 1996 (the first priority of which was to establish a new secondary special vocational training system on the basis of new principles) and the Program for Basic Education Development established in 2004 (the objective of which is to radically improve the basic education sector).

In accordance with these programs, a large portion of public resources is allocated to the education sector due to significant investments made in the new school buildings and the provision of equipment to the secondary special vocational education institutions, and to the new construction, reconstruction and provision of equipment to basic schools.

Table 3.22
Public Education Expenditure in Uzbekistan by Main Types of Expenses (as % total public expenditure)

Type of expenses	1998	1999	2000	2001	2002	2003	2004	2005
Operational expenses	91.0	71.9	65.6	72.6	68.7	70.1	68.5	65.5
Capital expenses	9.0	28.1	34.4	27.4	31.3	29.9	31.5	34.5

Source: Ministry of Finance of the Republic of Uzbekistan, 2005

The government of Uzbekistan considers capital expenses to be of critical importance for building modern and functional facilities for the educational process, therefore it was the first amongst the post-Soviet countries to declare and carry out relevant measures to radically change these facilities—the most resource intensive type of expenditure in education.

The implementation of these two national large-scale programs has resulted in changing the composition of public expenditure for different education levels.

Table 3.23
Public Expenditure on Education by sectors (as % of GDP)

	1988	1989	2000	2001	2002	2003	2004	2005
All levels of education	7.8	9.9	9.6	8.8	9.1	8.6	8.5	8.8
including:								
pre-school	1.14	1.18	1.03	1.12	1.18	1.08	1.00	0.9
basic education	4.02	4.24	3.59	3.85	3.81	3.71	3.80	4.6
secondary special and vocational education,	1.50	3.40	3.93	2.83	2.98	2.81	2.80	2.3
higher education	0.55	0.50	0.48	0.48	0.45	0.45	0.44	0.4
other education institutions	0.53	0.54	0.57	0.47	0.58	0.49	0.42	0.5
Retraining and upgrading the level of teaching staff	0.06	0.04	0.05	0.06	0.06	0.07	0.06	0.1

Source: Calculations are based on data provided by Ministry of Finance of the Republic of Uzbekistan, July 2005.

In 2006, the SDF financed new construction and renovation of basic schools to the value of 200 billion sums (around $180 million), which is twice as much as in 2005. These renovated schools received equipment to the value of 53 billion sums in 2006 as compared to 34 billion in 2005.

In 2005 capital investment in the sector of secondary special vocational education made up 353.8 billion sums, and this amount is planned on an annual basis, including for 2009, the last year of implementing the program.

Box 3.6.
The Extra-Budgetary School Development Fund

Complementing budget allocations, the Extra-Budgetary School Development Fund (SDF) has been established to finance the National Program for Compulsory Basic Education Development for the period 2004–2009. This Fund has taken on a key role in funding education in Uzbekistan.

The SDF's revenue is drawn from three sources—the School Development Tax, contributions from local governments (khokimiyats) and other extra-budgetary contributions, including sponsorship from various entities. Commencing in 2005 the School Development Tax will be collected in the tax system as 1% of the sales revenue of all legal trading entities. The SDF constituted 10.4% of total education expenditure in 2005, and this proportion will rise to 24.2% in 2009. The winding up of the SDF in 2009 suggests that there could be a sudden drop in education expenditure for 2010 onwards.

Current the main objectives of the SDF are to accumulate sufficient funds to meet the priority upgrading needs, to finance the renovation of basic schools and to provide them with the required level of furniture, lab equipment, computers and sports equipment.

The SDF is managed by an Executive Office (Directorate) with three departments and 10 personnel members and is accountable to the SDF Management Council. The Management Council includes 13 council members and is headed by the Prime Minister. The Government places great importance on the adequate financing of this Program, and the presence of high ranking council members is designed to ensure a high level of financial accountability.

The SDF's revenues and expenditures are estimated in line with the development of the state budget according to the Law "On the Budget System". The new construction, capital construction and capital repair of schools are organized and financed at Regional (Oblast) level through the SDF Regional Special Accounts. Regional and Local (Rayon) Finance and Education Departments are responsible for financing the renovation and equipping of targeted schools. The organizational arrangements for the financing process are well designed in terms of the accumulation and distribution of funds.

Table 3.24.
School Development Fund Revenues and Expenditures

	Fact		Forecast		
	2005	2006	2007	2008	2009
Revenue, in million soums	162,615	247,969	360,950	495,700	569,572
Sources of Revenue (%):					
1. 1% School Development Tax	89	82	68	57	57
2. Contributions of Local Khokimiyats	10	9	5	4	4
3. Sponsorship and other extra-budgetary funds	1	9	27	39	39
Revenue, in million soums	133,603	254,111	364,227	495,700	569,572
Sources of Revenue (%):					
1. Building and repairs	75	79	72	71	70
Including:					
New construction	16	16	12	12	10
Capital reconstruction	35	40	39	39	40
Capital repair	20	20	19	17	17
Maintenance	4	3	2	3	3
2. Equipment	25	21	28	29	30
Including:					
Furniture	10	8	7	9	9
Lab equipment	10	9	16	15	14
Computers	3	2	11	3	5
Sports equipment	2	2	4	2	2

Source: Data provided by the Ministry of Finance of the Republic of Uzbekistan (2007).

Since the proportion of funding allocated to basic and secondary special vocational education as a share of GDP has increased significantly, there has been a small decline in the sectors of pre-school and higher education. Between 1998 and 2004 pre-schools were allocated less than 3% of the total education budget for capital investments. Pre-school education is the most vulnerable sub-sector because it has received relatively little investment over the past ten years. As a result, buildings and equipment have deteriorated and are now in urgent need of repair and/or replacement.

During the same period of time, only 8% of the total budget allocated to capital expenditures went to basic education but in 2005 the amount dramatically increased due to implementing the new target program (up to 23.4%).

Many higher educational institutions are in need of modern equipment, and the buildings need capital repair and maintenance.

There is a clear gap between the number of students enrolled at different levels of education and government expenditures allocated to maintain and develop them: for pre-school education institutions, secondary special vocational educational institutions and universities this gap is negative, meaning that the proportion of allocated funds is less than the proportion of enrolled students.

Table 3.25
Public Expenditure on Education by Sectors
(as % of total expenditure on education)

	Pre-school		Basic		SSVE		Higher	
	Uzbekistan 2005	OECD 2001	Uzbekistan 2005	OECD 2001	Uzbekistan 2005	OECD 2001	Uzbekistan 2005	OECD 2001
Proportion of education expenditure	7.4	8.0	78.9	67	10.2	1	3.4	2.4
Proportion of students enrolled	11.1	11.0	55.0	74.0	29.3	1	4.6	14

Source: Calculations are based on data provided by the Ministry of Finance of the Republic of Uzbekistan, July 2005, and on 2001 OECD data (Education at a Glance, 2005)

At the same time, the prioritizing of expenditure on capital projects necessarily created tensions in financing the broader education sector, including schools and secondary special vocational educational institutions.

Operational expenditures comprise of six major categories: salaries and social charges, meals, stipends, learning materials, office supplies, current repair and maintenance. In the 1990s the dramatic decrease of the real salaries of teachers resulted in negative phenomena such as an outflow of teachers, decline in quality and lack of incentives for students to study to be a teacher.

Before 2006 the government took measures to gradually increase salaries but these were not sufficient in terms of stimulating teachers' performance because the absolute monthly average teachers' salaries reached only 60–70% of the monthly average throughout the country and 40–50% of its level in industry.

Moreover, the inadequate level of teachers' salaries has resulted in such negative phenomena as informal parental expenditures on education. For example, ac-

cording to the 2002 World Bank Living Standards Assessment in Uzbekistan, approximately 10% of households report making unofficial payments or providing gifts to teaching personnel for their primary school aged children, 18% percent for their secondary school age children, and over 20% for their older children in higher education. The size of these informal payments is greater at the higher education level. It is notable that "poor" families contributed less than "non-poor" families in formal payments to institutions at all levels of education, but contributed more in informal payments than "non-poor" families for SSVEs. There were no informal "poor" contributions in higher education which suggests that they have limited access to this level of education.

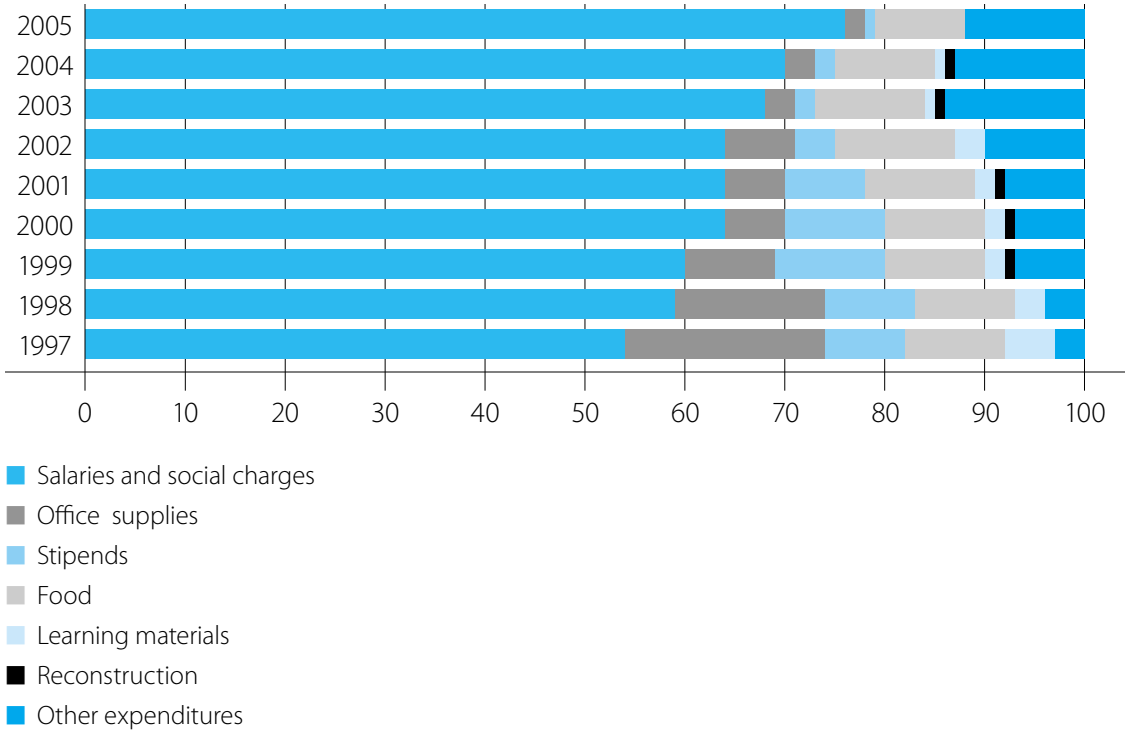
Table 3.26.
Informal Household Contributions Per Pupil on Education
September1999 – May 2000

	7–15 years		16–18 years		19–22 years	
	poor	non-poor	poor	non-poor	poor	non-poor
Average expenditures per pupil, in soum	528	568	3,369	2,277	0	3,271
Expenditures as % of household budget	3.1	12.8	19.3	17.5	0	28.0

Source: 2002 WB Living Standards Assessment. September 2000 Education Module, weighted* n<10

The gradual increase of salaries resulted in increasing the proportion of salaries of all employees in educational institutions in the total current budget from 54% in 1997 to 76% in 2005.

Chart 3.1.
Continuous Expenditure on Education by Categories



Source: Calculations are based on Ministry of Finance data, July 2005.

In 2006 within the Program for Basic Education Development measures were taken to significantly improve the incentive system for teachers and school directors. A teacher's salary was increased by up to 15% for after class work with pupils, and up to 25% for excellent performance and special contributions to increasing the quality of the education process. The Director's Fund was set up in each school to the tune of 15% of the total annual payroll in order to provide incentives for teachers. A special committee was established consisting of the most respected teachers of the school and parents in order to make decisions about the awards. During 2006, 43% of all teachers received additional incentive payments.

However, the increase in average salaries has not been accompanied by an adequate increase in the budget allocation for operational expenditures in education. The result is a significant disproportion and deficit of funds allocated to the current maintenance of all educational sectors.

The insufficiency of funds for current expenses leads to an accelerated depreciation of newly built or reconstructed buildings of the secondary special vocational educational institutions and schools. Also, due to the lack of funds public utilities are not paid in time and fully, school equipment is not repaired and teaching aids are not bought. These factors decrease the quality of the educational process.

Moreover, recently a large number of new educational establishments have been opened, which require additional funds to maintain. This makes the situation even worse. The government faces serious difficulties in trying to simultaneously solve the problems of capital construction, equipping newly opened educational establishments, raising the salary of teachers and covering everyday costs.

It is expected that after 2009 the situation will improve, when the capital construction and reconstruction of buildings will be accomplished in accordance with the adopted programs. Additional budget funds will be allocated with the aim of improving the maintenance of educational institutions.

Yet, in the present it is important to create a better methodological basis for a new system of financing educational establishments. Currently the budgeting system works according to the incremental principle which takes as its starting point the previous year's allocation, the result of which is an inefficient distribution of funds between educational establishments.

All general schools obtained the status of a legal body following the President's 26th February 2007 decree[1] relating to the introduction of the Treasury system in the country and with the purpose of rationally using budgetary funds. From now on general schools are financially autonomous units in the system of budgetary financing. In the past the financing of general schools was carried out through the local (rayon) departments of the education system, and as such there were no incentives for schools to carefully use their budget and extra-budgetary funds. Now financial autonomy allows general schools to effectively use their budgetary provisions, and to independently budget and implement these budgets. At the same time this opportunity entails a challenge—for schools to carry out the separate function of accounting which requires skilled workers in each school. Currently schools have a major problem with recruiting skilled accountants. This calls for professional training as part of the introduction of this Treasury system.

About 65% of total expenses in the educational sector are covered from local budgets, 22% from regional budgets and just 13% from the central budget. Since the education sector is mainly funded from decentralized local budgets, which

Box 3.7.
System of budget financing

The education sector is financed from the public budget, divided into three levels: central budget, regional budget and local budget. Higher education, educational establishments and academic lyceums under higher educational establishments as well as regional institutions providing teacher training are financed from the central budget. Vocational colleges and academic lyceums which are not under higher educational establishments are financed from the regional budgets. Local administration bodies mainly finance the current costs of pre-schools, specialized and general schools, while the biggest share of expenses on capital investment is covered from regional budgets.

Each local administration estimates its annual budgets on the basis of revenues and projected expenditures. Central government subsidizes the local budget deficit, usually by changing the percentage of local taxes or in the form of transfers from the central budget. Regional and local administrative bodies responsible for public education calculate the number of children expected to enrol in pre-schools, primary and secondary general, and vocational educational establishments for the next year. Also they estimate the cost of services to be provided. They forecast local tax revenues and any potential budget deficit. Local branches of the Ministry of Finance consolidate these local budgets and submit them to the Ministry of Finance (MoF), including any required allocations from the central budget.

Regions and localities prepare their draft budgets during the period July-August and submit to the Ministry of Public Education, which at around the same time prepares a macroeconomic forecast for the next financial year and consolidates all the expenditures, including the expenditures of the regions and localities. These documents are usually submitted to the MoF in mid-September. At the beginning of October the Ministry prepares a draft of the National Budget and submits it to the Cabinet of Ministers for approval. The Cabinet of Ministers considers the budget draft and introduces amendments within a month period, and after this the final draft of the budget is submitted to the Parliament. Parliamentary committees consider the submitted budget drafts and submit them to Parliament for approval. The National Budget is approved by the Parliament in November-December each year.

in turn depend on local tax collection, there is a problem related to the disproportion of local financing. It significantly affects the quality of education across different localities and regions. The responsibility of the local administration for the financing and management of pre-school educational establishments and primary schools can be limited by the inadequate finance allocations.

Extra-budgetary financing of the education sector. Since gaining independence, the government of Uzbekistan has undertaken some measures to diversify the sources of financing education. One type was for educational establishments to attract additional funds such as fees paid by parents, donations from citizens, local communities and other sponsors, as well as income received from renting out unused buildings, equipment, as well as providing extracurricular training courses. All universities charge tuition fees for those students whose entrance test results were insufficient to receive a state grant. During 2000–2004 the average amount of revenue for education raised from such sources was 2% of GDP annually

The ministries administering the education sector established extra-budgetary funds for official contributions. Initially they were allowed to use such funds to improve the material and technical base of the institutions, implement IT projects and encourage personnel by providing bonuses. Prior to 2003 the system of extra-budgetary financing was not strictly controlled, except for the use of the funds. Various ministries could attract and use extra-budgetary funds without detailed re-

porting about their usage and management. Starting from 2004 all governmental agencies, including the ministries coordinating the education sector, were to report to the MoF on the sources and use of extra-budgetary funds. The extra-budgetary funds should be used strictly in accordance with the program: to further improve the infrastructure and facilities, encourage the staff and cover the costs of public utilities. They are to submit quarterly reports to the MoF with the aim of informing them about the usage and management of extra-budgetary funds. When cases of non-targeted allocation of funds are revealed, funds are immediately shifted to the central budget.

Schools were also allowed to be engaged in some types of activities to earn additional income. By extrapolating such trends it is possible that such activities could contribute up to 3 billion soum a year (in 2005 prices) to the general secondary education system. Different regions follow different instructions on how to use the additional income received by schools. Many schools have the right to use the money at their own discretion.

Estimation of trends and problems in the system of education financing. There are a number of problems related to the transition period and the impact of economic difficulties, and the consequent dramatic drop in resources allocated to the education sphere, especially before 2000:

- Before 1999 public expenditures on capital investment into the education sector had sharply declined;
- up until 2001 the total real public expenditure for education had been declining (due to the improved situation over the last 5 years the previous level has been achieved);
- the share of the budget allocated to pay the salaries of teachers and technical personnel grew considerably and remains high as a percentage of the total at the expense of other current expenses. Yet, salary levels in education are still low if compared to other sectors;
- expenses related to the creation of teaching aids and the purchase of required materials decreased even further;
- operating expenses dropped significantly, including the budget to buy required materials, as well as running costs;
- expenses related to the training of personnel and teachers declined.

Major problems related to budget expenditures on education faced by the country are currently:

a) inefficient use of available resources (for example teacher-pupil ratios, the small but growing ratio of pupils per class, the low level of the real teacher's load, surplus technical personnel who do not participate in the teaching process, and the extensive use of out-of-date infrastructure and equipment;
b) increased regional disparities in financing and in access to education which affects needy families in rural areas;
c) reduced quality of educational services, especially in general secondary education;
d) discrepancy between the set of educational outputs and the needs of a market economy;
e) growth of overheads covered by parents to support the inadequate funding.

Since the share of GDP allocated for education is so high, investing more is a remote possibility.

At the same time, thanks to measures undertaken by the government in recent years, expenditures in the education sector have grown during the last 5 year period both in real and in nominal terms. The government continues to execute its responsibilities related to the educational sector, which is clearly seen from the high level of investment in this sector.

Yet, the need for constant real increases in the current costs in the education sector creates serious problems for the long-term financial stability of the education sector. The obvious option is to achieve higher efficiency in the use of the allocated funds.

On-going pressure on the operational financing of secondary education will lead to an increase in tuition fees paid by parents with the aim of supporting their basic activities. However such contributions will increase the gap between the well-off and needy families. Also, it will make access to higher education for children from needy families more difficult. The education policy related to the distribution of budget funds should be reconsidered with the aim of balancing out the needs of various expenditure categories.

Secondary education has always had a shortage of funds, which results in the deterioration of school buildings, the inadequate provision of teaching materials and a constant lack of basic laboratory and IT equipment. Though this sub-sector receives the biggest budget allocations compared to the whole education sector, per capita funding is still the lowest. One of the ways to settle this problem is to introduce per capita funding, based on the funds available in the central budget.

Reporting in the system of education does not provide sufficient information in order to determine how efficiently the available funds are used and how efficient various sectors are. The system of education financing does not provide sufficient resources to cover the additional costs of large-scale educational programs aimed at the renovation of equipment and purchase of new equipment for primary and secondary schools. Such issues, along with the future of the School Development Fund after 2009, need to be carefully considered and resolved. A stable system is required to finance the operational costs as well as costs related to the renovation of equipment, and this system should be tested before 2009 in order to ensure a smooth transition from School Development Fund financing to the operational system of financing.

3.3.3. Overview of external assistance to the education sector of Uzbekistan

Complementing the state budget and private investment, development assistance by international donors and financial institutions plays an important role in financing the education sector of Uzbekistan. In the period January 2000 – July 2007 alone, 122 assistance projects were implemented with allocations totalling over $1 billion.

More than 90% of external assistance was provided as loans and credits, and 9% as grants.

Most of the assistance was provided by multilateral donors (952 million USD or 91.2%) and then 87.0 million USD (8.4%) was provided by bilateral donors and 4.1 million USD (0.4%) by international NGOs.

Examining the role of development assistance from the perspective of the overarching nationalized MDGs shows that 26.8% (or 280.6 million USD) of the total loans, credits and grants were targeted at achieving MDG 2—Improving the quality of education in primary and secondary schools. This is a much larger proportion than for any of the other MDGs.

Chart 3.2.
External Assistance to the Education Sector by Types of Funding for 2000–2007 (in USD)

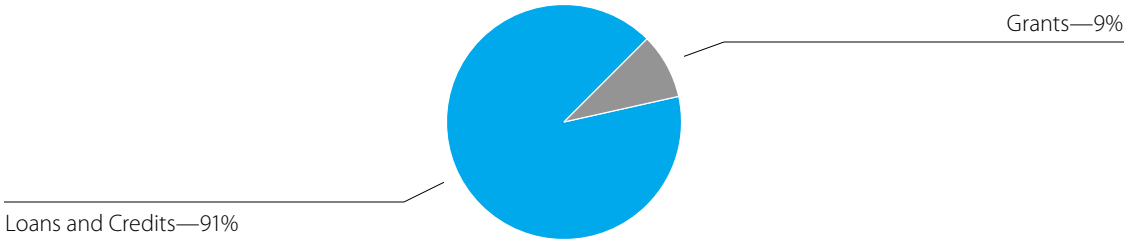


Chart 3.3.
External Assistance by Donor Types in 2000–2007 (in USD)

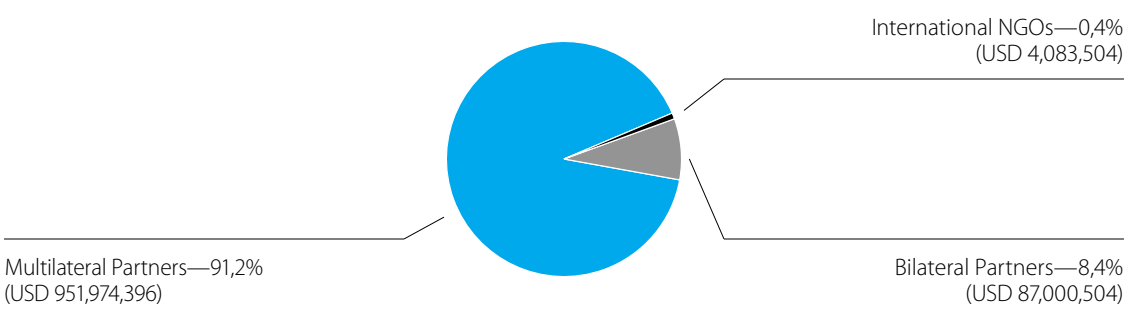


Table 3.27.
Structure of development assistance from the perspective of the overarching nationalized MDGs

Nationalized Millennium Development Goals (MDGs)	Amount (in USD)	%
Beyond MDGs	749,261,494	71.748%
MDG 2—Achieve universal primary education	279,953,000	26.808%
MDG 8—Uzbekistan and global partnership for development	8,988,300	0.861%
MDG 1—Improve living standards and reduce malnutrition	5,007,332	0.479%
MDG 7—Ensure environmental sustainability	957,065	0.092%
MDG 3—Promote Gender Equality and Empower Women	74,312	0.007%
MDG 6—Combat HIV/AIDS, tuberculosis and other diseases	50,000	0.005%
Total	**1,043,061,503**	**100%**

The assistance was divided up amongst the sub sectors of education as follows: 73% was directed to secondary schooling, 10.7% to policy and planning, 10.4% for vocational, technical and managerial education and training, 4.2% for higher education, 1.4% for pre-school and primary schooling, and 0.3% for informal education (including literacy and adult basic education).

Table 3.28.
Distribution of development assistance by educational subsectors

Sub sectors of the Education Sector	Amount (in USD)	%
Sector policy and planning	111,214,000	10.65%
pre-school and primary schooling	15,033,000	1.44%
Secondary schooling	764,772,300	73.23%
Higher education	43,738,551	4.19%
Vocational, technical and managerial education and training	106,499,443	10.20%
Informal education (includes literacy and adult basic education)	3,034,209	0.29%
Total		**100%**

Over 20 donor organizations provided assistance for the development of the education sector during 2000–2007. (Annex 2) The leading agency in committing funds into the sector is the Japanese Bank for International Cooperation (61.6%). The second biggest partner is the Asian Development Bank (25.3%), third the Government of Japan (3.2%), and fourth is the Government of India (2.1%). Other leading contributors were UNICEF (1.6%), KFW, the EC TEMPUS Program and JICA (the share of each of these donors exceeds 1%).

CHAPTER 4.

AN EDUCATION SYSTEM FOR A BETTER FUTURE

4.1. IDENTIFYING FUTURE DEMANDS FOR EDUCATION

As in many other countries during the transition period, Uzbekistan faced serious problems in the field of education during the initial years of independence. It was necessary for the country to undertake Herculean efforts not to lose the positive achievements of the previous period, and at the same time to escape the negative aspects of the past heritage and the difficulties related to the transition period.

In 1996, Uzbekistan was the first of the countries of the CIS to begin institutional reforms in the educational sector. These were based on the new concept of lifelong learning, on the close connection between education and the labour market in order to meet its demands through creating a fundamentally new system of secondary special vocational training, as well as keeping the system of a 12 year general free primary and secondary education.

During 1997–2006, Uzbekistan annually spent an average of 9–10% of its GDP and 23–39% of the state budget expenditures on its educational system. As a result of the reforms the country had the following by 2007:

The system of a free 9 year general school education was getting stronger. It has provided education for 100% of school age children. In this sector there are 9,800 schools and 5,707,000 pupils taught in them. 451,000 teachers work in the system. Between 1997 and 2006 81 new schools were built, 670 schools were refurbished, and 968 schools were extensively repaired. Over 117 schools for 39,600 pupils were newly built, refurbished and repaired between 2004 and 2006 with the implementation of the Program for Basic Education Development.

During 2007–2009, 185 new schools for 68,000 students will be constructed, 1,639 schools for 563,000 students will be renovated, and capital repairs will be made in 2,371 schools and ongoing maintenance will be carried out in 1,229 schools. 6,200 schools will be provided with computer equipment, 4,800 schools with sports equipment, and 56.3 million textbooks and learning materials for basic schools will be published;

The system of a free three-year general secondary special vocational education. In this category there are 1,052 well-equipped vocational colleges and academic lyceums for 624,200 students with 1,075,000 children taught in them and 67,330 teachers and 8231 training officers employed. During 2007–2009, 591 new vocational colleges and 60 academic lyceums for 380,000 students will be constructed. In 2009 the program for upgrading the facilities of general secondary special vocational training will be completed;

Note that UNESCO has made the decision to study and share the positive experience of reforms in the system of professional training in Uzbekistan.

The system of higher education which includes 64 higher educational institutions, of which 20 are universities. Higher educational institutions annually accept an average of 64,000 people on a competitive basis. There were 286,000 students taught during the 2006–2007 academic year. 23,400 teachers work in higher educational institutions of which 30% of them have 'candidate' degrees and 6.5% are doctors of sciences;

The system of postgraduate education including master's programs and 'candidate' and doctoral postgraduate studies. The total number of students in the postgraduate sub-sector totalled 2,200 in 2006;

Annual increases in numbers at all levels of education that maintains the country's high level of literacy and education of the population;

The mature system of preparation of textbooks and manuals for schools, secondary special vocational educational institutions, and also the printing industry for publishing textbooks and manuals;

The mature industrial base for manufacturing and providing educational institutions with furniture, lab equipment and different kinds of equipment for vocational training.

At the same time, Uzbekistan has had to respond to real challenges concerning the further implementation of reforms in the education sector.

Box 4.1.
Evaluation of reforms in the educational sector by Pak Hvan, Professor of Seoul Polytechnic College

"The National model of pre-professional training in Uzbekistan has been recognized in the world community, and it deserves comprehensive study. The National Programme for Personnel Training covers all stages of continuing education, and it applies the principle of advanced educational systems—lifelong learning. However, the global significance of the program, in our opinion, is that it will be a major factor in a quality market in social and economic development of the Republic in the new century."

Source: A new time—and studying in a new way. National Educational Model: Decade of aspirations and achievements. "Pravda Vostoka", 29th May, 2007.

4.1.1. The Economy's Demands on Education

As has been mentioned in the previous sections of the Report, Uzbekistan's economic reforms radically reshaped the requirements for the level and quality of the population's education.

At present, it is quite obvious that the economic structural transformation taking place calls for both well-educated and qualified personnel and for people who have been trained to work in modern industrial enterprises to be available in the labour market.

However, in the near future it will not be sufficient for Uzbekistan to develop in the algorithm of "catching up development" but should develop as a country capable of rising to a higher level of added value in the fields of innovation and scientific and technical achievements.

The economy that is going to be a 'knowledge based economy' requires of the education sector:

a) well educated engineers and researchers who are constantly being trained, and who can: make innovative scientific and technical discoveries; be open to further self-development, to gain knowledge and introduce new things;
b) highly skilled managers who can manage production development according to the current requirements;
c) highly skilled workers who can operate state of the art equipment and use modern technologies.

To perform these tasks, it is necessary for reform and the education sector to focus on the following:

1) Significant improvement of knowledge in the natural sciences taught at schools and secondary special vocational educational institutions: mathematics, physics, chemistry, and biology.

   To achieve these objectives, it is necessary:
   - to establish a system for retraining and continually upgrading the professional skills of school teachers in the specified knowledge areas;
   - to develop a system within which the best teachers of the country are able to share their experiences in teaching these subjects;
   - to establish the system for working in groups according to the interests in the specified subjects and to develop relevant additional manuals to be used by the most gifted students in extracurricular education;
2) Establishment of a system of applied training in the natural sciences at all educational levels to make education more relevant to the training of specialists in line with the requirements of the economy and current scientific and technical trends. According to one poll only 14.2% of school graduates want to study in engineering departments, although it is now critically important to prepare specialists in these areas so that the country will be able to make technological breakthroughs in the future.

Textbooks on mathematics, physics, chemistry and biology should be reviewed again in order to ensure that they provide both theoretical and applied education through the system of tasks and examples related to the real needs of the economy and everyday life.

3) The selection system and provision of special education for the most gifted and talented youth in the field of the natural sciences. The academic lyceums specializing in the natural sciences have been established to achieve this objective. They are located in the cities that have good schools teaching these subjects, and gifted students are enrolled in them on a competitive basis irrespective of their place of residence. Competition is provided in the form of written tests. Winners and prize-winners of regional and national school Olympiads on natural science subjects should be given automatic places. These students must be provided with free accommodation and stipends. The most qualified teachers, including leading scientists from higher educational institutions, must teach in these lyceums. It is necessary to establish a system that gives incentives to teachers, including those related to their students' achievements.
4) Increasing the number of specialized vocational colleges established by large industrial enterprises and companies (automobile manufacturing, oil, gas, chemical, petrochemical and oil-and-gas industry, electric power, metallurgy, aircraft construction, etc.) to train specialists in line with their own needs. Special programs and textbooks for these colleges also need to be developed, as should a combi-

nation of training and paid internships at these industrial enterprises. There should also be compulsory employment of graduates in the relevant industries.

5) Establishing a system of full time pre-professional education and instruction by correspondence in higher educational institutions during the last year of training in engineering for the students on probation in large industrial enterprises. There is a need to establish a system of full time pre-professional education and instruction by correspondence in higher educational institutions for practitioners who have worked at the industrial enterprise no less than five years and demonstrated ability in engineering.
6) Expanding the practice of establishing branches of leading foreign higher educational institutions in the country, especially in the areas of the natural sciences and engineering subjects.
7) A reconstruction of the system of design and developmental bureaus (KB and OKB) under the large industrial enterprises, involving the most gifted and talented students from higher educational institutions in their activities. There is a need to exempt from taxation the funds of the industrial enterprises allocated to establishing KB and OKB and funding their activities.
8) Establishing the system of continuing education and upgrading professional skills for working citizens. Although there are some institutes for upgrading professional skills, the integral system which would ensure the upgrading of professional skills of employees at all levels, at each enterprise, irrespective of positions held and type of ownership of the enterprise, is not yet in place.

To achieve these objectives, it is necessary to liberalize the process of establishing private business schools, different centres for training and retraining, in order to establish an accessible and competitive educational system. There is a need for tax privileges for established business schools and centres for specialists' training and retraining that should depend on quantitative and qualitative performance indicators.

9) To establish a fundamentally new system of academic research. The activities related to academic research and teaching should be distinguished in terms of payment. It is recommended to involve as many students, undergraduates, postgraduates and doctoral students in academic research. The income earned by people engaged in academic research should be exempted from all kinds of taxes.
10) To make information, educational and scientific resources easily available to all students. To achieve this objective, it is necessary to expand and considerably improve the teaching of foreign languages. The priority focus must be on the foreign languages such as English and Russian that are used in a considerable body of educational, scientific and technical literature. The libraries must be given the opportunities to purchase the most important educational and scientific literature, including the resources available in the Internet that require payment.

4.1.2. Society's and Citizens' Demands on Education

Society desperately needs well educated and harmoniously developed people. In Uzbekistan free education is provided and is compulsory for all, and it is creating the foundation for reaching high levels of literacy and developing all members of society.

Although basic secondary and vocational training is easily available for all, the most important objective for society should be to provide for the population unlimited access to education:

1) This is an opportunity for poor people to escape their poverty. Although in the country there is a law on compulsory secondary and vocational education, it is difficult for poor families, and especially for families with many children, to send their children to school because they have to buy them textbooks and other educational accessories, school uniforms and shoes, and provide them with sportswear and special clothes for vocational training.

Since 1996 the government has continued implementing programs for providing children from poor families with school uniforms and shoes. First grade students are given free school educational accessories and school bags. Moreover, there are programs for borrowing textbooks from school libraries on a rental basis.

However, similar programs for children who study in vocational colleges and academic lyceums are not yet in place. Poor families face serious difficulties if they want their children to be trained in vocational colleges or lyceums that are located in other places so that they have to live away from home. In this situation it is necessary to pay additional transportation and meal costs since it is always much more expensive to eat out than to eat within a family.

To solve the problems of needy families who live far away from vocational educational institutions (schools, colleges and lyceums) it is recommended to do the following:

- from 2009, to gradually provide all schools, vocational colleges and lyceums with school buses to transport children from home to educational institutions and back after the large scale expenditures for improving the facilities of educational institutions are completed;
- to increase the number of vocational colleges in rural areas;
- to introduce a system of free meal coupons for children from needy families who live in student hostels during their training in vocational colleges and lyceums. If canteens and snack bars are given some tax exemption such funds could be utilized to achieve this objective;
- to provide for all students free access to computer services at schools, vocational colleges and lyceums;
- to introduce a system of sponsors' stipends for successful children from needy families to buy textbooks, learning materials and sportswear;
- to establish a system for giving students of vocational colleges and lyceums an opportunity to work as paid interns in relevant enterprises during the summer vacation, with the money allocated for these students' wages given exemption from all taxes, including social security and income taxes.

To solve the problem of needy families, whose children are enrolled in higher educational institutions:

- to introduce coupons for students from needy families to provide them with free meals in student canteens. Provided student canteens are given some tax exemption, their savings could be utilized to achieve this objective. Students' Committees would be responsible for giving these coupons to students;
- to establish a system for giving university students an opportunity to work as paid interns in relevant enterprises during the summer vacation with the money allocated for these students' wages given exemption from all taxes, including social security and income taxes;
- to increase the number of educational grants given by enterprises and other sponsors to the most gifted students who study on a fee paying basis. To intro-

duce a system of benefits and social and moral incentives for these enterprises and non-governmental organizations;
- to involve more students in paid scientific researches conducted by higher educational institutions and in research projects;
- to establish a system for creating part-time jobs for students from needy families within higher educational institutions such as in libraries and other support work.

2) It is an opportunity for girls to overcome gender inequality. In Uzbekistan there is no legal or public discrimination against admitting girls to educational institutions. However, quite often parents do not assist them, and sometimes they do not let girls study in higher educational institutions because girls get married earlier than boys of the same age according to the local customs and mentality. Very often they get married at the age when they can enter or study in a higher educational institution. If a girl is admitted to an educational institution on a fee paying basis, it is frequently an obstacle to her study as parents prefer to spend the money for training their sons who will stay with them rather than for their daughters who will 'leave anyway because they will marry into other families'.

Some parents do not wish to let a girl study far from home because they are afraid of the difficulties which she might encounter living in a hostel. There are many families in which the parents think that the destiny of a woman is to look after her family and children, therefore compulsory secondary education is enough for her to raise children and manage a household.

To overcome these common obstacles it is necessary:
- to carry out a large-scale educational campaign aimed at promoting girls' opportunities for continuing education. It is pertinent to develop a special program 'increasing opportunities for girls to receive a higher education' within public organizations such as 'Kamolot';
- to allocate special additional government grants for girls to be enrolled in higher educational institutions if they have relatively high scores but are not high enough for being admitted on a scholarship basis. Between 5–10% of the overall number of grants allocated to higher educational institutions should be used in this way;
- to allow enrolment of girls in higher educational institutions on a fee paying basis if they don't have the necessary score to be admitted on a scholarship basis but they have over 40% in the test;
- to draw up a flexible academic and examination schedule for young women who study in higher educational institutions and bring up children under two years old or to provide them with academic leave with automatic resumption of studies upon their written request.

3) It is an opportunity for preschool age children to prepare for school and to prepare for formal group education. The number of children's preschool institutions has fallen significantly in the country. In many cases this was caused by low attendance, high payment for enrolment, thus creating an incentive for mothers to look after their children at home. However, preschool education is very important, especially in preparation for school. The problem can be solved if small preschool institutions are established for children of 5–6 years old only, where they are prepared for full schooling during the first half of the day. This approach will considerably reduce the government's expenses for children and will raise the lev-

el of attendance of such educational institutions. This will also solve the problem of how to prepare all children for school education.

4) It is an opportunity for working citizens to improve their qualifications and to be retrained.

To achieve this objective it is recommended:

- that all large enterprises must pay for training their workers. It is recommended that they allocate 2–5% of their expenditures for this and in doing so take advantage of tax exemptions;
- to liberalize the process of establishing and accrediting private business schools and centres for upgrading the professional skill of workers, including higher educational institutions, vocational colleges and academic lyceums;

Along with the objective of providing unlimited access to education, there is a more pressing issue for society at the moment—the quality of education.

An analytical survey carried out by "Izhtimoyi Fikr" in 2006[32] showed that 57.1% of school graduates thought that the knowledge gained at school was insufficient for being admitted to higher educational institutions. 60.9% of the young people interviewed said that they would definitely hire tutors to train them for the university entrance examinations, and another 18.6% of school graduates thought they would be very likely to seek such support. It means that almost 80% of graduates who have decided to enter universities after finishing schools actually think that the school knowledge is not sufficient for them to continue their education.

Another public-opinion poll[33] shows that only half of the people interviewed in Bukhara, Kashkadarya and Samarkand oblasts are satisfied with their educational institutions. These indicators are lower than in other oblasts, and the indicators in Syrdarya oblast (28.3%) and Tashkent (23.1%) are the lowest ones in the country. Only 49.4% of the interviewed people think that the level of education has increased during the years of independence Over 19% of the population thinks that the country's level of education has even decreased since independence.

About 80% of the interviewed school graduates think that bribery takes place in universities, with 54.4% believing that the phenomenon is widespread. Consequently, the students do not have the motivation to be well-educated since they can still get good scores without knowing the subjects.

To radically change the situation related to the quality of education it is necessary:

1) To accelerate the process of increasing teachers' salaries at all levels of the educational sector so that the prestige of the profession is high, and the people who have chosen teaching as their profession should meet certain requirements. The growth rates of average teachers' salaries at all levels of the education sector must exceed the growth rates of wages throughout the country to reduce the existing gap.
2) To establish a system of incentives to involve leading practitioners in teaching, especially in the areas of economics (economy, finance, accounting etc.), management (organization and production management, marketing etc.), law and engineering. This will ensure considerable improvements in the quality of education and will make it more relevant to the needs of practical life.
3) To establish a system for sharing best practice at all levels of the education sector, meaning to widely disseminate and promote the best experience. To

32 The Survey «Graduate-2006»
33 The Survey «Uzbekistan: 13 years of Independence»

establish regional level joint methodological bodies, involving volunteers and overseen by the local universities, to effectively share best practice related to the subjects taught at schools and secondary special vocational educational institutions.

4) To expand the social incentives and recognition of teachers' work. To produce feature films and documentaries which heighten the recognition of teachers' professional activities and their contribution to society. There is a need to organize local, regional and national competitions to identify the best teachers in each subject. It is recommended to widen the practice of rewarding the best teachers with titles such as 'Honoured Teacher' and 'National Teacher'.
5) To take drastic measures against corruption in higher educational institutions involving both law enforcement bodies and the public including organizations like 'Kamolot', Students' Councils and women's non-government organizations.
6) To review curricula and training programs so that the number of academic subjects and examinations in each academic term are considerably reduced. Currently students are overloaded and this negatively affects their ability to gain a deep knowledge in their chosen specialization. There should not be more than four academic subjects each term. There is a need to increase the number of optional subjects offered subject to enough students being enrolled in these courses.
7) Raise the prestige level of quality education, with prizes on offer such as giving the best students an opportunity for employment in the most prestigious organizations and companies in the country.

4.2. MEETING THE FUTURE DEMANDS FOR EDUCATION

4.2.1. Balanced management structure

It is critically important to improve educational management in order to implement reforms in the education sector. As was mentioned in the previous sections, in Uzbekistan the education sector is under the management of two ministries and one specialized Centre. In the regions there are local and regional departments that are responsible for school education management, and there are also regional departments for managing secondary special vocational training.

To further improve the education management system in the light of international experience, in our opinion it is necessary to balance out centralized and decentralized management of the education sector. It is recommended to gradually bring about changes in the system of educational management, including the following:

- Merging the Ministry of Public Education and the Ministry for Higher and Secondary Special Education into one Ministry of Education.
- This new Ministry of Education should be responsible for pre-professional education and in-service training of teachers, recruitment and certification, development and approval of school curricula and textbooks, and also for curricula and textbooks for secondary special vocational educational institutions.
- This Ministry of Education should also be responsible for issues related to students' enrolment in higher educational institutions on a fee basis.

- This Ministry of Education should be responsible for issues related to the accreditation of private educational institutions, primarily business schools and also private preschool institutions, schools and higher educational institutions.
- Providing more opportunities for developing private educational institutions, if they meet the requirements established by the Ministry of Education.
- School Parental and Trustee Councils must be empowered to more actively participate in decision making particularly in how to spend funds and also to offer incentives to teachers and students.
- University Scientific Councils must be more significantly empowered in the areas of development and approval of training programs and plans, development and use of textbooks and learning materials.
- University Trustee Councils must be empowered to more actively participate in decision making particularly in how to spend funds, for example to offer incentives to teachers and to give additional grants to students from needy families.

4.2.2. Developing Training Programs for the Future

Training programs are very important for the quality of education. In order to improve them, it is necessary:

- to ensure the continuity and compatibility of the curriculums of training programs for all educational levels—from preschool educational institutions to training in postgraduate courses;
- to develop and introduce training programs for preschool education for 5–6 year old children who attend children's preschool educational institutions on a part-time basis (during the first half of the day);
- to make changes in the current school training programs through increasing the number of students studying the natural sciences;
- to ensure the compatibility of the Classifier of professional training areas with secondary special, vocational and higher education and the National Classifier of occupations of workers and employees. To make changes in the training programs for vocational colleges in line with the modified Classifier of professional training areas;
- to ensure better consistency between the training programs at all educational levels with the requirements of real life. Training of the trainees from vocational colleges and universities at the relevant enterprises must be provided on a compulsory and fee paying basis;
- to ensure the integration of basic and further education in training programs to better perform academic and educational tasks. To approve the areas, types and forms of additional education based at secondary schools, vocational colleges, lyceums and higher educational institutions;
- to reconsider university training programs in terms of radically reducing the number of subjects that are studied during one term. To ensure in-depth study and practical training of the subjects included in training programs.
- to include in university training programs the compulsory involvement of students in the research and innovation carried out by universities ;
- to regularly update and improve the content of training programs and teaching material regarding modern achievements in science and technology.

4.2.3. Education Financing Must Be a Rational Combination of Public and Private

Education is of great importance for society, therefore it is imperative to make a clear decision that the state should incur the majority of operational expenses. There is no doubt that Uzbekistan's basic secondary and secondary special vocational training must be financed by the government. Family expenses for these kinds of education can be limited to items such as buying textbooks and learning materials, clothes, and transport, and they can spend money to pay for additional educational services (such as individual or group tutoring) but even then combined together these place a heavy burden on many families with low and even average incomes.

At the same time, after strengthening the country's economy and completing the programs for establishing modern facilities in schools, vocational colleges and academic lyceums, more money should be available, therefore it will be important to consider the following issues related to the government financing of education:

- compulsory preschool education for children of 5–6 years during the first half of the day to prepare them for schooling;
- allocating additional grants for girls to be enrolled in higher educational institutions, if they do not have scores high enough for being admitted on the grant basis (this allocation should make up 5–10% of the total number of grants allocated to each higher educational institution);
- substantial increase of teachers' salaries to motivate them in their work;
- increasing the funds allocated to the maintenance of the facilities of educational institutions.

At the same time, it is necessary to establish new principles of education financing—namely:

- budgetary funds must be allocated to all levels of education on a per capita basis;
- financial bodies must directly allocate financial resources to educational institutions, to avoid financing through educational management departments;
- put in place the treasury principle of accounting and control over spending funds allocated to educational institutions;
- using savings made from reducing the number of subjects taught in higher educational institutions to increase teachers' salaries, and the number of academic hours in the classroom must be reduced.

At the same time as increasing the amount of society's resources allocated to education, it is necessary to invest the additional resources of private individuals and companies. It is high time to liberalize the process of establishing private business schools, centres for training and retraining personnel, private kindergartens, schools and higher educational institutions. The Education Management Bodies must exercise strict control over private educational institutions to ensure that they come up to standard.

There is no other alternative than to establish a progressive system of education that is able to meet the current demands. It must be said that a great deal has already been done in the country. It is difficult to find another country having gone through the difficult process of transition that has managed to allocate as much funds to the reform and upgrading of its educational facilities. This is the initia-

tive of the President and each annually approved state budget is clearly focused on the priority of education.

Anyone who takes the opportunity to travel throughout the country would be pleasantly surprised at how many modern buildings now house the new types of educational institutions—vocational colleges and academic lyceums. They now decorate many residential areas of the country, not only providing children with basic education but also vocational education.

Uzbekistan is the first country to have started improving school buildings and facilities. There was a lot of catching up to do because for many decades there had been little construction and renovation of school buildings, or provision of new state of the art educational equipment. However, the country aspires to implement all these things in just five years. It is a pleasure to see children's eyes, when they happily sit down at new school desks, use modern learning materials and equipment, and they understand that the country greatly values their education.

However, much more should be done. And this Report, which has analyzed the country's achievements and difficulties in developing education, together with the new goals and challenges, is a small contribution to the future development of education.

ANNEX 1

MAJOR REGULATORY AND LEGAL ACTS GOVERNING THE EDUCATION SYSTEM IN UZBEKISTAN

1. Constitution of the Republic of Uzbekistan.
2. Law of the Republic of Uzbekistan 'On Education' and 'On the National Program of Personnel Training'.
3. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 5, dated 05.01.1998 "On the Elaboration and Introduction of National Educational Standards for the System of Continuous Education".
4. Resolution of the Cabinet of Ministers of The Republic of Uzbekistan # 77, dated 24.02.1998 "On the organization and management of academic lyceums and vocational colleges".
5. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 204, dated 13.05.1998 "On measures aimed at organizing secondary special vocational education in the Republic of Uzbekistan".
6. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 400, dated 4.10.2001 "On measures aimed at improving the system of teacher training for secondary special vocational education".
7. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 400, dated 16.10.2000 "On approval of National Educational Standards for secondary special vocational education".
8. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 341, dated 16.8.2001 "On creation of a new generation of textbooks and teaching materials for the system of secondary special vocational education".
9. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 253, dated 12.06.2001 "On measures aimed at improving the structure of secondary special vocational education".
10. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 338, dated 14.08.2001 "On measures aimed at further development of the infrastructure and facilities of academic lyceums and vocational colleges".
11. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 473, dated 29.10.2003 "On additional measures ensuring the gradual transition to general secondary and secondary special vocational education".
12. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 200, dated 06.06.2002 "On measures aimed at further developing computerization and introducing information and communication technologies".
13. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 342, dated 27.07.2006 "On perfection of the activity of the Center of Secondary Special and Vocational Education under the Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan".

14. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan #PP-381, dated 20.06.2006 "On organization of information and library facilities in the Republic of Uzbekistan".
15. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan #PP-427, dated 27.07.2006 "On measures aimed at further education of graduates of general schools at academic lyceums and vocational colleges".
16. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 25, dated 16.02.2006 "On further improvement of the system of teaching training".
17. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan #PP-325, dated 17.04.2006 "On measures aimed at accelerating the development of the service sector in the Republic of Uzbekistan".
18. Regulation on extracurricular establishments (Annex # 2 to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 59, dated 18.02.1995).
19. Regulation on pre-school education (Annex # 1 to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 59, dated 18.02.1995).
20. Regulation on children's homes (Annex # 3 to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 59, dated 18.02.1995).
21. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 109, dated 11.03.1998 "On the creation of a Department supervising the quality of personnel training, certification of teachers and educational establishments under the National Test Center".
22. Decree of the President of the Republic of Uzbekistan # ПП-362, dated 31.05.2006 "On additional measures aimed at improving the system of textbook provision for general schools".
23. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 548, dated 22.11.2004 "On the program of publication of textbooks and teaching materials for general schools in 2005–2009".
24. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 187, dated 04.05.1998 "On measures aimed at implementing the project "Improvement of the system of textbook and training aids publication for general schools".
25. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 104, dated 31.05.2006 "On measures aimed at implementing the project "Construction of and equipping general schools of the Republic of Uzbekistan" partly funded by the Islam Development Bank".
26. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 493, dated 21.10.2004 "On the program of providing general schools with furniture, modern school facilities and lab equipment, computers and sports equipment for 2005–2009".
27. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 352, dated 19.07.1999 "On additional measures aimed at efficient usage of general school premises".
28. Order of free supply of a set of stationery to 1st form pupils (Annex # 1 to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 409, dated 20.08.1997).
29. Order of supplying pupils of primary schools from needy families with a set of winter clothes (Annex # 2 to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 409, dated 20.08.1997).

30. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 409, dated 20.08.1997 "On additional measures to improve the living conditions of teachers and schoolchildren".
31. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 321, dated 09.07.2004 "On measures to implement the National Program of School Education Development for 2004–2009".
32. Regulation on the formation and use of financial funds of the extra-budgetary School Education Fund (Annex # 3 to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 263, dated 07.06.2004).
33. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 263, dated 07.06.2004 "On measures to organize the extra-budgetary School Education Fund".
34. Decree of the President of the Republic of Uzbekistan # P-3431, dated 21.05.2004 "On the National Program of School Education Development for 2004-2009".
35. Decree of the President of the Republic of Uzbekistan # P-1910, dated 19.02.2004 "On Measures to prepare the Program of School Education Development for 2004–2008".
36. Regulation on the Organization of Continued Study for Graduates of 9th forms in 10-11th Forms at Educational Establishments Providing General Secondary Education (Annex #2 to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 473, dated 29.10.2003).
37. Regulation on General Education in the Republic of Uzbekistan (Annex #1 to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 203, dated 13.05.1998).
38. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 203, dated 13.05.1998 "On Organization of General Secondary Education in the Republic of Uzbekistan".
39. Regulation on High Schools (Annex #2 to the Resolution of the Cabinet of Minister of the Republic of Uzbekistan # 440, dated 21.11.1995).
40. Regulation on General School in the Republic of Uzbekistan (Annex #1 to the Resolution of the Cabinet of Minister of the Republic of Uzbekistan # 440, dated 21.11.1995).
41. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 440, dated 21.11.1995 "On Approval of regulatory documents on educational establishments".
42. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan # 20, dated 10.02.2006 "On approval of the Regulation on the recruitment of teaching staff in the Higher Educational Institutions on a competitive basis"

APPENDIX 2

LIST OF DONORS SUPPORTING EDUCATIONAL SECTOR

1. **Asian Development Bank, ADB**
   Address: 1, A. Khadjaeva str., Tashkent, 700027, Uzbekistan
   Telephone: +998 (71) 140–1920/21/22/23/24/25
   Fax: +998 (71) 140–1976
   Email: adburm@adb.org
   Web site: http://www.adb.org/urm
2. **ACTED—Agency for Technical Cooperation and Development**
   Address: 10-a, Ilyos Fazilov str., Tashkent, Uzbekistan
   Telephone: +998 (71) 137–6226, 134–8438
   Fax: +998 (71) 134–8438, 135–5129
   Email: tashkent@acted.org
3. **United States Agency for International Development (USAID)**
   Address: 3, Moyqorghon str., 5th Block, Tashkent 700093, Uzbekistan
   Telephone: +998 (71) 120–6309, 120–5450 (ext. 2130)
   Fax: +998 (71) 120–6309
4. **KfW (Kreditanstalt fur Wiederaufbau)**
   Address: KfW Bankengruppe, Palmengartenstrasse 5-9,
   60325 Frankfurt, Germany
   Telephone: +49 (69) 74310
   Web site: www.kfw.de
5. **British Council**
   Address: University of World Languages Building, 11, Mirobod str.,
   Tashkent, 700031, Uzbekistan
   Telephone: +998 (71) 140–¬0660/61/62/63
   Fax: +998 (71) 140–0667
   Email: bc-tashkent@britishcouncil.uz
6. **World Bank, WB**
   Address: 15th floor, International Business Center, 107B, Amir Temur str.,
   Tashkent, 700084, Uzbekistan
   Telephone: +998 (71) 138–5950/1/3/4/5/6/7/8/9
   Fax: +998 (71) 138–5952
   Web site: http://www.worldbank.org.uz
7. **GTZ (Gesellshaft fur Technische Zusammenarbeit)**
   Address: 15, Shota Rustavelly str., Tashkent, Uzbekistan
   Telephone: +998 (71) 140–0489/90
   Email: li@gtzmain.uz

More detailed information on donors and their projects is available on www.devaid.uz site, "Donors' profiles'" section.

8. **United Nations Children's Fund, UNICEF**
   Address: 43, Suleymanova str., Tashkent, Uzbekistan
   Telephone: +998 (71) 133–9512, 133–9735
   Email: tashkent@unicef.org
9. **Institute of Asian Culture and Development**
   Address: 3, V. Fetisov str., Tashkent, 700105, Uzbekistan
   Telephone: +998 (71) 191–9544
   Email: iacd@chollian.net
   Web site: http://www.iacd.or.kr/
10. **Institute for international cooperation of the German adult education association**
    Address: 44, General Karimov st., Tashkent, Uzbekistan
    Telephone: +998 (71) 120–5536
    Fax: +998 (71) 152–2108
    Email: info@iizdvv.uz
    Web site: http://www.iiz-dvv.de/
11. **Islamic Development Bank, IDB**
    Address: P. Box. 5925, Jeddah 21432 Kingdom of Saudi Arabia
    Telephone: (9662) 6361400
    Fax: (9662) 6366871
    Email: idbarchives@isdb.org
    Web site: http://www.isdb.org/
12. **Korean International Cooperation Agency, KOICA**
    Address: 7, Afrosiab St., Tashkent, Uzbekistan
    Telephone: +998 (71) 152–6378
    Fax: +998 (71) 120–6484
    Email: dhkim@koica.go.kr
    Web site: http://www.koica.go.kr
13. **United Nations Educational, Scientific and Cultural Organization, UNESCO**
    Address: 95, Amir Temur str., Tashkent, Uzbekistan
    Telephone: +998 (71) 120–7116
    Fax: +998 (71) 132–1382
    Email: tashkent@unesco.org; b.lane@unesco.org
14. **Government of Germany (Embassy of Germany)**
    Address: 15, Sharaf Rashidov str., Tashkent, 700017, Uzbekistan
    Telephone: +998 (71) 120–8440, 181–5406/07 (after hours)
    Fax: +998 (71) 120–6693, 120–8450
    Email: info@taschkent.diplo.de
15. **Government of India (Embassy of India)**
    Address: 5/16, Kara-Bulak (Vakhshskaya) str., Tashkent, Uzbekistan
    Telephone: +998 (71) 140–0997/98/83
    Fax: +998 (71) 140–0999
    Email: indiaemb@buzton.com , indhoc@buzton.com
    Web site: http://www.indembassy.uz
17. **Government of France (Embassy of France)**
    Address: 25, Akhunbabaev str., Tashkent, 700047, Uzbekistan
    Telephone: +998 (71) 133–5157, 133–5382
    Email: visa.tachkent-amba@diplomatie.gouv.fr

18. **Government of Japan (Embassy of Japan)**
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    Web site: http://www.tika.gov.tr
23. **Science and Technology Center in Ukraine, STCU**
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24. **Japanese Agency for International Cooperation, JICA**
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25. **Japan Bank for International Cooperation, JBIC**
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ANNEX 3

STATISTICAL TABLES

Table 1. Human development index

	2000	2001	2002	2003	2004	2005
Life expectancy at birth (years)	70.8	71.3	71.2	71.6	71.2	71.8
Adult literacy rate (%)	99.17	99.18	99.19	99.20	99.31	99.36
Mean years of schooling (years)	11.4	11.5	11.6	11.6	11.7	11.7
Literacy index	0.992	0.992	0.992	0.992	0.993	0.994
Schooling index	0.76	0.77	0.77	0.77	0.77	0.78
Educational attainment	2.74	2.74	2.74	2.76	2.75	2.75
Real GDP per capita ($ PPP)*	2422.0	2460.0	2573.6	2704.9	2954.3	3227.2
Life expectancy index	0.763	0.772	0.770	0.777	0.770	0.780
Index of achieved level of education	0.913	0.913	0.913	0.917	0.917	0.917
GDP index	0.532	0.535	0.542	0.550	0.565	0.580
Human development index (HDI)	0.736	0.740	0.742	0.748	0.751	0.759
Gender-related development index	0.733	0.736	0.738	0.744	0.746	0.747
The gender empowerment measure (GEM)	0.382	0.378	0.380	0.411	0.440	0.500
HDI rank	–	101	107[2]	–	–	–

* From 1995 to 2000—actualized information—by purchasing power parity of national currency in current prices (Human development in Kazakhstan, Almata 2001, page 92); for 2001—Report on Human Development for 2003, page 238; for 2002–2005—our calculations.

2 Human Development Report, 2004.

Table 2. Humanitarian development

	2000	2001	2002	2003	2004	2005
Scientists and technicians (per 10.000 people)	11.2	10.9	11.3	10.9	10.7	11.0
Enrolment in education (% age 7–22)	76.0	76.7	77.3	77.3	76.5	76.5
Enrolment in tertiary education (per 1.000 people)	7.4	8.2	9.1	9.9	10.1	10.6
as % of constant population	0.7	0.8	0.9	1.0	1.0	1.1
Including women	0.3	0.3	0.4	0.4	0.4	0.4
Daily newspapers (copies per 100 people)	7	8	9	8	8	10
Television sets (per 1.000 people)	50	39	34	33	33	34
Radio sets (per 1.000 people)	53	43	39	39	39	37

Table 3. Profile of human distress

	2000	2001	2002	2003	2004	2005
Unemployment rate (%)	0.4	0.4	0.4	0.3	0.4	0.3
Injures from road accidents (per 100.000 people):						
died	8.6	8.6	8.2	7.9	7.8	8.1
injured	47.2	47.1	45.1	44.4	44.1	45.1
Sulphur and nitrogen emissions (NO_2 and SO_2 per capita, kg)	16.7	14.3	14.0	13.1	12.4	12.3
Reported crimes (per 10.000 people)	29.9	29.7	30.4	31.2	30.5	30.4
including:						
intentional murder and attempted murder	0.4	0.4	0.4	0.4	0.4	0.3
intentional grievous bodily injury	0.3	0.4	0.5	0.4	0.5	0.5
Intentional homicides by men (per 100.000 people)	3.0	2.8	3.4	3.0	2.6	2.9
Reported rapes (per 100.000 people)	1.7	1.9	1.9	2.1	1.8	1.6

Table 4. Human development financing

	2000	2001	2002	2003	2004	2005
Total expenditure on education (as % of GDP)	10.3	9.6	9.0	8.8	8.8	9.0
Total expenditure on health (as % of GDP)	4.0	4.4	4.2	3.9	3.8	3.7
Real GDP per capita ($PPP)	2422.0	2460.0	2573.6	2704.9	2954.3	3227.2
State expenditure on education (as % of GDP)	6.7	6.8	6.7	6.3	*	-
State expenditure on health (as % of GDP)	2.5	2.5	2.4	2.3	*	-

* confidential information

Table 5. Male–female gaps (females as percentage of males)

	2000	2001	2002	2003	2004	2005
Life expectancy	107.0	106.8	106.7	106.3	106.4	106.5
Population	100.7	100.6	100.5	100.3	100.3	100.2
Schooling	95.7	95.7	95.8	95.8	95.8	95.8
Secondary school enrolment	93.6	87.9	87.7	86.1	90.3	91.7
Secondary school graduates	94.0	85.7	82.5	93.2	90.3	90.8
Full-time enrolment in tertiary education	95.3	94.3	93.9	93.1	92.9	93.0
Tertiary school graduates	64.2	55.3	59.5	66.8	68.6	70.5
Labor force	78.9	78.7	78.6	78.6	92.9	91.6
Unemployment	2.1	1.8	2.0	1.7	1.7	1.5

Table 6. Status of women

	2000	2001	2002	2003	2004	2005
Life expectancy at birth	73.2	73.6	73.5	73.8	73.6	74.1
Average age at first marriage (years)	21.4	21.5	21.6	21.8	22.1	22.2
Maternal mortality rate (per 100.000 live birth)	33.1	34.1	32.0	32.2	30.2	29.2
Secondary school enrolment (as % of total)	48.3	46.8	46.7	47.1	47.0	47.8
Secondary school graduates (as % of women in total secondary school graduates)	48.4	46.2	45.2	48.3	47.5	47.6
Full-time enrolment in tertiary education (as % of total)	38.9	39.6	39.7	38.8	40.5	40.4
Women in labor force (as % of total)	44.0	44.0	44.0	44.0	48.2	47.8

Table 7. Urban/rural demographic indicators

	2000	2001	2002	2003	2004	2005
Population (millions) at the end of the year						
total	24.8	25.1	25.4	25.7	26.0	26.3
urban	9.2	9.3	9.3	9.4	9.4	9.5
rural	15.6	15.8	16.1	16.3	16.6	16.8
Annual population growth rate (%)						
total	1.3	1.2	1.2	1.1	1.2	1.1
urban	0.7	0.7	0.6	0.4	0.6	0.6
rural	1.7	1.5	1.6	1.5	1.6	1.4
Average family size						
total	5.4	5.4	5.1	5.1	5.1	5.1
urban	4.6	4.6	4.4	4.3	4.5	4.4
rural	6.0	5.9	5.8	5.7	5.6	5.6
Contraceptive prevalence rate (%)	58.5	55.0	56.4	60.0	61.8	58.3
Population elder working age (%)						
total	7.3	7.2	7.2	7.1	7.0	7.0
urban	9.0	9.0	8.9	8.9	8.8	8.8
rural	6.3	6.2	6.2	6.1	6.0	6.0
Life expectancy at age 60–64						
total	17.3	17.6	17.1	17.2	17.1	17.2
urban	17.2	17.5	17.0	17.3	17.3	17.3
rural	17.3	17.6	17.3	17.2	17.2	17.2
women						
total	18.3	18.6	18.3	18.3	18.4	18.4
urban	18.7	19.0	18.6	19.0	18.8	18.9
rural	18.0	18.3	18.0	17.8	18.0	18.0
men						
total	16.0	16.3	15.9	16.0	15.9	15.9
urban	15.3	15.6	15.1	15.3	15.2	15.3
rural	16.5	16.8	16.5	16.5	16.5	16.4

Table 8. Urbanization

	2000	2001	2002	2003	2004	2005
Urban population at the end of the year (as % of total)	37.2	37.0	36.7	36.5	36.3	36.1
Annual growth rate of urban population (% for 5 year period)	1.1	0.9	0.8	0.6	0.6	0.5
Population in cities of more than 1 million as % of:						
total population	8.6	8.5	8.4	8.3	8.2	8.1
urban population	23.2	23.0	22.9	22.8	22.6	22.5
Population of biggest cites (cites of more than 100000 and over) as percentage of:						
total population	20.1	21.2	21.0	20.9	20.9	20.7
urban population	54.0	57.4	57.3	57.3	57.7	57.3

Table 9. Medicine and health care

	2000	2001	2002	2003	2004	2005
Death of circulatory diseases (as % of all cases)						
total	52.6	53.4	54.8	54.7	54.6	56.3
urban	54.8	54.9	56.1	55.8	54.9	56.5
rural	50.8	52.1	53.8	53.8	54.4	56.1
Death from malignant tumor (as % of all cases)						
total	7.1	7.1	6.9	7.0	7.3	7.0
urban	8.8	8.7	8.6	8.6	8.9	8.3
rural	5.6	5.7	5.5	5.7	6.0	5.9
Registered alcohol consumption (liters per capita)	1.3	1.4	1.4	1.2	1.1	1.0
Population per doctor	305	309	314	318	334	344
Number of hospital beds per 10.000 people	55.9	55.8	57.8	57.4	54.9	54.1
Number of hospital beds for pregnant women per 10.000 women	40.5	39.6	38.1	35.7	32.0	30.9
State expenditures on health (as of total state expenditures)	8.7	9.6	9.4	9.6	-	-
State expenditures on health (as % of GDP)	2.5	2.5	2.4	2.3	-	-
Total expenditures on health (as % of GDP)	4.0	4.4	4.2	3.9	3.8	3.7

Table 10. Education profile

	2000	2001	2002	2003	2004	2005
Enrolment of 7–22 years old (%)	76.0	76.7	77.3	77.3	76.5	76.5
Average years of schooling:	11.4	11.5	11.6	11.6	11.7	11.7
women	11.1	11.2	11.3	11.3	11.5	11.5
men	11.6	11.7	11.8	11.8	11.9	12.0
Secondary school graduates (%)	114.8	113.9	121.0	107.9	117.9	104.2
Secondary schools graduates (% of total school age population)	93.7	102.5	-*	71.1	86.7	83.8
Secondary specialized school graduates (as % of school graduates, vocational and specialized school students)	41.4	42.9	-*	43.3	37.1	36.6
19-years still n full-time education (%)	23.4	19.0	18.2	18.5	16.8**	17.4**
University equivalent full-time enrolment (%)	91.2	89.4	84.0	78.5	91.4	90.5
University equivalent full-time graduates (as % of graduate age population)	7.0	7.7	8.4	9.2	10.5	11.2
State expenditures on education (as % of GDP)	6.7	6.8	6.7	6.3	-	-
State expenditures on education (as of total state expenditures)	23.2	25.5	26.0	26.2	-	-
State expenditures on tertiary education (as % of expenditures on education)	7.0	6.8	6.7	6.5	-	-

* Incommensurable information as a result of displacement in the stages of education, ridded with the reform of education.

** The number of 19-years old students in secondary school

Table 11. Employment

	2000	2001	2002	2003	2004	2005
Labor force (as % of total population)						
total	36.6	36.7	37.1	37.6	38.5	39.1
urban	17.0	16.4	16.6	16.8	16.9	16.8
rural	19.6	20.3	20.5	20.8	21.6	22.3
Engaged (as % of total population):						
in agriculture and forestry						
total	34.4	33.5	32.6	31.9	30.7	29.1
urban	1.5	1.2	1.1	1.2	1.2	1.3
rural	32.9	32.3	31.5	30.7	29.5	27.8
in industry						
total	12.7	12.7	12.7	12.8	13.0	13.2
urban	10.7	10.2	10.2	10.3	10.1	9.6
rural	2.0	2.5	2.5	2.5	2.9	3.6
in services						
total	30.4	30.7	31.3	31.8	32.3	32.9
urban	18.5	18.5	18.7	18.9	18.8	18.9
rural	11.9	12.2	12.6	12.9	13.4	14.0
Future labor force replacement ratio (%)						
total	206	197	188	180	169	162
urban	166	159	152	146	138	133
rural	233	222	211	201	189	181
Percentage of employees unionized	100	100	100	100	100	100
Weekly working hours (per person in manufacturing)	40	40	40	40	40	40

Table 12. Unemployment

	2000	2001	2002	2003	2004	2005
Unemployed, having official status (thousand people)						
total	35.4	37.5	34.8	32.2	34.9	27.7
urban	14.0	11.5	11.9	9.5	9.3	8.1
rural	21.4	26.0	22.9	22.7	25.6	19.6
Unemployment rate, (%)						
total	0.4	0.4	0.4	0.3	0.4	0.3
urban	0.3	0.3	0.3	0.2	0.2	0.2
rural	0.4	0.5	0.4	0.4	0.5	0.3
Regional unemployment disparity (the bottom 25% of all regions compared to the top 25%)	5.7	5.7	5.2	7.5	8.7	7.4
Ratio between the number of unemployed and secondary and higher schools graduates	2.4	1.8	4.0	2.0	1.9	1.2
women	3.1	2.8	6.8	2.4	2.1	1.4
men	1.7	1.1	2.5	1.8	1.6	1.0
Incidence of long-term unemployed (as % of total)						
6–12 month	8.2	12.3	11.4	5.7	7.7	13.7
More than 12 months	3.1	1.6	3.0	2.9	2.4	3.5

Table 13. National incomes accounts

	2000	2001	2002	2003	2004	2005
Total GDP (bln. soums)	3255.6	4925.3	7450.2	9844.0	12261.0	15923.4
Agricultural production (as % of GDP)	30.1	30.0	30.1	28.4	26.4	26.3
Industry (as % of GDP)	14.2	14.1	14.5	15.8	17.5	21.1
Services (as % of GDP)	37.0	38.0	37.7	37.2	37.0	37.0
Private consumption (as % of GDP)	61.9	61.5	60.2	55.6	51.9	48.4
Public consumption (as % of GDP)	18.7	18.5	18.0	17.4	16.2	15.9
Gross domestic investments (as % of GDP)	19.6	21.1	21.2	20.8	24.5	28.0
Gross domestic savings (as % of GDP)	19.4	20.0	21.8	27.0	31.9	35.7
Tax revenues (as % of GDP)	23.3	21.0	22.5	22.1	-	-
Government spending (as % of GDP)	29.0	26.7	25.8	24.1	-	-
Exports (as % of GDP)	26.5	30.8	31.6	36.9	40.4	37.9
Imports (as % of GDP)	26.7	31.9	31.0	30.7	33.0	30.2

Table 14. Natural resources balance sheet

	2000	2001	2002	2003	2004	2005
Population density (people per sq. km, at the end of the year)	55.5	56.2	56.9	57.5	58.2	58.8
Cultivated land (as % of land area)	9.1	9.1	9.1	9.1	9.1	9.1
Forested and wooded land (as % of land area)	3.1	3.1	5.1	6.1	6.1	6.1
Irrigated land (as 5 of arable area)	81.6	81.6	81.6	81.6	81.5	81.4

Table 15. Trends of economic performance

	2000	2001	2002	2003	2004	2005
GDP annual growth rate (%)	3.8	4.2	4.0	4.2	7.4	7.0
GDP per capita annul growth (%)	2.4	2.9	2.7	3.0	6.2	5.7
Tax revenues (as % of GDP)	23.3	21.0	22.5	22.1	-	-
Direct taxes (as % of total taxes)	33.4	34.9	30.1	28.4	-	-
Budget deficit (as % of GDP)	0.7	0.3	0.2	0.4	-	-
Exports (as % of GDP)	26.5	30.8	31.6	36.9	40.4	37.9

Table 16. Communications profile

	2000	2001	2002	2003	2004	2005
Television sets (per 1.000 people)	50	39	34	33	33	34
Daily newspapers (copies per 100 people)	7	8	9	8	8	10
Book titled published (per 100.000 people)	4.2	4.3	3.8	3.5	3.7	3.6
Private cars (per 100 people)	3.9	4.0	4.0	4.0	6.0	6.0
Telephones (per 100 people), units	6.5	6.5	6.5	6.6	6.6	6.7
Telephones (per 100 rural dwellers), units	1.7	1.6	1.6	1.6	1.6	1.6
Parcels, letters (per 100 people)	0.3	0.4	0.2	0.2	0.2	0.2
Long distance calls per capita)	5.2	5.7	6.5	6.9	7.1	8.9
Letters mailed (per capita)	0.4	0.4	0.4	0.5	0.6	0.6

Table 17. Rural-urban gaps

	2000			2001		
	total	urban	rural	total	urban	rural
Life expectancy at birth (years)	70.8	70.2	71.2	71.3	70.7	71.7
Mean years of schooling	11.4	11.8	11.0	11.5	11.8	11.2
Literacy rate	99.2	99.7	98.8	99.2	99.7	98.8
Literacy index	0.992	0.997	0.988	0.992	0.997	0.988
Education level	2.74	2.82	2.70	2.74	2.83	2.70
Gross first, second and third level enrolment ratio	76.0	82.5	72.7	76.0	83.4	72.2
Education attainment index	0.913	0.940	0.901	0.913	0.943	0.899
Real GDP per capita (PPP$)	2422.0	-	-	2460.0	-	-
Life expectancy index	0.763	0.753	0.770	0.772	0.762	0.778

	2002			2003		
	total	urban	rural	total	urban	rural
Life expectancy at birth (years)	71.2	70.5	71.7	71.6	71.1	71.9
Mean years of schooling	11.6	12.0	11.2	11.6	12.0	11.3
Literacy rate	99.2	99.7	98.8	99.2	99.7	98.8
Literacy index	0.992	0.997	0.988	0.992	0.997	0.988
Education level	2.74	2.83	2.70	2.76	2.79	2.73
Gross first, second and third level enrolment ratio	76.0	83.8	72.2	77.3	80.0	75.3
Education attainment index	0.913	0.944	0.899	0.917	0.931	0.909
Real GDP per capita (PPP$)	2573.6	-	-	2704.9	-	-
Life expectancy index	0.770	0.758	0.778	0.777	0.768	0.782

	2004			2005		
	total	urban	rural	total	urban	rural
Life expectancy at birth (years)	71.2	70.7	71.6	71.8	71.1	72.2
Mean years of schooling	11.7	12.1	11.5	11.7	12.2	11.5
Literacy rate	99.3	99.4	99.3	99.4	99.5	99.3
Literacy index	0.993	0.994	0.993	0.994	0.995	0.993
Education level	2.75	2.90	2.68	2.75	2.92	2.68
Gross first, second and third level enrolment ratio	76.5	91.1	69.4	76.5	94.2	68.0
Education attainment index	0.917	0.967	0.893	0.917	0.973	0.893
Real GDP per capita (PPP$)	2954.3	-	-	3227.2	-	-
Life expectancy index	0.770	0.762	0.777	0.780	0.768	0.787

Table 18. Rural-urban gaps (100=parity between urban rural areas)

	2000	2001	2002	2003	2004	2005
Population	168.1	169.7	171.3	173.1	174.8	176.4
Population growth rate	242.9	214.3	266.7	375.0	266.7	233.3
Life expectancy	101.4	101.4	101.7	101.1	101.3	101.5
Average family size	130.4	128.3	131.8	132.6	124.4	127.3
Labor force	115.6	123.8	123.5	123.5	127.8	132.6
Population elder than working age	117.4	118.2	119.4	120.0	120.1	120.7
Death from circulatory diseases	67.6	68.4	63.7	70.6	72.1	70.6
Death from malignant tumors	46.5	47.3	42.6	48.9	49.5	50.9
Life expectancy at age of 60–64	100.6	100.6	101.8	99.4	99.4	99.4
Employed as total employed	115.5	123.5	123.3	123.3	127.5	132.4
Unemployment rate	131.5	183.7	155.0	192.0	215.3	182.5
Provision of services to household:						
water supply	73.7	76.9	78.3	89.1	89.5	89.9
sewage service	8.9	8.4	8.1	9.0	9.1	9.4

The data on the basis of the average level of urban area with an index of 100. The lower s the figure, the higher the distortion, the closer the figure s to 100, the lower is the distortion. Figures exceeding 100 indicates that the average level in rural areas than the average level in urban areas.

Table 19. GDP per capita by regions (Real GDP per capita)

	2000	2001	2002	2003	2004	2005
Real GDP per capita ($ PPP)						
Republic of Uzbekistan**	2422.0	2460.0	2573.6	2704.9	2954.3	3227.2
Nothern Uzbekistan	1627.6	1493.2	1490.6	1635.5	1746.2	1972.2
Republic of Karakalpakstan	1324.8	1237.4	1214.5	1443.4	1479.8	1772.1
Khorezm	1969.1	1781.0	1799.8	1849.0	2035.4	2191.7
Central Uzbekistan	2206.4	2233.7	2333.5	2513.4	2625.0	3185.9
Bukhara	2666.6	2666.6	2645.5	2828.2	2996.4	3550.7
Djizzak	1552.5	1655.6	1805.0	2177.2	2211.1	2553.3
Navoi	3419.9	3537.5	4177.2	4743.9	5204.7	7185.3
Samarkand	1799.5	1768.7	1835.9	1849.0	1854.0	2127.2
Syrdarya	2412.3	2509.2	2320.7	2449.3	2610.9	3066.5
Southern Uzbekistan	1872.2	1968.0	2044.8	2073.1	2120.4	2530.7
Kashkadarya	1981.2	2076.2	2158.2	2259.9	2352.9	2937.4
Surkhandarya	1736.6	1830.2	1902.9	1838.3	1825.6	2014.2
Eastern Uzbekistan	2487.4	2477.2	2485.7	2534.7	2664.7	3102.0
Andijan	2019.9	2140.2	2114.4	2046.4	2072.2	2524.2
Namangan	1625.2	1567.0	1598.7	1627.5	1644.2	1817.3
Fergana	2557.6	2273.0	2312.9	2238.5	2307.5	2630.7
Tashkent	2724.8	2755.2	2820.9	2884.2	3160.8	3915.4
Tashkent-city	3393.2	3601.4	3545.4	3895.4	4192.7	4670.8

	2000	2001	2002	2003	2004	2005
Real GDP per capita ($ PPP), as % of average						
Republic of Uzbekistan**	1.00	1.00	1.00	1.00	1.00	1.00
Nothern Uzbekistan	0.672	0.607	0.578	0.613	0.616	0.611
Republic of Karakalpakstan	0.547	0.503	0.471	0.541	0.522	0.549
Khorezm	0.813	0.724	0.698	0.693	0.718	0.679
Central Uzbekistan	0.911	0.908	0.905	0.942	0.926	0.987
Bukhara	1.101	1.084	1.026	1.060	1.057	1.100
Djizzak	0.641	0.673	0.700	0.816	0.780	0.791
Navoi	1.412	1.438	1.620	1.778	1.836	2.226
Samarkand	0.743	0.719	0.712	0.693	0.654	0.659
Syrdarya	0.996	1.020	0.900	0.918	0.921	0.950
Southern Uzbekistan	0.773	0.800	0.793	0.777	0.748	0.784
Kashkadarya	0.818	0.844	0.837	0.847	0.830	0.910
Surkhandarya	0.717	0.744	0.738	0.689	0.644	0.624
Eastern Uzbekistan	1.027	1.007	0.964	0.950	0.940	0.961
Andijan	0.834	0.870	0.820	0.767	0.731	0.782
Namangan	0.671	0.637	0.620	0.610	0.580	0.563
Fergana	1.056	0.924	0.897	0.839	0.814	0.815
Tashkent	1.125	1.120	1.094	1.081	1.115	1.213
Tashkent-city	1.401	1.464	1.375	1.460	1.479	1.447
Real GDP per capita by regions						
Republic of Uzbekistan**	131562	196543	293699	383592	472312	606325
Nothern Uzbekistan	88373	119304	169808	235030	290745	370448
Republic of Karakalpakstan	72021	98931	138325	207391	246629	332572
Khorezm	106923	142308	205083	265744	339333	411685
Central Uzbekistan	119905	178385	265823	361339	437552	598403
Bukhara	144863	213067	301326	406669	499423	667127
Djizzak	84267	132263	205685	312926	368273	479423
Navoi	185752	282691	475653	682023	867095	1349946
Samarkand	97740	141282	208987	265678	308944	399487
Syrdarya	131068	200465	264218	352079	435187	575875
Southern Uzbekistan	101694	157184	232946	297892	353109	475073
Kashkadarya	107577	165907	245793	324720	392038	552026
Surkhandarya	94353	146284	216884	264322	304315	378467
Eastern Uzbekistan	135136	197833	283100	364242	444159	582478
Andijan	109764	170944	240715	294335	345168	473959
Namangan	88218	125235	182044	233891	273907	341636
Fergana	138969	181690	263513	321694	384694	494105
Tashkent	148046	220180	321304	414710	526514	735698
Tashkent-city	184364	287802	403896	559944	698717	877234

	2000	2001	2002	2003	2004	2005
Regional GDP per capita as per cent of average country GDP per capita						
Republic of Uzbekistan**	1.00	1.00	1.00	1.00	1.00	1.00
Nothern Uzbekistan	0.672	0.607	0.578	0.613	0.616	0.611
Republic of Karakalpakstan	0.547	0.503	0.471	0.541	0.522	0.549
Khorezm	0.813	0.724	0.698	0.693	0.718	0.679
Central Uzbekistan	0.911	0.908	0.905	0.942	0.926	0.987
Bukhara	1.101	1.084	1.026	1.060	1.057	1.100
Djizzak	0.641	0.673	0.700	0.816	0.780	0.791
Navoi	1.412	1.438	1.620	1.778	1.836	2.226
Samarkand	0.743	0.719	0.712	0.693	0.654	0.659
Syrdarya	0.996	1.020	0.900	0.918	0.921	0.950
Southern Uzbekistan	0.773	0.800	0.793	0.777	0.748	0.784
Kashkadarya	0.818	0.844	0.837	0.847	0.830	0.910
Surkhandarya	0.717	0.744	0.738	0.689	0.644	0.624
Eastern Uzbekistan	1.027	1.007	0.964	0.950	0.940	0.961
Andijan	0.834	0.870	0.820	0.767	0.731	0.782
Namangan	0.671	0.637	0.620	0.610	0.580	0.563
Fergana	1.056	0.924	0.897	0.839	0.814	0.815
Tashkent	1.125	1.120	1.094	1.081	1.115	1.213
Tashkent-city	1.401	1.464	1.375	1.460	1.479	1.447

* Provisional Data

** Including not distributed data by regions: Uzbek energy; Foreign commerce; Branches, rendering state services in a joint character; Taxes for import, including NDC; Subsidies for products.

ADDENDUM TO MAN TABLES

Demography and employment

Table 20. Human development index by regions

	Life expectancy				Life expectancy index			
	2002	2003	2004	2005	2002	2003	2004	2005
Republic of Uzbekistan	71.2	71.6	71.2	71.8	0.770	0.777	0.770	0.780
Republic of Karakalpakstan	68.2	69.3	69.2	68.9	0.720	0.738	0.737	0.730
Andijan	71.3	71.5	71.3	71.9	0.772	0.775	0.772	0.782
Bukhara	72.8	72.7	73.4	73.6	0.797	0.795	0.807	0.810
Djizzak	73.6	74.3	74.4	74.6	0.810	0.822	0.823	0.827
Kashkadarya	73.1	74.0	74.2	74.2	0.802	0.817	0.820	0.820
Navoi	71.0	71.8	71.2	71.4	0.767	0.780	0.770	0.773
Namangan	71.9	71.8	72.0	72.4	0.782	0.780	0.783	0.790
Samarkand	71.2	71.9	71.8	71.8	0.770	0.782	0.780	0.780
Surkhandarya	73.6	73.4	73.5	73.6	0.810	0.807	0.808	0.810
Syrdarya	69.3	69.5	69.4	69.1	0.738	0.742	0.740	0.735
Tashkent	70.2	70.5	70.5	70.1	0.753	0.758	0.758	0.752
Fergana	72.0	72.1	72.1	72.5	0.783	0.785	0.785	0.792
Khorezm	71.4	71.3	72.4	72.6	0.773	0.772	0.790	0.793
Tashkent-city	69.6	70.1	69.7	69.9	0.743	0.752	0.745	0.748

End of table 20.

	2000	2001	2002	2003	2004	2005
GDP index						
Republic of Uzbekistan	0.532	0.535	0.542	0.550	0.565	0.580
Republic of Karakalpakstan	0.431	0.420	0.417	0.445	0.450	0.480
Andijan	0.502	0.511	0.509	0.504	0.506	0.539
Bukhara	0.548	0.548	0.547	0.558	0.568	0.596
Djizzak	0.541	0.547	0.429	0.514	0.517	0.541
Kashkadarya	0.482	0.506	0.513	0.520	0.527	0.564
Navoi	0.532	.0.595	0.623	0.644	0.659	0.713
Namangan	0.465	0.459	0.463	0.466	0.467	0.484
Samarkand	0.482	0.480	0.486	0.487	0.487	0.510
Surkhandarya	0.477	0.485	0.492	0.486	0.485	0.501
Syrdarya	0.531	0.538	0.525	0.533	0.545	0.571
Tashkent	0.551	0.553	0.557	0.561	0.576	0.612
Fergana	0.541	0.522	0.524	0.519	0.524	0.546
Khorezm	0.497	0.481	0.482	0.487	0.503	0.515
Tashkent-city	0.588	0.598	0.596	0.611	0.623	0.641
Educational level						
Republic of Uzbekistan	2.74	2.74	2.74	2.76	2.75	2.75
Republic of Karakalpakstan	2.73	2.74	2.73	2.73	2.71	2.73
Andijan	2.74	2.74	2.74	2.75	2.75	2.74
Bukhara	2.74	2.72	2.72	2.73	2.72	2.71
Djizzak	2.75	2.72	2.72	2.72	2.70	2.72
Kashkadarya	2.75	2.74	2.74	2.75	2.74	2.73
Navoi	2.77	2.76	2.78	2.79	2.79	2.79
Namangan	2.73	2.74	2.73	2.75	2.75	2.74
Samarkand	2.75	2.75	2.74	2.75	2.74	2.74
Surkhandarya	2.72	2.74	2.74	2.75	2.75	2.74
Syrdarya	2.68	2.69	2.68	2.69	2.68	2.68
Tashkent	2.68	2.68	2.68	2.68	2.68	2.68
Fergana	2.76	2.76	2.77	2.78	2.77	2.77
Khorezm	2.75	2.75	2.74	2.76	2.76	2.76
Tashkent-city	2.86	2.89	2.92	2.96	2.96	2.98
HDI						
Republic of Uzbekistan	0.736	0.740	0.742	0.748	0.751	0.759
Republic of Karakalpakstan	0.690	0.684	0.682	0.698	0.697	0.707
Andijan	0.727	0.732	0.731	0.732	0.732	0.745
Bukhara	0.748	0.750	0.750	0.754	0.761	0.771
Djizzak	0.755	0.754	0.715	0.748	0.747	0.758
Kashkadarya	0.733	0.740	0.743	0.751	0.753	0.765
Navoi	0.737	0.761	0.772	0.785	0.786	0.756
Namangan	0.715	0.718	0.718	0.721	0.722	0.729
Samarkand	0.720	0.722	0.723	0.729	0.729	0.734
Surkhandarya	0.725	0.736	0.738	0.737	0.737	0.741
Syrdarya	0.716	0.724	0.719	0.724	0.726	0.733
Tashkent	0.732	0.733	0.734	0.737	0.742	0.752
Fergana	0.744	0.741	0.743	0.744	0.744	0.753
Khorezm	0.724	0.723	0.723	0.726	0.738	0.743
Tashkent-city	0.763	0.769	0.771	0.752	0.785	0.794

Table 21. Population density and rural population % by regions

	2001	2002	2003	2004	2005	2006
Population density, people/km²						
Republic of Uzbekistan	55.5	56.2	56.9	57.5	58.2	58.8
Republic of Karakalpakstan	9.2	9.3	9.3	9.4	9.4	9.5
Andijan	529.2	536.5	544.2	551.2	559.2	567.1
Bukhara	35.8	36.2	36.7	37.1	37.5	38.0
Djizzak	47.0	47.7	48.3	48.9	49.5	49.8
Kashkadarya	77.5	78.9	80.3	81.8	83.3	84.7
Navoi	7.2	7.2	7.2	7.3	7.3	7.3
Namangan	264.8	268.7	272.9	275.3	281.0	285.1
Samarkand	161.8	164.2	166.5	168.7	171.2	173.6
Surkhandarya	88.3	89.8	91.5	92.9	94.5	96.0
Syrdarya	152.0	153.7	155.3	156.3	157.2	158.3
Tashkent	291.1	292.3	293.8	294.8	296.2	297.5
Fergana	404.4	409.2	414.6	419.6	425.8	431.5
Khorezm	221.3	224.9	228.4	231.6	235.3	238.7
Rural population, % of total						
Republic of Uzbekistan	62.8	63.0	63.3	63.5	63.7	63.9
Republic of Karakalpakstan	51.6	51.1	51.0	51.3	51.3	51.4
Andijan	70.0	70.0	70.1	70.2	70.4	70.5
Bukhara	69.2	69.5	69.8	70.0	70.3	70.5
Djizzak	69.9	70.0	70.2	70.1	70.0	70.1
Kashkadarya	74.7	74.9	75.1	75.2	75.2	75.3
Navoi	59.7	59.9	60.1	60.2	60.3	60.5
Namangan	62.5	62.5	62.5	62.5	62.7	62.8
Samarkand	73.2	73.5	73.8	74.1	74.3	74.5
Surkhandarya	80.3	80.4	80.5	80.6	80.7	80.8
Syrdarya	68.0	68.2	68.5	68.6	68.7	68.8
Tashkent	59.9	60.1	60.3	60.5	60.6	60.7
Fergana	71.1	71.2	71.4	71.6	71.8	71.9
Khorezm	76.5	76.8	77.1	77.4	77.6	77.8

Table 22. Able bodies population aged 15 and older by 01.01.2004 (thousand people)

	Total			Urban			Rural		
	total	female	male	total	female	male	total	female	male
Population aged 15 and older									
	17738.0	8984.8	8753.2	6827.6	3487.8	3339.8	10910.4	5497.0	5413.4
Literacy rate (percentage of literate population to population aged 15 and older, difference from 100%)									
	0.64	0.83	0.44	0.55	0.60	0.49	0.69	0.97	0.42
Literacy index									
	0.994	0.996	0.996	0.995	0.994	0.995	0.993	0.990	0.996

Table 23. Average family size*

	2000			2001		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	5.4	4.6	6.0	5.4	4.6	5.9
Republic of Karakalpakstan	6.3	5.9	6.7	6.1	5.9	6.3
Andijan	5.6	5.2	5.9	5.7	5.4	5.8
Bukhara	5.3	4.7	5.6	5.1	4.5	5.3
Djizzak	6.2	5.1	6.8	6.0	5.4	6.3
Kashkadarya	5.7	5.3	5.9	5.6	4.8	5.9
Navoi	4.7	4.2	5.3	4.5	4.0	4.9
Namangan	5.9	6.1	5.9	5.9	6.1	5.7
Samarkand	5.6	4.6	6.3	5.4	4.5	5.9
Surkhandarya	6.2	5.2	6.5	6.2	5.9	6.3
Syrdarya	5.3	4.4	5.8	5.4	4.5	6.0
Tashkent	4.6	3.4	5.9	4.8	3.8	5.9
Fergana	5.4	4.4	5.9	5.4	4.5	5.9
Khorezm	5.9	5.7	6.0	5.9	5.0	6.3
Tashkent-city	4.0	4.0	-	4.1	4.1	-

	2002			2003		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	5.1	4.4	5.8	5.1	4.3	5.7
Republic of Karakalpakstan	5.9	5.6	6.2	5.8	5.6	6.1
Andijan	5.6	5.1	5.8	5.3	4.5	5.7
Bukhara	4.7	3.9	5.2	5.0	4.5	5.3
Djizzak	6.0	5.1	6.5	5.9	5.3	6.2
Kashkadarya	5.7	5.1	5.9	5.4	5.0	5.5
Navoi	4.6	4.1	5.0	4.4	3.7	5.1
Namangan	5.7	5.8	5.7	5.6	5.6	5.5
Samarkand	5.0	3.5	5.8	4.9	4.0	5.4
Surkhandarya	5.9	5.7	6.0	5.8	5.0	6.0
Syrdarya	5.5	4.9	5.8	5.3	4.3	5.9
Tashkent	4.7	3.7	5.7	5.0	4.0	6.0
Fergana	5.2	4.5	5.5	5.2	4.2	5.8
Khorezm	5.5	4.5	5.9	5.3	4.7	5.5
Tashkent-city	3.8	3.8	-	3.7	3.7	-

	2004			2005		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	5.1	4.5	5.6	5.1	4.4	5.6
Republic of Karakalpakstan	5.4	5.3	5.5	5.5	5.2	5.9
Andijan	5.7	5.3	5.8	5.8	5.6	5.8
Bukhara	4.9	4.1	5.4	5.2	4.4	5.5
Djizzak	6.2	5.7	6.5	6.0	4.9	6.5
Kashkadarya	5.5	5.1	5.7	5.3	5.2	5.3
Navoi	4.6	3.9	5.1	4.6	4.0	5.0
Namangan	5.7	6.0	5.5	5.3	4.9	5.5
Samarkand	5.0	4.1	5.5	5.1	4.1	5.6
Surkhandarya	5.7	5.5	5.7	5.7	4.8	6.0
Syrdarya	4.8	4.1	5.1	4.6	4.2	4.9
Tashkent	4.8	3.9	5.7	5.2	4.4	6.0
Fergana	5.1	4.1	5.6	5.0	4.3	5.4
Khorezm	5.3	4.7	5.5	5.5	5.4	5.6
Tashkent-city	4.0	4.0	-	3.6	3.6	-

* Household surveys data

Table 24. Life expectancy at birth (years)

	2000	2001	2002	2003	2004	2005
Total						
both sexes	70.8	71.3	71.2	71.6	71.2	71.8
women	73.2	73.6	73.5	73.8	73.6	74.1
men	68.4	68.9	68.9	69.4	69.2	69.6
Urban population						
both sexes	70.2	70.7	70.5	71.1	70.7	71.1
women	73.5	74.0	73.6	74.3	74.0	74.3
men	66.8	67.3	67.3	67.9	67.6	67.9
Rural population						
both sexes	71.2	71.7	71.7	71.9	71.6	72.2
women	72.9	73.3	73.3	73.4	73.3	73.8
men	69.6	70.1	70.2	70.5	70.2	70.7

Table 25. Birth and mortality rates by regions

	Number of life births per 1,000 people			Number of deaths per 1,000 people		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan						
2000	21.3	17.7	23.5	5.5	6.6	4.8
2001	20.4	17.1	22.4	5.3	6.4	4.6
2002	21.0	17.4	23.1	5.4	6.6	4.7
2003	19.8	16.5	21.7	5.3	6.4	4.7
2004	20.8	17.7	22.6	5.0	6.1	4.4
2005	20.3	17.3	22.1	5.4	6.6	4.7
Republic of Karakalpakstan						
2000	24.0	22.1	25.8	5.6	5.7	5.5
2001	21.7	19.5	23.8	5.9	6.0	5.7
2002	21.8	19.4	24.1	5.9	6.0	5.9
2003	20.6	18.4	22.8	5.6	5.6	5.5
2004	22.4	21.4	23.5	5.2	5.2	5.2
2005	20.6	19.9	21.3	5.8	5.9	5.7
Andijan						
2000	19.9	19.5	20.1	5.2	6.3	4.8
2001	19.6	19.4	19.8	5.0	6.1	4.5
2002	20.3	18.5	21.0	5.2	6.3	4.7
2003	18.7	16.8	19.5	5.2	5.9	4.8
2004	20.0	17.6	21.1	4.9	6.2	4.3
2005	20.1	18.0	21.0	5.2	7.4	4.2
Bukhara						
2000	20.0	15.9	21.8	4.7	5.1	4.5
2001	20.2	15.5	22.3	4.5	5.2	4.3
2002	20.1	15.6	22.0	4.6	5.3	4.3
2003	18.8	15.8	20.2	4.6	5.4	4.3
2004	19.4	15.1	21.2	4.5	5.1	4.2
2005	19.8	14.7	22.0	4.5	4.9	4.4
Djizzak						
2000	24.3	18.9	26.7	4.4	4.2	4.4
2001	23.5	18.3	25.8	4.3	4.2	4.4
2002	23.4	17.7	25.8	4.4	4.3	4.4
2003	21.8	17.5	23.6	4.2	4.0	4.3
2004	22.7	18.9	24.4	4.0	3.8	4.1
2005	22.9	20.0	24.2	4.2	4.2	4.3
Kashkadarya						
2000	26.3	21.3	28.0	4.4	4.6	4.3
2001	24.2	19.8	25.7	4.4	4.5	4.4
2002	23.9	19.3	25.4	4.4	4.6	4.3
2003	23.5	19.3	24.9	4.1	4.4	4.0
2004	22.7	19.0	24.0	4.0	4.2	3.9
2005	22.2	16.6	24.0	4.1	4.3	4.1

	Number of life births per 1,000 people			Number of deaths per 1,000 people		
	total	urban	rural	total	urban	rural
Navoi						
2000	19.4	16.8	21.1	5.3	6.0	4.9
2001	19.1	16.4	20.9	5.1	5.5	4.8
2002	19.5	17.2	21.0	5.3	5.9	4.8
2003	18.9	17.0	20.2	5.0	5.6	4.6
2004	20.0	18.4	21.2	4.9	5.5	4.5
2005	19.9	18.1	21.1	5.3	5.9	4.9
Namangan						
2000	21.0	20.6	21.2	5.1	5.5	4.8
2001	20.6	23.7	18.8	4.7	5.3	4.4
2002	21.4	23.1	20.4	4.9	5.5	4.5
2003	20.0	20.2	19.8	5.0	5.4	4.7
2004	20.6	18.2	22.0	4.7	4.6	4.7
2005	20.2	18.0	21.5	4.9	4.8	4.9
Samarkand						
2000	22.7	16.6	25.0	5.3	6.2	4.9
2001	22.5	15.8	25.0	5.0	6.1	4.6
2002	22.9	16.6	25.2	5.1	6.2	4.8
2003	21.4	15.3	23.6	4.9	5.8	4.6
2004	22.0	17.0	23.7	4.7	5.6	4.4
2005	21.8	16.9	23.5	5.0	6.0	4.6
Surkhandarya						
2000	25.5	19.3	27.1	4.6	4.7	4.6
2001	22.8	17.9	24.0	4.3	4.5	4.3
2002	24.4	18.0	25.9	4.3	4.6	4.2
2003	22.5	17.6	23.7	4.3	4.5	4.3
2004	22.1	18.1	23.1	4.0	4.4	3.9
2005	21.9	18.5	22.7	4.3	4.4	4.3
Syrdarya						
2000	22.0	19.0	23.5	5.4	7.0	4.7
2001	21.4	19.2	22.4	5.3	6.9	4.6
2002	22.8	20.5	24.0	5.3	6.7	4.7
2003	20.5	18.5	21.4	5.2	7.0	4.4
2004	21.2	20.0	21.8	5.0	6.5	4.2
2005	21.2	21.5	21.0	5.5	7.3	4.7
Tashkent						
2000	18.5	16.2	20.0	6.4	8.0	5.4
2001	18.0	15.4	19.8	6.3	7.7	5.3
2002	18.7	16.1	20.5	6.5	7.8	5.6
2003	17.9	15.2	19.6	6.4	7.7	5.5
2004	19.7	17.3	21.2	6.2	7.5	5.3
2005	18.7	16.6	20.1	6.8	8.1	5.9

	Number of life births per 1,000 people			Number of deaths per 1,000 people		
	total	urban	rural	total	urban	rural
Fergana						
2000	19.7	17.3	20.8	5.3	6.4	4.9
2001	18.8	15.8	20.0	5.0	6.1	4.6
2002	20.0	16.9	21.3	5.2	6.3	4.7
2003	18.8	15.7	20.0	5.2	6.2	4.8
2004	21.1	18.3	22.3	4.8	5.7	4.5
2005	19.7	17.1	20.8	5.2	6.3	4.8
Khorezm						
2000	24.0	19.9	25.3	5.2	6.3	4.8
2001	22.3	18.1	23.6	4.9	6.0	4.5
2002	22.5	18.5	23.7	4.9	6.4	4.4
2003	20.8	17.4	21.9	5.0	5.9	4.7
2004	22.5	18.9	23.5	4.6	5.5	4.3
2005	21.7	19.3	22.4	4.6	5.6	4.3
Tashkent-city						
2000	14.5	14.5	-	8.5	8.5	-
2001	14.0	14.0	-	8.2	8.2	-
2002	14.7	14.7	-	8.6	8.6	-
2003	14.5	14.5	-	8.3	8.3	-
2004	16.0	16.0	-	8.0	8.0	-
2005	15.6	15.6	-	8.6	8.6	-

Table 26. Unemployment rate by regions*

	2000			2001		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	0.4	0.3	0.4	0.4	0.3	0.5
Republic of Karakalpakstan	1.7	1.9	1.5	1.7	1.6	1.7
Andijan	0.3	0.1	0.4	0.3	0.1	0.4
Bukhara	0.3	0.1	0.3	0.3	0.1	0.4
Djizzak	0.3	0.1	0.4	0.3	0.2	0.3
Kashkadarya	0.3	0.2	0.3	0.3	-	0.4
Navoi	1.0	0.6	1.6	0.5	0.4	0.7
Namangan	0.5	0.3	0.6	0.3	0.2	0.4
Samarkand	0.4	0.3	0.5	0.5	0.2	0.6
Surkhandarya	0.2	-	0.2	0.2	-	0.2
Syrdarya	0.4	0.3	0.5	0.7	0.5	0.8
Tashkent	0.1	0.1	0.1	0.1	0.1	0.1
Fergana	0.2	0.1	0.3	0.3	0.2	0.4
Khorezm	0.5	0.7	0.4	0.8	0.2	1.1
Tashkent-city	0.3	0.3	-	0.3	0.3	-

	2002			2003		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	0.4	0.3	0.4	0.3	0.2	0.4
Republic of Karakalpakstan	1.5	1.5	1.4	1.1	1.2	1.0
Andijan	0.3	0.1	0.4	0.2	-	0.2
Bukhara	0.1	0.1	0.2	0.1	-	0.1
Djizzak	0.3	0.3	0.4	0.2	0.1	0.2
Kashkadarya	0.2	-	0.3	0.2	-	0.3
Navoi	0.6	0.4	0.8	0.6	0.4	0.7
Namangan	0.3	0.1	0.4	0.4	0.2	0.6
Samarkand	0.5	0.3	0.6	0.3	0.1	0.5
Surkhandarya	0.2	0.1	0.2	0.3	0.1	0.4
Syrdarya	0.4	0.2	0.5	0.4	0.4	0.4
Tashkent	0.1	0.1	0.1	0.1	0.1	0.1
Fergana	0.2	0.1	0.3	0.1	0.1	0.2
Khorezm	1.0	0.9	1.0	1.3	0.2	1.7
Tashkent-city	0.2	0.2	-	0.2	0.2	-

	2004			2005		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	0.4	0.2	0.5	0.3	0.2	0.3
Republic of Karakalpakstan	1.0	0.7	1.4	1.0	1.2	0.9
Andijan	0.2	0.1	0.2	0.1	0.0	0.1
Bukhara	0.1	0.0	0.2	0.1	0.0	0.2
Djizzak	0.3	0.2	0.4	0.3	0.2	0.3
Kashkadarya	0.3	0.1	0.4	0.3	0.1	0.4
Navoi	0.9	0.5	1.2	0.6	0.3	0.8
Namangan	0.3	0.2	0.4	0.4	0.1	0.6
Samarkand	0.3	0.1	0.5	0.2	0.1	0.2
Surkhandarya	0.2	0.2	0.2	0.1	0.0	0.2
Syrdarya	0.4	0.4	0.5	0.2	0.1	0.3
Tashkent	0.1	0.1	0.1	0.1	0.1	0.1
Fergana	0.1	0.1	0.1	0.1	0.0	0.1
Khorezm	1.6	0.8	1.9	0.9	0.2	1.2
Tashkent-city	0.2	0.2	-	0.2	0.2	-

* Officially registered unemployment

Table 27. Ratio of employed in urban and rural areas (as % of total employed)

	2000			2001		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	100.0	46.4	53.6	100.0	44.7	55.3
Republic of Karakalpakstan	100.0	55.0	45.0	100.0	52.1	47.9
Andijan	100.0	39.1	60.9	100.0	34.5	65.5
Bukhara	100.0	41.5	58.5	100.0	38.2	61.8
Djizzak	100.0	38.3	61.6	100.0	38.0	62.0
Kashkadarya	100.0	26.6	73.4	100.0	27.7	72.3
Navoi	100.0	55.2	44.8	100.0	50.3	49.7
Namangan	100.0	42.2	57.8	100.0	41.5	58.5
Samarkand	100.0	38.5	61.5	100.0	37.0	63.0
Surkhandarya	100.0	28.5	71.5	100.0	28.1	71.9
Syrdarya	100.0	39.0	61.0	100.0	38.4	61.6
Tashkent	100.0	48.1	51.9	100.0	47.7	52.3
Fergana	100.0	38.4	61.6	100.0	36.0	64.0
Khorezm	100.0	31.7	68.3	100.0	27.7	72.3
Tashkent-city	100.0	100.0	-	100.0	100.0	-

	2002			2003		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	100.0	44.8	55.2	100.0	44.5	55.5
Republic of Karakalpakstan	100.0	51.8	48.2	100.0	51.8	48.2
Andijan	100.0	35.0	65.0	100.0	35.0	65.0
Bukhara	100.0	37.1	62.9	100.0	35.5	64.5
Djizzak	100.0	39.0	61.0	100.0	39.1	60.9
Kashkadarya	100.0	30.0	70.0	100.0	30.0	70.0
Navoi	100.0	47.9	52.1	100.0	44.7	55.3
Namangan	100.0	43.0	57.0	100.0	43.0	57.0
Samarkand	100.0	36.7	63.3	100.0	36.7	63.3
Surkhandarya	100.0	28.4	71.6	100.0	28.4	71.6
Syrdarya	100.0	36.6	63.4	100.0	35.6	64.4
Tashkent	100.0	49.5	50.5	100.0	49.5	50.5
Fergana	100.0	33.5	66.5	100.0	33.5	66.5
Khorezm	100.0	28.4	71.6	100.0	27.4	72.6
Tashkent-city	100.0	100.0	-	100.0	100.0	-

	2004			2005		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	100.0	44.0	56.0	100.0	43.0	57.0
Republic of Karakalpakstan	100.0	51.8	48.2	100.0	52.5	47.5
Andijan	100.0	33.7	66.3	100.0	32.8	67.2
Bukhara	100.0	33.6	66.4	100.0	32.8	67.2
Djizzak	100.0	39.0	61.0	100.0	42.2	57.8
Kashkadarya	100.0	30.0	70.0	100.0	30.0	70.0
Navoi	100.0	47.9	52.1	100.0	42.5	57.5
Namangan	100.0	42.9	57.1	100.0	43.7	56.3
Samarkand	100.0	35.9	64.1	100.0	32.3	67.7
Surkhandarya	100.0	27.1	72.9	100.0	27.0	73.0
Syrdarya	100.0	36.1	63.9	100.0	34.8	65.2
Tashkent	100.0	49.4	50.6	100.0	48.9	51.1
Fergana	100.0	31.8	68.2	100.0	30.3	69.7
Khorezm	100.0	27.0	73.0	100.0	26.1	73.9
Tashkent-city	100.0	100.0	-	100.0	100.0	-

II. ECONOMY

Table 28. Composition of GDP, %

	2000	2001	2002	2003	2004	2005
GDP – total:	100.0	100.0	100.0	100.0	100.0	100.0
Value added	87.5	88.1	87.4	86.3	85.9	89.4
industry	14.2	14.1	14.5	15.8	17.5	21.1
agriculture	30.1	30.0	30.1	28.4	26.4	26.3
construction	6.0	5.8	4.9	4.7	4.8	4.8
services	37.0	38.0	37.7	37.2	37.0	37.0
trade	10.8	11.7	11.0	10.1	9.6	8.8
transport and communications	7.7	7.5	8.2	9.4	10.2	10.6
other branches	18.7	19.0	18.7	17.9	17.4	17.8
Net taxes, including import taxes	12.5	11.9	12.6	13.7	14.1	10.6
Ratio between foreign trade turnover and GDP	45.4	57.0	59.3	66.2	72.7	69.6
exports	24.0	29.9	31.2	36.9	40.7	39.6
imports	21.4	27.1	28.1	29.3	32.0	30.0

Table 29. Share of medium and small entrepreneurship in gross regional product, 2003 (as % of GDP)

	Total*	Including	
		Small & medium enterprises	Individual business
Republic of Uzbekistan	38.2	21.5	8.9
Republic of Karakalpakstan	45.1	32.0	5.4
Andijan	35.8	12.3	11.7
Bukhara	40.7	21.9	8.0
Djizzak	58.3	37.1	8.5
Kashkadarya	34.9	20.3	7.0
Navoi	18.5	9.2	4.1
Namangan	45.2	20.4	12.1
Samarkand	49.9	22.3	12.3
Surkhandarya	42.8	21.3	7.8
Syrdarya	59.8	40.2	6.3
Tashkent	32.3	15.6	7.1
Fergana	40.8	22.8	9.2
Khorezm	47.1	24.8	9.0
Tashkent-city	46.4	30.7	15.7

* Dekhan farms included

Table 30. Employed at small, medium and micro enterprises by sectors in 2003

	Thousand people	As % of total	As % to 2004
Total	1375.6	100.0	112.8
industry	140.7	10.2	101.4
agriculture	856.0	62.2	116.0
construction	71.5	5.2	111.4
transportation	11.6	0.8	112.6
trade and public catering	102.4	7.4	102.2

Table 31. New private sector and informal sector

	2000	2001	2002	2003	2004	2005
Share of the population engaged in a new private sector as % of total employment	47.8	49.8	51.4	53.7	57.2	61.0
Share of the population engaged in an informal sector as % of total employment	41.3	44.5	46.2	48.6	51.9	55.5
Share of informal sector in GDP (%)	34.9	33.9	33.1	31.4	30.1	30.2

Table 32. Investments by sectors and sources, %

	2000	2001	2002	2003	2004	2005
Total	100.0	100.0	100.0	100.0	100.0	100.0
for production purposes	57.5	63.1	59.5	63.6	66.0	68.2
industry	29.7	38.9	32.9	29.0	29.0	32.6
agriculture and forestry	5.7	5.5	6.7	5.0	4.3	4.4
for non-production purposes	42.5	36.9	40.5	36.4	34.0	31.8
Financed by state budget	29.2	21.5	23.9	16.4	14.4	12.2

Table 33. Social and cultural amenities in operation

	2000			2001		
	total	urban	rural	total	urban	rural
Comprehensive schools (thousand seats)	17.3	0.1	17.2	26.9	1.6	25.3
Pre-school establishments (thousand seats)	-	-	-	-	-	-
Hospitals (thousand beds)	0.7	0.4	0.3	0.8	0.4	0.4
Policlinics (thousand visits in shifts)	8.3	0.5	7.8	13.5	0.4	13.1
Clubs and cultural buildings (thousand seats)	0.2	-	0.2	-	-	-

	2002			2003		
	total	urban	rural	total	urban	rural
Comprehensive schools (thousand seats)	19.3	1.6	17.7	22.4	2.0	20.4
Pre-school establishments (thousand seats)	0.1	-	0.1	-	-	-
Hospitals (thousand beds)	0.3	0.1	0.2	0.2	-	0.2
Policlinics (thousand visits in shifts)	16.8	0.2	16.6	16.1	1.0	15.1
Clubs and cultural buildings (thousand seats)	0.4	-	0.4	…	…	…

	2004			2005		
	total	urban	rural	total	urban	rural
Comprehensive schools (thousand seats)	19.9	2.6	17.3	128.7	24.2	104.5
Pre-school establishments (thousand seats)	0.2	0.2	-	-	-	-
Hospitals (thousand beds)	0.2	0.2	-	0.9	0.6	0.3
Policlinics (thousand visits in shifts)	12.6	0.5	12.1	13.5	0.5	13.0
Clubs and cultural buildings (thousand seats)	0.4	-	0.4	-	-	-

III. Education

Table 34. Pre-school enrolment (as % of all pre-school aged children)

	2000	2001	2002	2003	2004	2005
Total	18.2	19.4	19.9	19.2	19.3	19.0
Urban	35.3	36.0	35.5	35.3	35.7	35.0
Rural	10.6	12.0	12.9	12.1	12.1	12.0

Table 35. Enrolment in specialized secondary and higher schools

	2000	2001	2002	2003	2004	2005
Specialized secondary students (thousand)	324.1	446.1	545.9	684.0	788.0	890.7
of which women (%)	49.0	47.1	46.1	46.3	46.9	47.6
Number of students in higher schools (thousand)	183.6	207.2	232.3	254.4	263.6	278.7
of which women (%)	37.8	38.7	38.9	38.8	40.7	40.9

IV. HEALTHCARE

Table 36. Number of people per doctor, nurse and hospital bed

	2000			2001		
	doctor	nurse	bed	doctor	nurse	bed
Republic of Uzbekistan	305	96	179	309	95	179
Republic of Karakalpakstan	347	95	212	350	93	211
Andijan	321	96	158	326	97	162
Bukhara	313	82	202	303	83	208
Djizzak	431	108	198	437	107	201
Kashkadarya	363	100	203	376	98	198
Navoi	330	93	214	332	91	209
Namangan	343	99	168	354	100	170
Samarkand	308	114	181	312	114	185
Surkhandarya	393	111	233	400	108	207
Syrdarya	361	83	155	365	85	153
Tashkent	389	96	212	398	98	214
Fergana	397	90	163	407	89	166
Khorezm	337	103	199	342	103	196
Tashkent-city	125	76	121	124	77	121

	2002			2003		
	doctor	nurse	bed	doctor	nurse	bed
Republic of Uzbekistan	314	96	173	318	96	174
Republic of Karakalpakstan	353	93	171	357	96	167
Andijan	331	99	162	330	99	164
Bukhara	300	83	213	281	81	215
Djizzak	463	110	204	463	109	205
Kashkadarya	389	98	179	390	97	179
Navoi	333	90	190	335	90	191
Namangan	359	99	151	365	96	151
Samarkand	317	118	190	319	118	190
Surkhandarya	417	108	211	420	106	213
Syrdarya	391	84	151	404	85	155
Tashkent	409	101	215	411	102	220
Fergana	407	86	167	409	85	170
Khorezm	348	102	183	343	102	184
Tashkent-city	125	77	116	133	79	117

	2004			2005		
	doctor	nurse	bed	doctor	nurse	bed
Republic of Uzbekistan	334	98	182	344	97	185
Republic of Karakalpakstan	392	98	169	406	98	168
Andijan	366	105	167	380	104	172
Bukhara	290	83	216	290	83	213
Djizzak	474	111	209	511	108	212
Kashkadarya	432	99	190	449	99	194
Navoi	338	93	191	341	90	192
Namangan	399	98	155	411	98	157
Samarkand	333	118	192	343	118	196
Surkhandarya	451	107	224	483	106	230
Syrdarya	420	86	157	437	84	159
Tashkent	438	104	222	462	102	224
Fergana	424	90	211	436	87	219
Khorezm	358	105	198	358	105	202
Tashkent-city	131	77	118	133	78	118

Table 37. Mortality rate by selected causes of death and regions (per 100,000 people)

	2000	2001	2002	2003	2004	2005
Republic of Uzbekistan						
all causes of death	548.0	528.9	540.2	529.7	502.1	535.3
from circulatory illnesses	288.5	282.3	296.3	289.7	274.0	301.3
from malignant tumors	38.8	37.4	37.3	37.2	36.6	37.4
from respiratory illnesses	63.5	55.1	54.5	49.0	42.9	43.6
Republic of Karakalpakstan						
all causes of death	559.6	586.0	591.2	557.0	523.9	584.4
from circulatory illnesses	180.9	191.8	213.8	188.9	183.3	239.6
from malignant tumors	40.0	44.4	34.0	39.6	41.2	38.9
from respiratory illnesses	120.1	107.5	122.7	114.9	91.7	93.1
Andijan						
all causes of death	521.6	495.5	519.1	517.1	485.9	516.3
from circulatory illnesses	293.6	276.9	299.6	246.9	219.1	233.6
from malignant tumors	30.8	27.1	30.8	34.2	29.3	34.6
from respiratory illnesses	63.7	61.6	52.4	42.1	35.5	39.2
Bukhara						
all causes of death	469.7	454.6	458.4	463.2	450.1	451.2
from circulatory illnesses	263.2	257.5	258.0	261.6	245.5	259.9
from malignant tumors	31.7	30.5	33.8	32.4	34.9	37.3
from respiratory illnesses	42.5	38.6	37.6	42.9	44.6	43.5
Djizzak						
all causes of death	435.8	434.1	440.1	423.2	399.4	423.5
from circulatory illnesses	190.7	190.7	207.6	204.9	199.2	214.3
from malignant tumors	30.0	29.6	32.2	30.6	30.6	34.0
from respiratory illnesses	61.3	57.9	50.5	46.9	38.3	39.0
Kashkadarya						
all causes of death	439.6	443.0	435.4	411.8	398.5	413.6
from circulatory illnesses	204.7	212.6	231.2	225.0	230.6	244.4
from malignant tumors	22.3	21.4	17.4	20.6	20.0	18.7
from respiratory illnesses	74.6	69.5	59.9	43.0	39.0	37.1
Navoi						
all causes of death	534.7	510.7	525.2	499.9	487.6	531.4
from circulatory illnesses	267.3	254.3	268.9	261.6	255.0	296.9
from malignant tumors	50.0	49.8	51.0	46.7	43.6	46.0
from respiratory illnesses	43.8	38.9	33.7	32.9	26.4	24.7
Namangan						
all causes of death	508.0	474.0	489.0	497.6	467.7	487.5
from circulatory illnesses	266.8	256.4	287.2	300.8	279.5	287.1
from malignant tumors	27.8	25.8	26.6	28.0	26.4	30.4
from respiratory illnesses	91.2	63.6	60.6	56.6	52.0	52.9
Samarkand						
all causes of death	527.0	499.7	513.0	489.9	474.2	499.6

	2000	2001	2002	2003	2004	2005
from circulatory illnesses	285.1	280.5	284.3	263.3	287.9	306.9
from malignant tumors	32.7	28.8	25.8	27.8	26.2	25.0
from respiratory illnesses	63.0	53.5	56.9	50.4	46.8	43.3
Surkhandarya						
all causes of death	464.2	443.8	428.6	434.4	399.2	431.5
from circulatory illnesses	220.1	219.8	216.8	234.7	227.6	253.4
from malignant tumors	25.4	27.5	23.5	23.3	23.4	27.0
from respiratory illnesses	74.5	60.5	52.2	50.4	38.3	39.3
Syrdarya						
all causes of death	542.4	530.7	530.5	519.4	496.7	547.9
from circulatory illnesses	276.6	276.5	282.6	286.6	265.5	304.2
from malignant tumors	44.6	35.3	43.8	36.4	37.4	38.5
from respiratory illnesses	40.0	36.2	40.8	38.7	35.9	35.5
Tashkent						
all causes of death	644.6	625.6	650.2	641.4	617.3	677.8
from circulatory illnesses	363.5	358.8	366.2	379.3	338.3	372.2
from malignant tumors	49.4	48.7	50.1	48.3	49.1	48.1
from respiratory illnesses	42.8	35.5	45.7	37.7	26.8	40.1
Fergana						
all causes of death	534.4	504.2	516.9	519.7	481.6	520.3
from circulatory illnesses	279.7	274.9	294.4	306.8	271.1	309.5
from malignant tumors	30.9	31.4	32.9	29.6	31.6	30.9
from respiratory illnesses	55.3	43.0	44.3	43.8	44.6	37.3
Khorezm						
all causes of death	520.0	488.6	489.5	497.8	457.7	461.4
from circulatory illnesses	291.4	286.9	286.9	296.4	274.5	289.5
from malignant tumors	29.9	28.6	30.8	27.7	29.1	30.6
from respiratory illnesses	77.4	69.1	59.7	46.7	43.2	44.7
Tashkent-city						
all causes of death	845.1	819.6	863.8	832.9	796.1	859.9
from circulatory illnesses	522.8	495.3	523.9	492.7	460.6	520.3
from malignant tumors	97.7	94.1	97.1	95.8	92.0	92.0
from respiratory illnesses	32.2	35.3	40.2	40.0	35.4	39.1

Table 38. Infant mortality rate (number of children dying under age one, per 1,000 life births)

	2000			2001		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	18.9	22.4	17.3	18.3	21.2	17.0
Republic of Karakalpakstan	20.5	23.0	18.5	22.3	26.2	19.3
Andijan	15.2	22.4	12.1	15.1	21.0	12.6
Bukhara	19.0	23.3	17.6	18.0	23.0	16.5
Djizzak	16.2	18.7	15.5	17.0	18.8	16.5
Kashkadarya	19.0	20.1	18.7	18.8	19.3	18.6
Navoi	18.4	25.0	14.8	17.4	21.2	15.5
Namangan	18.8	26.7	14.2	17.9	20.2	16.2
Samarkand	16.0	17.1	15.8	15.9	18.6	15.3
Surkhandarya	20.7	24.9	19.9	18.5	22.0	17.8
Syrdarya	20.4	21.5	20.0	19.7	19.1	19.9
Tashkent	19.6	20.2	19.3	17.1	17.6	16.9
Fergana	19.3	21.0	18.7	19.9	21.0	19.5
Khorezm	24.6	46.0	19.4	19.9	32.8	16.8
Tashkent-city	19.5	19.5	-	20.8	20.8	-

	2002			2003		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	16.7	19.9	15.3	16.4	20.5	14.5
Republic of Karakalpakstan	19.9	24.0	16.7	18.3	20.1	16.9
Andijan	13.6	18.3	11.7	13.8	18.9	11.9
Bukhara	15.1	20.3	13.5	14.9	22.0	12.5
Djizzak	13.9	14.7	13.7	13.9	18.3	12.5
Kashkadarya	17.2	18.4	16.9	14.7	16.7	14.1
Navoi	14.1	16.6	12.7	15.7	20.5	13.0
Namangan	16.8	20.6	14.2	15.8	20.1	13.1
Samarkand	15.1	17.0	14.6	13.7	14.6	13.5
Surkhandarya	15.8	20.0	15.1	14.7	18.5	14.0
Syrdarya	18.0	18.6	17.8	17.9	18.5	17.7
Tashkent	16.8	17.5	16.4	15.2	16.6	14.5
Fergana	18.2	18.7	18.0	20.0	24.6	18.5
Khorezm	19.3	31.8	16.4	18.9	26.1	17.2
Tashkent-city	20.9	20.9	-	24.9	24.9	-

	2004			2005		
	total	urban	rural	total	urban	rural
Republic of Uzbekistan	15.4	18.9	13.8	14.9	18.6	13.3
Republic of Karakalpakstan	18.4	22.0	15.2	17.4	20.2	14.9
Andijan	14.0	20.2	11.8	12.3	18.5	10.1
Bukhara	14.0	16.5	13.2	12.0	11.5	12.2
Djizzak	12.0	11.1	12.3	12.3	13.2	11.9
Kashkadarya	14.0	14.3	13.9	13.8	14.3	13.7
Navoi	12.6	16.2	10.5	10.9	12.8	9.8
Namangan	14.0	17.1	12.5	15.1	22.8	11.3
Samarkand	12.2	12.0	12.2	12.7	14.8	12.1
Surkhandarya	11.6	16.1	10.8	11.6	14.7	11.0
Syrdarya	18.1	17.4	18.4	16.7	18.0	16.2
Tashkent	15.6	16.8	15.0	15.4	16.4	14.9
Fergana	20.1	23.1	19.2	19.3	21.3	18.6
Khorezm	17.1	26.9	14.8	16.3	23.5	14.5
Tashkent-city	22.6	22.6	-	22.3	22.3	-

V. ECOLOGY

Table 39. Amount harmful emissions into the atmosphere (thousand tons per year)

	2000	2001	2002	2003	2004	2005
Tashkent	12.7	10.9	10.5	11.6	9.7	9.5
Andijan	9.7	8.7	9.5	8.9	6.3	10.1
Navoi	28.1	27.9	23.5	24.2	23.9	28.1
Samarkand	7.0	6.6	5.9	5.5	5.1	3.8
Almalyk	99.3	98.8	97.3	99.3	107.7	113.8
Angren	116.3	91.7	101.8	93.1	99.0	91.7
Bekabad	7.2	13.0	13.4	9.1	8.7	6.8
Chirchik	5.7	5.2	4.9	4.1	7.6	3.8
Kokand	3.7	3.8	3.3	3.4	1.3	1.1
Fergana	47.1	44.1	46.6	41.5	38.4	30.6
Margilan	0.1	0.1	0.1	0.1	0.02	0.02
Nukus	4.1	4.4	3.1	2.8	3.4	1.3
Urgench	3.7	6.8	6.6	6.1	4.4	4.3
Bukhara	3.3	3.1	2.1	1.8	2.2	1.4
Djizzak	0.8	0.8	0.8	0.7	0.9	0.4
Karshi	2.4	2.2	1.7	5.7	3.1	24.0
Namangan	3.4	4.5	4.1	4.0	1.2	1.1
Termez	0.6	1.0	0.3	1.6	09	0.4
Gulistan	0.7	0.6	0.6	0.6	0.5	0.7

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