Millennium Development Goals in Kazakhstan

2005

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Foreword

Dear Friends,

The Millennium Development Goals Report for Kazakhstan is being released in the year of the 60th anniversary of the United Nations and the fifth anniversary of the historic Millennium Summit. These circumstances lend a special significance to the work of the authors of this report, who, in close cooperation with the Government of Kazakhstan, present an assessment both of what has been done and what is currently being done in our country for the implementation of the commitments undertaken with the adoption of the Millennium Development Goals. The results of this assessment are especially important on the eve of the High Level plenary meeting of the UN General Assembly, or UN Summit, which is to commence on September 14. At this time, the review of the realization of the Millennium Declaration and an integrated follow-up to the major UN conferences and summits in economic, social, and cross-cutting spheres will take place.

Kazakhstan fully maintains its commitment to the timely and effective achievement of the MDGs and other goals in the development field. The implementation of these pledges would not have been possible without focused state policies which mainly emphasize the improvement of the social, economic, and political situation in Kazakhstan. As was highlighted in President Nazarbayev's address to the people of Kazakhstan in February of 2005, the Government is already covering all expenses related to the achievement of such MDGs as reduction of child mortality and improvement of maternal health.

At the same time, the achievements already attained in social and economic spheres do not give us the right to stop working toward even better results. The present report provides us with an opportunity to examine both the progress that has been achieved and those obstacles that we still have to overcome in order to achieve the set goals.

The upcoming World Summit will be crucial in identifying the future strategy of the international community for the effective and timely implementation of the commitments in the development area we undertook five years ago. Kazakhstan attaches high hopes to the Summit and will take an active part in its work.

Frank, objective, and analytical assessments, like this report on the MDGs in Kazakhstan, should help all of us to better understand the condition and needs of our people and to focus and unite our efforts on improving the quality of life for all Kazakstahnis.

We appreciate the assistance of the United Nations in promoting MDGs in Kazakhstan and look forward to continued close and fruitful cooperation.

KASSYMZHOMART TOKAEV

Minister of Foreign Affairs of the Republic of Kazakhstan

Foreword

It is an honour and a pleasure to present the Millennium Development Goals in Kazakhstan Report, which you now have in your hands.

This year is a crucial benchmark for the MDGs as this September leaders of all nations will reconvene at the World Summit in New York to review the progress of the Millennium Development Goals, a set of agreed-upon development targets aimed at improving the lives of millions of people around the globe.

The 2005 report is already the second MDG Report for Kazakhstan. The initial report, jointly produced in 2002 by the Government of Kazakhstan and the UN system, became the first of its kind in Eastern Europe and the CIS, which demonstrated the country's openness to a frank assessment of national progress towards the MDGs and eagerness to work for their attainment.

As you will see in the enclosed document and in the full version of the report, Kazakhstan has already achieved a number of MDGs and demonstrates impressive progress on others, such as poverty reduction, access to education, and promotion of women's rights. Some of the greater challenges lie in the areas of healthcare, quality of education, and environmental sustainability. These challenges, however, are not insurmountable obstacles, but issues that should and can be tackled and resolved together by the Government, civil society, and international organizations.

Kazakhstan has gone a long way since gaining independence. In little over a decade, it evolved from a fragile new country to a politically stable, internationally respected, and dynamically developing state. Having demonstrated remarkable economic growth in the past several years, Kazakhstan now possesses all the needed will and resources to more actively address the social dimension of progress and translate economic achievement into equitable human development, improving the well-being and expanding the opportunities of all citizens.

Young, dynamic, and endowed with rich mineral and human resources, Kazakhstan has a lot to look forward to, and the UN System will continue to provide assistance and strive together with the Government, civil society, academia, and international partners for Kazakhstan's progress towards the MDGs.

YURIKO SHOJI

UN Resident Coordinator in the Republic of Kazakhstan

List of Abbreviations

ADB	Asian Development Bank
CRC	Central rayon clinic
CSD	Council on Sustainable Development of the Republic of Kazakhstan
DAC	Donor Assistance Committee of Organisation for Economic Co-operation and Development
EBRD	European Bank for Reconstruction and Development
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GNI	Gross National Income
GOST	State standards
GRP	Gross Regional Product
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit/ German Society for Technical Cooperation
IBRD	International Bank of Reconstruction and Development
IDB	Islamic Development Bank
IFI	International Financial Institute
JICA	Japanese International Cooperation Agency
KazRIEC	Kazakh Research Institute for Ecology and Climate
MoES	Ministry of Education and Science of the Republic of Kazakhstan
MoH	Ministry of Healthcare of the Republic of Kazakhstan
MM	Maternal mortality
NEAPSD	National Environmental Action Plan for Sustainable Development in the Republic of Kazakhstan
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PHC	Primary healthcare
RSRCMCHP	Republican Scientific Research Center on Maternal and Child Health Protection
RK	Republic of Kazakhstan
SD	Sustainable development
SES	Sanitary and epidemiological station
SNR	Sanitary norms and regulations
SPA	Specially protected area
SVA	Family outpatient services
UK	United Kingdom
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNIFEM	United Nations Development Fund for Women
USAID	United States Agency for International Development
WB	World Bank
WHO	World Health Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization

Introduction

In September 2000 in New York, 147 heads of state and government convened at the World Summit, making this the largest gathering of world leaders in history. The Millennium Declaration, which was adopted at the summit, identified a range of common issues that required determined collective actions of the international community in order to build a safer world for all in the 21st century – peace and security, development and poverty eradication, environmental protection, human rights and democracy, and the strengthening of the United Nations.

Poverty, hunger, HIV/AIDS and other major diseases, illiteracy, climate change, and the lack of clean drinking water are common challenges for all humanity. That is why world leaders identified a set of common inter-related tasks, known as Millennium Development Goals:

Goal 1: Eradicate extreme poverty and hunger

Goal 2: Achieve universal primary education

Goal 3: Promote gender equality and empower women

Goal 4: Reduce child mortality

Goal 5: Improve maternal health

Goal 6: Combat HIV/AIDS, malaria, and other diseases

Goal 7: Ensure environmental sustainability.

A specific commitment for a partnership between the developed and developing countries for tackling common problems was also articulated:

Goal 8: Develop Global Partnership for Development.

It is very important that MDGs translate into concrete measures through the establishment of eighteen quantifiable and time-bound (between 1990 and 2015) targets. It is equally significant that all nations pledged to work for the advancement of common goals and did so at the highest level.

Regular progress reviews at the global, regional, and country levels are critical to ensure that the goals do not turn into mere declarations. A common list of more than 40 indicators (for the list please see the Annex) was internationally adopted for MDG monitoring. Having endorsed the MDGs, all parties also agreed to closely monitor the advancement of MDGs and prepare periodic reports accordingly.

This year is a crucial benchmark for the MDGs as this September, leaders of all nations reconvene at the World Summit in New York to review the implementation of the Millennium Declaration, which will include discussing the progress on the Millennium Development Goals, and setting an agenda for further promotion of the 2015 goals.

The 2005 report is already Kazakhstan's second report on MDGs. The report was commissioned to individual authors by the UN System in Kazakhstan and the Government of Kazakhstan. It also benefited from external reviews and comments. In order to ensure an accurate assessment and a balanced approach, the draft of the report was shared with national and international partners, whose feedback was appropriately reflected.

Kazakhstan has already achieved impressive progress on some MDGs, while on others challenges still remain. The purpose of the report is to provide decision makers and all stakeholders with an analysis of Kazakhstan's situation up to date – how far the country has come, what the reasons for regional disparities are, and how far the country has to go for further advancement of the MDGs.

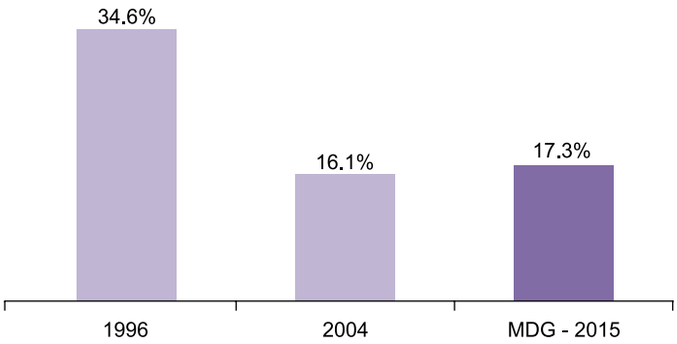
Since the MDGs are closely linked to the priorities and goals of Kazakhstan's development agenda set out in «Kazakhstan-2030», «Kazakhstan-2010», and State and Sectoral programs and policies, this publication on the Millennium Development Goals in Kazakhstan, available in Kazakh, Russian, and English, can be a useful resource on Kazakhstan's development situation for many of our counterparts, both national and international. There is also a shorter version of this publication – Overview of the Millennium Development Goals in Kazakhstan. Electronic version of the both documents are available at the web-site of the UN System in Kazakhstan at www.un.kz.

MDG 1 Eliminate Extreme Poverty and Hunger

Target 1:

Halve, between 1990 and 2015, the proportion of people with income below the subsistence minimum

Proportion of people with income (used for consumption) below the subsistence minimum



What is the poverty line in Kazakhstan?

The international poverty line equals 1.08 US dollars PPP a day. For Central Asian countries, World Bank recommends the more acceptable poverty line of 2.15 US dollars PPP a day, and for Central and Eastern Europe – 4.3 US dollars PPP a day.

In Kazakhstan, the subsistence minimum defined to measure poverty rate in accordance with the Law on Subsistence Minimum (1999) amounted to 3.5-3.7 US Dollars PPP during 2002-2004. Thus the subsistence minimum adopted in Kazakhstan complies with the international poverty line used for comparisons between transition economies.

According to the Law on Subsistence Minimum of the Republic of Kazakhstan, a special «poverty line» is established to assign social assistance. Before 2002, this administrative poverty line was 38% of the subsistence minimum, and since 2002 – 40%, which was due to the economic capacity of regional budgets.

The baseline year for Target 1 is 1996, as due to the economic transition in the 1990s it has more relevance for comparison than the year 1990. In 2004, Kazakhstan already achieved the Millennium Development Goal 1, Target 1: **to reduce by half the proportion of people with income below the subsistence minimum**. However, poverty is still a serious problem, especially in rural areas.

The official poverty line in Kazakhstan is the subsistence minimum, which in 2000-2004 amounted to 3.5-3.7 US dollars PPP[1]. People with income below the subsistence minimum are considered poor. ***Poverty incidence*** is measured by the proportion of people whose income is less than the subsistence minimum. ***Subsistence minimum*** is the minimum per capita income equal to the cost of the ***minimum consumer basket***, which consists of the food basket (70%) and non-food items and services (30%).

The cost of the ***minimum food basket*** is revised every month for every region and is calculated by multiplying the food consumption standards, developed by the Kazakh National Nutrition Academy (KNA), by the average mid-month prices.

Income is considered the population's ***income used for consumption*** (or household income), which is composed of both the amount of monetary income spent on consumption and consumption of self-produced goods. According to a statistical survey of 12,000 households, self-produced goods amounted to 10.6% of income used for consumption in 2004[2].

Apart from poverty incidence, poverty depth and severity are important indices used to create a better picture of the nature of poverty. ***Poverty depth*** is the average income shortfall of the poor as a proportion of the poverty line (subsistence minimum) applied to the whole population.

An additional characteristic is the ***poverty severity***, which shows income inequality among the poor – the variation of income of the poor from the average. The poverty severity index shows how poor the poorest person in the country is, i.e., characterizes inequality among the poor.

One of the indicators that measures income inequality is the ***assets coefficient*** – a ratio of the income of the richest 10% to the income of the poorest 10% of society.

[1] PPP (Purchasing Power Parity) is the amount of local currency needed to purchase the same set of goods and services as could be purchased in the USA for $1.

[2] Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

Table 1.1. Poverty incidence in Kazakhstan in 1998-2004

Poverty Indicators	1998	1999	2000	2001	2002	2003	2004
Subsistence minimum, tenge	3,336	3,394	4,007	4,596	4,761	5,128	5,427
Proportion of people with income below the subsistence minimum, %	39.0	34.5	31.8	28.4	24.2	19.8	16.1
Poverty depth, %	12.8	13.7	10.3	7.8	6.1	4.6	3.3
Poverty severity, %	3.8	5.5	4.0	3.1	2.2	1.6	1.0
Food basket, tenge	2,601	2,376	2,805	3,217	3,333	3,788	3,799
Proportion of people with income below the food basket, %	16.2	14.5	11.7	11.7	8.9	6.3	4.3

Source: Agency on Statistics of the Republic of Kazakhstan[3]

Table 1.2.Economic inequality in Kazakhstan in 1998-2004

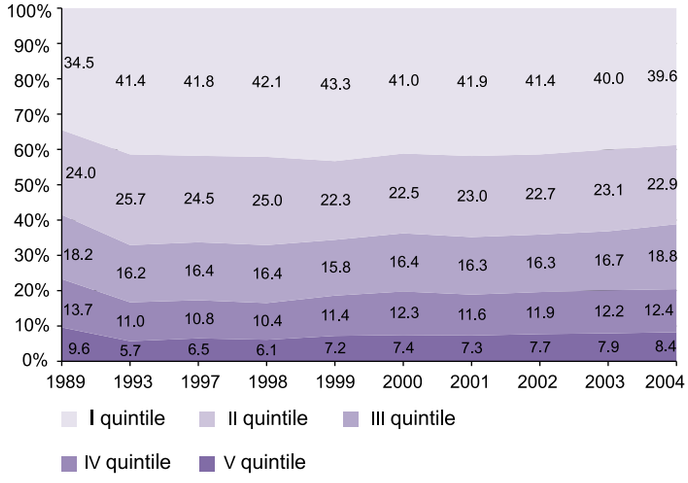
	1998	1999	2000	2001	2002	2003	2004
Assets coefficient (ratio of richest 10% to poorest 10%), times	11,3	9,4	8,3	8,8	8,1	7,4	6,8
Income concentration coefficient (Gini index)	0,347	0,332	0,307	0,322	0,312	0,300	0,291

Source: Agency on Statistics of the Republic of Kazakhstan[4]

Another income inequality indicator is the ***Gini coefficient***, which ranges from 0 (absolute income equality) to 1(absolute inequality), or from 0% to 100%. The Gini coefficient value of 0.2-0.3 (20-30%) refers to moderate inequality, 0.3-0.4 (30-40%) – perceptible inequality, and 0.4-0.5 (40-50%) – significant inequality.

Poverty can also be characterized by the proportion of the poorest quintiles in the total national consumption. The proportion of income of the richest population may be reduced in favor of the poorest. However, in Kazakhstan during the transition period, the proportion of the poorest quintile increased, while the richest quintile practically stayed the same[5].

Graph 1.1. Distribution of household income by quintile groups in Kazakhstan, 1989-2004, %



Source: Agency on Statistics of the Republic of Kazakhstan[6].

[3] Living Standards and Poverty in Kazkahstan. Statistical Monitoring. Agency on Statistics of the Republic of Kazakhstan, UNDP. Almaty, 2004. Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

[4] Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

[5] Poverty Monitoring Indicators in the Republic of Kazakhstan. Edited by A.A. Smailov. Agency on Statistics of the Republic of Kazakhstan. UNDP. Almaty, 2003. Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

[6] Poverty Monitoring Indicators in the Republic of Kazakhstan. Edited by A.A. Smailov. Agency on Statistics of the Republic of Kazakhstan. UNDP. Almaty, 2003. Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

Significance for Kazakhstan

Poverty reduction is one of the priorities of the Government of Kazakhstan within the framework of implementing the long-term development Strategy Kazakhstan-2030. To this end, a micro crediting program is being implemented, national fund in support of the poor was created, and the Poverty and Unemployment Reduction Program for 2000-2002 was adopted and implemented[7]. Within this Program, the Law on Targeted Social Assistance was put in effect in early 2002.

In 2002, the Ministry of Economy and Trade of Kazakhstan, with the assistance of ADB and UNDP, developed the State Poverty Reduction Program for 2003-2005[8]. The Program envisaged reducing by 2005 the incidence of poverty by a third, compared to 2002. This goal was already achieved in 2004.

As employment is one of the key aspects of poverty reduction efforts, assisting people in securing employment is one of the priorities in the social and labor section of the Strategic Development Plan of Kazakhstan till 2010[9]. The Government will have to implement measures on supporting the development of entrepreneurship and, consequently, increasing employment.

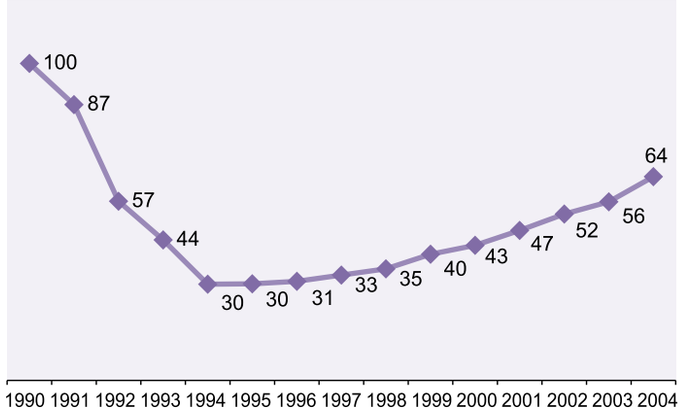
Low wages are another problem. Up to 2004, the minimum wage in the country was below the subsistence minimum, amounting to only 62.1% of this quantity in 2000[10]. Later, due to consistent Government policies, the minimum wage increased, reaching 97.5% of the subsistence minimum in 2003 and exceeding it in 2004.

Target 1 progress in Kazakhstan

Economic recession in Kazakhstan during 1992-1996 affected the population's income, making it inadequate for the level of consumer prices. During this period, net remuneration fell to a third of its 1991 level[11]. In the following years, in spite of the significant increase in net remuneration, its level in 2004 was only 64% of that in 1990 (Graph 1.2).

During the economic recession of 1992-1996, household expenditures on end consumption declined by 47%[12]. In 1997-2004, active income increased by 37.7%, which did not, however, compensate for the earlier drop in the level of real monetary income[13]. Thus, during the transition period, there was an overall decline in the population's income in Kazakhstan.

Graph 1.2. Dynamics of net remuneration in Kazakhstan in 1990-2004, as % of 1990



Source: Data of the Agency on Statistics of the Republic of Kazakhstan[14].

In 2004, the difference in wage level by region was 2.9 times, but in the regions with higher wages the cost levels were also higher, the difference amounting to 1.5 times[15]. As a result, the wage level, taking into account the ratio between the values of the subsistence minimum on national and regional levels, is decreasing. This is especially evident in Atyrau and Mangystau oblasts, where the subsistence minimum is higher than the national average and consequently, the relative wage level decreases by 21-24%. This means that the relative difference in wage levels between oblasts is less, and actual wages in a number of oblasts are lower if the price levels are taken into account.

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7 Poverty and Unemployment Reduction Program for 2000-2002. Government Resolution #833 of June 3, 2000.

8 State Poverty Reduction Program for 2003-2005. Government Resolution #296 of March 26, 2003.

9 Strategic Development Plan of the Republic of Kazakhstan till 2010. President's Decree #735 of December 4, 2001.

10 Living Standards and Poverty in Kazakhstan. Statistical Monitoring. Agency on Statistics of the Republic of Kazakhstan, UN TG on Poverty Alleviation, Almaty, 2004.

11 Ten Years of Transition. Project MONEE. CEE/CIS/Baltics. Regional monitoring report #8. UNICEF, 2001.

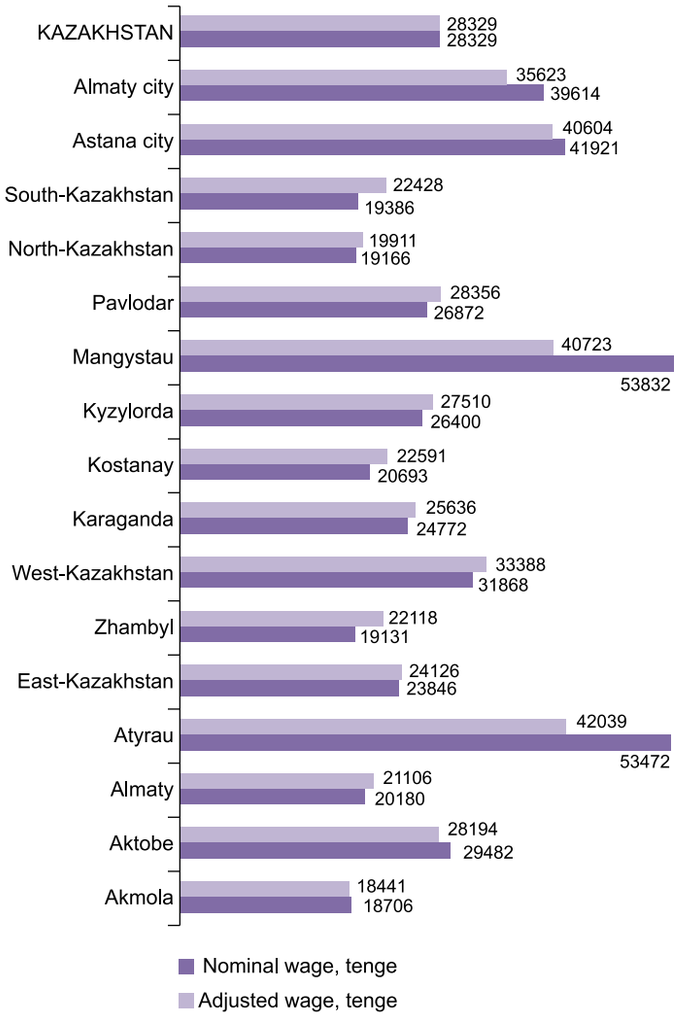
12 Ten Years of Transition. Project MONEE. CEE/CIS/Baltics. Regional monitoring report #8. UNICEF, 2001.

13 Poverty Monitoring Indicators in Kazakhstan. Almaty. Agency on Statistics, UNDP, 2003; Living Standards and Poverty in Kazakhstan. Statistical monitoring. Almaty. Agency on Statistics, UNDP, 2004. Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

14 Living Standards and Poverty in Kazakhstan. Statistical Monitoring. Agency on Statistics of the Republic of Kazakhstan, UN TG on Poverty Alleviation, Almaty, 2004. Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

15 Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

Graph 1.3. Nominal wages and wages adjusted by the ratio of the national and regional subsistence minimum, by oblast of Kazakhstan in 2004



Source: The adjusted wage is calculated according to the data of the Agency on Statistics on basis of nominal wage and subsistence minimum[16].

Characteristics of poverty in Kazakhstan

The main causes of poverty in Kazakhstan are unemployment and low income. Despite the economic growth, the proportion of low-paid employees has stayed more or less constant. The proportion of self-employed people has increased with additional challenges due to the typically low salaries and insufficient coverage of social protection.[17] Further, low educational qualifications and household size are factors increasing the poverty risk[18].

Poverty in Kazakhstan differs greatly by region

Table 1.3. Poverty levels by regions of Kazakhstan in 2004

Grouping by poverty level	Regions
Low (1-3%)	Almaty, Astana cities
Medium (12-15.2%)	North-Kazakhstan, Akmola, Aktobe, East-Kazakhstan, West-Kazakhstan, Almaty, Karaganda and Pavlodar oblasts
High (>18%)	Kostanay, Atyrau, Mangystau, Zhambyl, South-Kazakhstan and Kyzylorda oblasts

Source: Data of the Agency on Statistics of the Republic of Kazakhstan[19]

There are drastic regional disparities in the incidence of poverty in Kazakhstan. In 1999, the ratio between the highest and lowest poverty rate in oblasts was 4.1, rising to 26.5 in 2004. The situation was the least grave in the cities of Astana and Almaty, where the proportion of people with income below the subsistence minimum was only 1.1% and 2.8%, respectively.

Two northern grain-growing regions (North-Kazakhstan and Akmola oblasts), five industrial regions (Aktobe, East-Kazakhstan, West-Kazakhstan, Karaganda and Pavlodar oblasts), and Almaty oblast belong to the regions with medium poverty rates (12% –15%).

The highest poverty rate is registered in Atyrau oblast (29.1% in spite of the highest GRP per capita and high wages). A high incidence of poverty (18% and above) was also registered in Mangystau, Kostanay, and all southern regions except Almaty oblast.

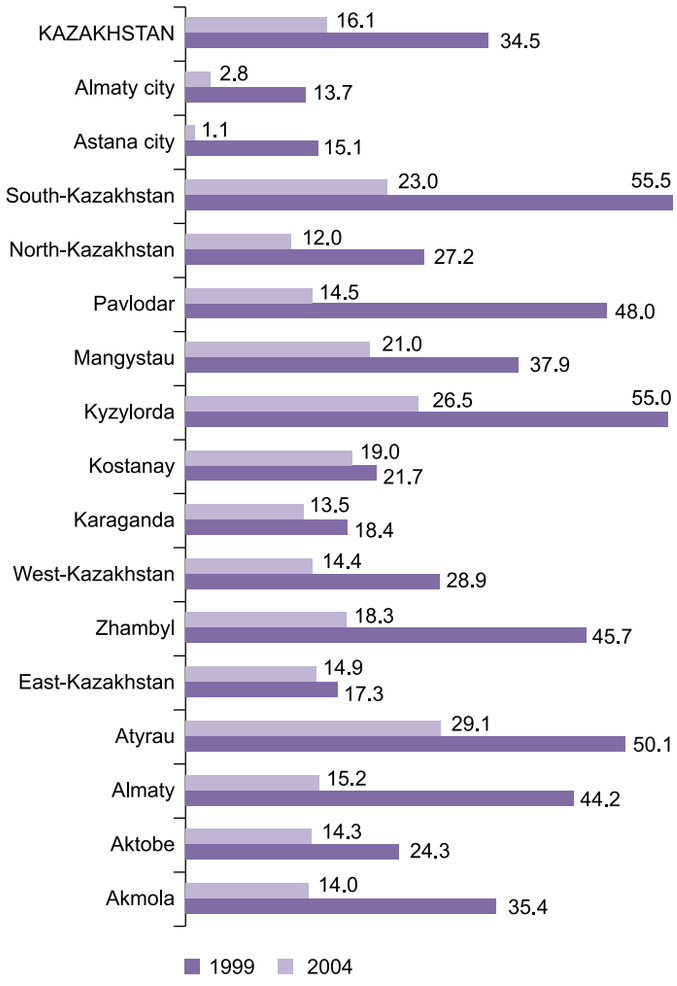
[16] Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

[17] Poverty in Kazakhstan: Causes and Cures. UNDP Kazakhstan. 2004.

[18] Dimensions of Poverty in Kazakhstan (Volume I), World Bank. 2004.

[19] Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

Graph 1.4. Proportion of people with income below the subsistence minimum in oblasts of Kazakhstan, 1999-2004, %



Source: Agency on Statistics of the Republic of Kazakhstan[20]

The strongest determinant for poverty in Kazakhstan is the oblast of residence.[21] During the economic reform, different sectors of the economy have been affected differently and correspondingly the oblasts depending on their main production. The agriculture sector has been particularly affected. It now has low productivity and, therefore, very low incomes. Thus, traditionally agricultural southern regions have relatively high poverty rates. Other factors that aggravate the situation in these oblasts are migration (oralmans) and household sizes (families with many children).

In western regions (Atyrau and Manystau oblasts), industrial production makes up more than half of the gross regional product. However, the involvement of the local population in the sectors with high wages, such as the oil-and-gas sectors, is limited, and thus these oblasts are still among those with the highest poverty rates.

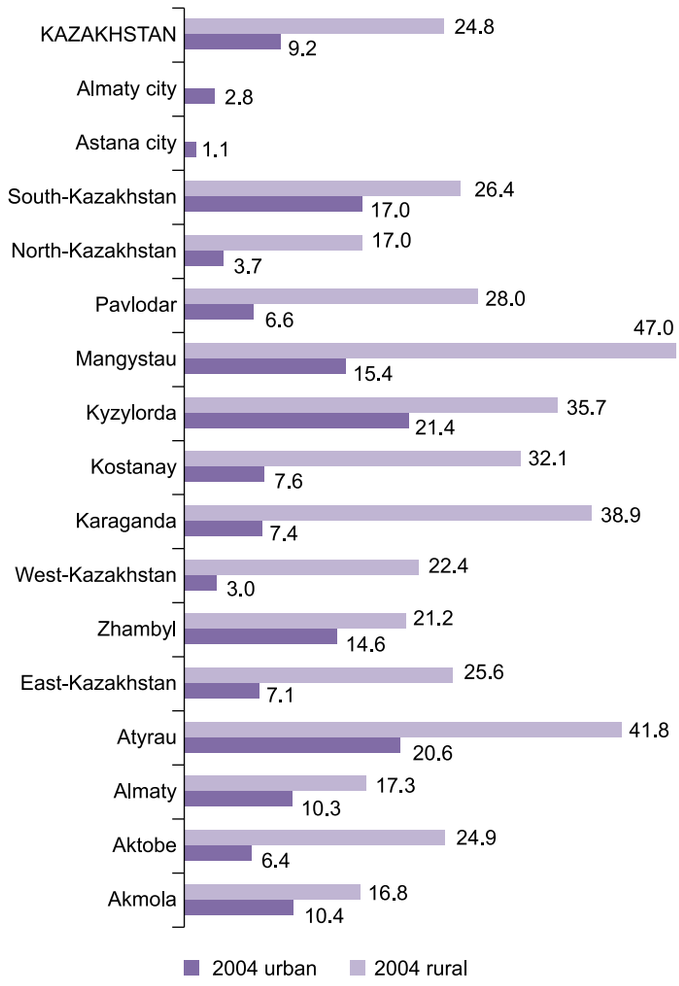
Differences in poverty incidence between oblasts are also related to the underdevelopment of the labor market, which cannot provide people with sufficient employment opportunities.

Rural poverty in Kazakhstan is considerably higher than it is in urban areas

It is remarkable that the difference in poverty rates between rural and urban areas has grown from being twice as high in 2001 (38.5% and 20%, respectively) to almost three times as high in 2004 (24.8% and 9.2%)[22].

In 2004, the rate of urban poverty was highest in Kyzylorda (21.4%), Atyrau (20.6%), South-Kazakhstan (17%) and Mangystau (15.4%) oblasts, while the highest rates of rural poverty were registered in Mangystau (47%), Atyrau (41.8%), Karaganda (38.9%), and Kyzylorda (35.7%) oblasts.

Graph 1.5. Proportion of people with income below the subsistence minimum, by urban/rural divide, 2004, %



Source: Agency on Statistics of the Republic of Kazakhstan[23].

[20] Living Standards and Poverty in Kazakhstan. Statistical Monitoring. Almaty. Agency on Statistics of the Republic of Kazakhstan, UNDP, 2004. Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

[21] Dimensions of Poverty (Volume I). World Bank. 2004.

[22] Living Standards and Poverty in Kazakhstan. Statistical Monitoring. Agency on Statistics of the Republic of Kazakhstan, UN TG on Poverty Alleviation. Almaty, 2004. P.40-193.

[23] Living Standards and Poverty in Kazakhstan. Statistical monitoring. Agency on Statistics, UN TG on Poverty Alleviation. Almaty, 2004. Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

The ratio of highest and lowest poverty depth across the regions in 2003 was 47.5 (9.5% in Atyrau oblast, and 0.2% in the city of Astana). In urban areas, the ratio was 39 (7.8% and 0.2% in the same regions, respectively), while in rural areas it was only 3.7 (12.2% in Kostanay and 3.3% in North-Kazakhstan oblasts)[24].

The difference between urban and rural poverty rates is defined by the opportunity to secure enough of an income to ensure an adequate living standard. Construction, trade, and service sectors are rapidly developing in the cities, especially in Almaty and Astana, which leads to relatively high wages. Thus, poverty incidence is lower in urban areas due to the relatively higher wages as well as the educational levels of urban residents[25].

People in rural areas are mostly self-employed, and their income depends on seasonal employment. Employment opportunities are fewer in rural areas. This particularly affects young people. Most jobs in rural areas are still government paid, for example in the social sector. Due to such a situation on the rural labour market, household land plots have become a very important means of survival for families in rural areas. Further, a degraded infrastructure in rural areas is affecting people as well as possibilities for economic development[26].

Rural poverty did not seem to benefit significantly from economic growth since it decreased only marginally in the high growth years of 2000-2001. The performance of the agriculture sector is still the primary factor for rural poverty in most oblasts[27].

Conclusions

In 2004, Kazakhstan achieved the Millennium Development Goal 1, Target 1. Income poverty incidence has been reduced by half. Though it is a strong performance, it still indicates that there is another «half» to go from the baseline in 1996 as 16.1% of the population still has income below the subsistence minimum.

Poverty has largely become a rural phenomenon, indicating new problems of unequal development across the country. It is expected that relatively high poverty rates will remain in a number of regions due to large income disparities. Further, there is also a widening gap in poverty rates within oblasts.

Even though impressive economic growth has resulted in poverty reduction, its impact was not that strong. This indicates that in order to achieve further poverty reduction even higher rates of growth are needed.[28]

It should also be noted that a large part of the population still lives at poverty risk as their incomes are low and not enough to achieve a decent standard of living (with income higher than the subsistence minimum but less than twice)[29].

To continue sustainable poverty reduction in the future, Kazakhstan will have to keep up and expand its macroeconomic progress. A major challenge is to achieve economic growth not only in the oil, gas, and mineral industries but in a diversified economy. This way, expanded employment opportunities can be achieved along with higher incomes for a greater share of the population.

Regional disparities in living standards are becoming an imperative. It will be necessary to increase understanding of the underlying causes of inequalities as well as ways to improve the living conditions, particularly in rural areas.

It is necessary to further reduce income inequality by continuously increasing minimum wages and pensions. Targeted social assistance to socially vulnerable groups (the disabled, families who lost breadwinners, etc.) needs to be further improved in terms of targeting and efficiency.

Connection with other MDGs

Poverty is closely linked to all other MDGs. Moreover, according to UNDP Human Development Reports (HDRs), poverty is seen as the lack of opportunities for human development. People should not be restricted in satisfying basic needs for food, clothing and housing. They should also have a wider range of opportunities such as to live a long and healthy life, to have an adequate level of education, to participate in the life of society, and to have an adequate income level to satisfy other social and cultural needs.[30]

[24] Living Standards and Poverty in Kazakhstan. Statistical monitoring. Almaty. Agency on Statistics, UN TG on Poverty Alleviation, 2004.

[25] Poverty in Kazakhstan: Causes and Cures. UNDP Kazakhstan. Almaty, 2004.

[26] Poverty in Kazakhstan: Causes and Cures. UNDP Kazakhstan. Almaty, 2004.

[27] Dimensions of Poverty in Kazakhstan (Volume I), World Bank. 2004.

[28] Dimensions of Poverty in Kazakhstan (Volume I), World Bank. 2004.

[29] Poverty in Kazakhstan: Causes and Cures. UNDP Kazakhstan. Almaty, 2004.

[30] 2004 National Human Development Report. Education for All: the Key Goal for a New Millennium. UNDP Kazakhstan. 2004.

In its Human Development Reports, UNDP has proposed special human poverty indices for developing (HPI-1) and economically developed (HPI-2) countries. Based on the latter, the human poverty index for Kazakhstan (HPI-3) was created, the values of which can be found in Kazakhstan's National Human Development reports since 1999. The index is calculated on the basis of the following indicators[31]:

- The proportion of people who do not survive until the age of 60 years;
- The proportion of 16-year-olds who drop out of school;
- The proportion of people with income below the subsistence minimum;
- The proportion of unemployed in the total economically active population.

Concerning the first indicator, it is noteworthy that according to the 2004 global HDR, the proportion of people who do not survive until 60 in developed European countries is less than 10%.[32] Achieving this level in Kazakhstan, where in 2003, 30% of the population did not live until 60, may be possible only by 2030. In some countries of Eastern Europe and Caucasus (Slovenia, Poland, Georgia), this proportion is about 15-16%. Such a level might be attainable in Kazakhstan by 2020. In Baltic countries (Latvia, Lithuania, Estonia), 19.5-21.4% of people do not live until 60 years of age. Kazakhstan can possibly reach such figures by 2010.

The proportion of 16-year-olds who drop out of school should be reduced to zero. According to the national census, in 1999 this proportion was 10.8%, and in the 2003-2004 academic year – 3%. It may be expected that it will be reduced to 2% by 2010.

The proportion of people with income below the subsistence minimum will, if it continues to decrease, reach 8% in 2010. The unemployment rate in a market economy may be reduced to the so-called natural level of 5%.

As a result, the human poverty index calculated on the basis of these indicators would decline from 20.9% in 2003 to 12.9% in 2010, which is almost a 40% decrease (Tables 1.1 -1.3). Assuming that regional dynamics will correspond to the national dynamics, it is expected that HPI-3 in the regions will vary from 10.6% to 15%. The main factors causing poverty from a human development perspective will be life expectancy (surviving until 60) and the poverty indicators.

Table 1.4.Human Poverty Index forecast for regions of Kazakhstan till 2010, %

Oblast	Who don't live until 60 years, %	16-year-olds not enrolled in school, %	With income below the subsistence minimum, %	Unemployed among the economically active population, %	HPI
Akmola (including Astana city)	20.0	4.2	4.3	5.0	12.8
Akmola	22.3	6.1	6.6	5.2	14.3
Aktobe	22.8	0.0	7.7	5.5	14.6
Almaty	17.8	4.9	10.2	4.9	12.0
Atyrau	22.3	0.0	13.2	5.4	15.0
East-Kazakhstan	21.5	2.0	6.8	4.1	13.7
Zhambyl	18.4	3.1	12.1	6.3	12.8
West-Kazakhstan	22.3	0.0	6.9	5.3	14.2
Karaganda	22.4	0.0	6.1	4.3	14.2
Kostanay	20.3	6.7	8.5	4.9	13.3
Kyzylorda	18.9	3.0	10.9	6.5	12.8
Mangystau	21.8	0.0	10.5	5.5	14.3
Pavlodar	20.7	1.0	6.9	4.7	13.2
North-Kazkhstan	22.1	1.8	4.8	4.5	14.0
South-Kazakhstan	17.7	0.5	10.5	4.9	12.0
Astana city	16.7	0.0	0.8	4.8	10.6
Almaty city	16.7	0.0	1.6	5.1	10.6
KAZAKHSTAN	20.0	2.0	8.0	5.0	12.9

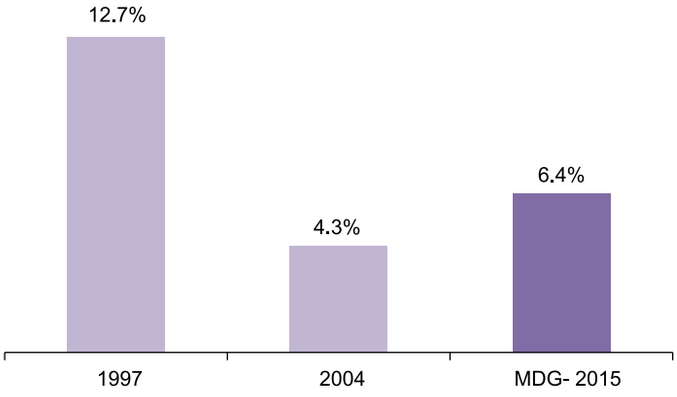
[31] 2004 National Human Development Report. Education for All: The Key Goal for a New Millennium. UNDP Kazakhstan. Almaty, 2004. P.110-111.

[32] Human Development Report 2004. UNDP. New York: Oxford University Press, 2004. P.72.

Target 2:

Halve, between 1990 and 2015, the proportion of people who suffer from hunger

Proportion of people with household income below the cost of the food basket



As the problem of hunger is not topical in Kazakhstan but the prevalence of inadequate nutrition is high, it is more appropriate to measure the progress of Target 2 by the proportion of the population lacking balanced nutrition.

In this context, Target 2 is monitored by two indicators:

1. *The proportion of the population with income below the cost of the food basket.*
2. *The prevalence of underweight children (under five years of age);*

Another indicator is the prevalence of micronutrient deficiency among the population, also referred to as «hidden hunger».

Significance for Kazakhstan

In 1999, the Government adopted the Concept of Healthy Lifestyle and Nutrition. One of the priorities of the National Environmental Action Plan (2000) is to ensure adequate nutrition and the safety of food products in the country.

In Kazakhstan-2010, the Health Reform Strategy highlights the necessity of developing nutrition programs for children under the age of five, pregnant women, and breastfeeding mothers.

The Agricultural Development Program for 2000-2005 aims to achieve economic growth in the competitive sectors of agriculture and ensure the stable production of main food items.

The Agro-Industrial Policy, outlined in the Strategic Development Plan of Kazakhstan till 2010 (Kazakhstan-2010), has the goal of improving the living standard of the rural population through the enhancement of agricultural productivity and profitability, the creation of all forms of employment, and the industrialization of rural areas.

The State Agriculture and Food Program for 2003-2003 aims to ensure food security in Kazakhstan through the establishment of an effective food and agriculture complex and the manufacturing of competitive produce.

Target 2 progress in Kazakhstan

The proportion of the population with income below the cost of the food basket (food poverty)

The proportion of people with income below the cost of the food basket has been decreasing since 1998, the year when it reached in percentage terms the peak value of 16.2%, but is still significant (4.3% in 2004).

The prevalence of food poverty in different oblasts does to some degree correspond to poverty incidence by oblast. The proportion of the population with income below the food basket is high in southern and western oblasts and so is the poverty incidence. Some of the northern/central oblasts (Kostanay and Pavlodar) have a higher food poverty compared to other oblasts than their ranking on poverty incidence. However, the southern oblasts are ranked lower on food poverty than they are on poverty incidence. This is due to the favorable climatic conditions, which enable people to produce their own food in household plots.

Table 1.5. Proportion of people with income below the food basket in Kazakhstan, 1997-2004, %

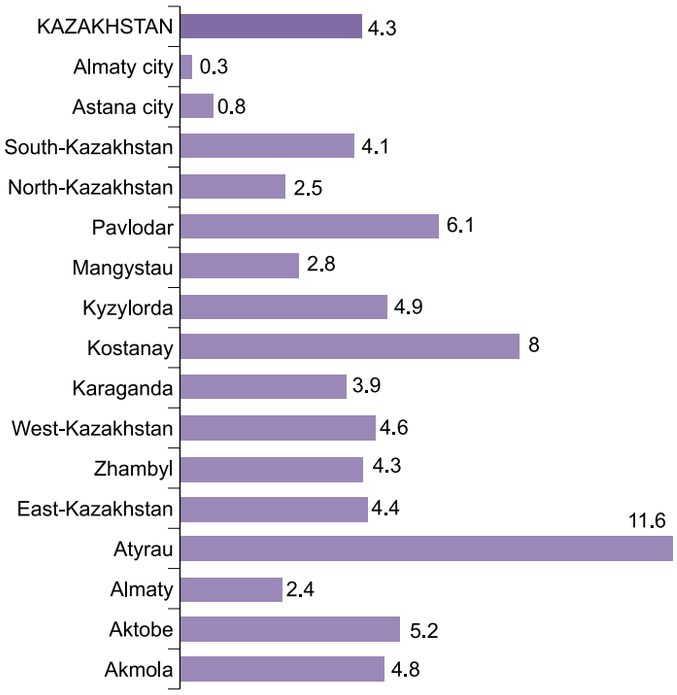
	1997	1998	1999	2000	2001	2002	2003	2004
Proportion of people with income below the food basket	12.7	16.2	14.5	11.7	11.7	8.9	6.3	4.3

Source: Agency on Statistics of the Republic of Kazakhstan[33]

[33] Poverty Monitoring Indicators in Kazakhstan. Almaty. Agency on Statistics of the Republic of Kazakhstan, UNDP, 2003. Living Standards and Poverty in Kazakhstan. Statistical Monitoring. Almaty. Agency on Statistics of Kazakhstan, UN TG on Poverty Alleviation 2004. Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

Western regions especially stand out, as the negative impact of geographical conditions does not allow for the provision of adequate nutrition, and people's health (especially children's), is negatively influenced.

Graph 1.6.Proportion of the population with income below the food basket in regions of Kazakhstan, 2004, %



Source: Agency on Statistics of the Republic of Kazakhstan[34]

The acuteness of the problem of access to balanced nutrition can be assessed by analyzing the share of household income spent on food. According to the household surveys of 1997-2000, the share of food items was 50-56% of the total consumer expenditures[35]. In 2003, it was 50.2%, and in 2004 – 45.7%[36], which means that in spite of a significant decrease in the proportion of people with income below the subsistence minimum and the food basket, in the past years people in Kazakhstan still had to spend most of their income on food.

Prevalence of underweight children (under five years of age)

Assessment of nutrition adequacy is based on the concept of height and weight correspondence to a child's age. According to the World Health Organization (WHO) data, in a healthy society with balanced nutrition, the deviation from normal height/weight/age ratio should not exceed 3%.

According to the 1999 Demographic and Health Survey (DHS) in Kazakhstan, between 1995 and 1999, the country achieved certain progress in reducing the proportion of children who lack balanced nutrition.

Table 1.6. Proportion of underweight children, %

	Low height-for-age	Low weight-for-height	Low weight-for-age
Kazakhstan (1995)	15.8	3.3	-
Kazakhstan (1999)	9.7	1.8	4.2
By region:			
Almaty city	6.8	2.3	4.5
South[37]	7.8	2.3	3.9
West[38]	17.9	1.8	6.7
Center[39]	12.5	5.5	3.4
North[40]	9.2	0.0	5.7
East[41]	9.0	0.0	0.8

Source: Demographic and Health Surveys in Kazakhstan[42].

In examining the 1999 data, one can note that a high proportion of children with height and weight below their age norm was registered in Western Kazakhstan (17.9% and 6.7%, respectively), while children with low weight for their age norm were registered in the Central region (5.5%).

[34] Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

[35] Poverty Monitoring Indicators in Kazakhstan. Almaty. Agency on Statistics of the Republic of Kazakhstan, UNDP, 2003. P.63.

[36] Living Standards and Poverty in Kazakhstan. Statistical Monitoring. Almaty. Agency on Statistics of Kazakhstan, UN TG on Poverty Alleviation, 2004. Living Standards in the Republic of Kazakhstan. Statistical Monitoring. Ed. by Y.K. Shokamanov. Almaty, 2005.

[37] Almaty, Zhambyl, South-Kazakhstan and Kyzylorda oblasts.

[38] West-Kazakhstan, Atyrau, Mangystau and Aktobe oblasts.

[39] Karaganda oblast.

[40] Kostanay, North-Kazakhstan, Pavlodar and Akmola (incl. Astana city) oblasts.

[41] East-Kazakhstan oblast.

[42] Kazakhstan. Demographic and Health Survey 1995. P.112.; Kazakhstan. Demographic and Health Survey 1999. P.147-148.

Vitamin A deficiency

The 2002 study[43] revealed that among 28.6% of children 6-60 months old, the serum retinol level was below 0.7 millimole/l. This is above the 20% threshold established by WHO, indicating a serious problem of the health status and healthcare system in the country.

In countries where Vitamin A deficiency is a public health problem, the economic losses amount to 6-13% of the GDP, while $1 invested in the Vitamin A supplementation program yields a $146-worth effect.

National implementation of the Vitamin A supplementation program to mothers and children under five years of age should yield the following results:

1) Reduce the incidence of several disorders among mothers and children including:
   - the risk of iron deficiency anemia and oncological diseases and disorders;
   - eyesight organ disorders (acuity of vision reduction, nyctalopia, xerophtalmia, oil-bag disorders, keratomalacia, partial or complete blindness);
   - diseases related to systemic lesion of epithelial tissue and weakening of the immune system (respiratory infections, tracheitis, bronchitis, pneumonia, tuberculosis, cystitis, pyelonephritis, diarrhea, skin infections, etc.);
   - reproductive function disorders.
2) Reduction of under-five mortality and enhanced survival opportunities for children. The risk of a lethal outcome of measles can be reduced by 50%, diarrhea – by 33%, and overall mortality – by 23%.
3) Improve children's growth and development indicators.
4) Reduce maternal mortality, if resistance to infections and morbidity reduction are achieved.
5) Reduction of spending on treatment (family and public) through decreasing morbidity, in-patient and hospital treatment, reduction of treatment duration, reduction of spending on blind children's education, and overall improvement of children's and their families' welfare.

Anemia

Malnutrition reduces energy and mental capabilities. It can present serious risks to people's health and in the most severe cases, survival. Malnutrition is one of the causes of the high incidence of anemia, which is one of the leading health problems in Kazakhstan.[44]

Anemia damages immune mechanisms. In childhood, anemia can result in a lower level of development and educational attainment. In adulthood, it can lead to chronic illnesses and low productivity, both of which may reduce individual and national earning potential[45].

For decades, anemia has been a national-scale problem for women and children in Kazakhstan. In the mid 1990s, it received new momentum after the publication of the first DHS for Kazakhstan in 1995. According to the surveys, 49% of women and 69% of children in Kazakhstan suffered from anemia, which placed them in the risk group for delays in physical and intellectual development and mortality. The incidence of anemia is highest in the Aral Sea region, which suffers from high pollution and other environmental and socio-economic problems.

The prevalence of moderate and severe anemia among women 15-49 years of age declined from 12% in 1995 to 9% in 1999 and among children under three years of age – from 39% to 26%[46]. Anemia is more prevalent in rural areas: in 1999, the figures for rural and urban areas were 14% and 10% respectively among women, and 30% and 19% respectively among children.

In spite of a small decline in iron deficiency anemia between 1995 and 1999, its prevalence among pregnant women in the past five years has actually increased from 58% in 1999 to 63.4% in 2003[47], and 58.8% – in 2004[48]. The proportion of pregnant women who suffer from anemia is especially high in South-Kazakhstan oblast (89.1%) and in western oblasts, particularly Aktobe (65.8%) and West-Kazakhstan (67.2%) oblasts

The territory of Kazakhstan is a zone of medium iodine deficiency. The studies of the KNA have shown that 52-67% of women of reproductive age in Southern and Eastern Kazakhstan and 61% in Northern and Western regions suffered from iodine deficiency disorders (IDD).

The 1999 survey showed that only 29% of rural households and 31.3% of urban households used iodized salt. Only the Central region of the country does not suffer from iodine deficiency disorders due to its proximity to Kazakhstan's largest salt producer, Aral-tuz.

[43] The Kazakh Academy of Nutrition research.

[44] Millennium Development Goals in Kazakhstan. UN System, Government of Kazakhstan. 2002.

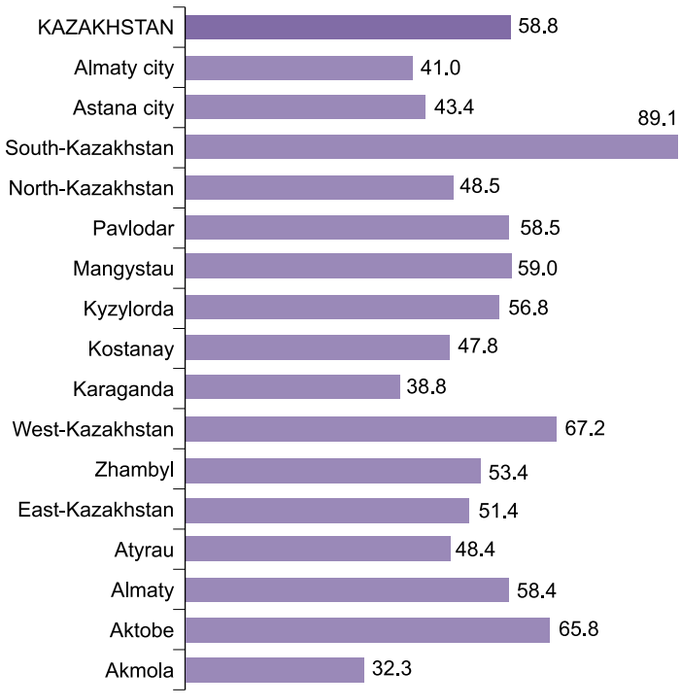
[45] Millennium Development Goals in Kazakhstan. UN System, Government of Kazakhstan. 2002.

[46] Kazakhstan. Demographic and Health Survey 1999. P. 161.

[47] Women and Men of Kazakhstan: brief Statistical Overview. Edited by Abdiyev. Agency on Statistics of the Republic of Kazakhstan. Almaty, 2004. 2004 data provided by the Agency on Statistics.

[48] Data of the Ministry of Healthcare of the Republic of Kazakhstan.

Graph 1.7. Proportion of pregnant women who suffered from anemia among those who completed pregnancy, 2004, %



Source: Agency on Statistics of the Republic of Kazakhstan[49]

Consequences of anemia

The anemia-caused decrease in indicators of cognitive skills at school and work productivity is related to more than a billion dollar losses in the national economy. The correction of nutrition status through the addition of iron and folic acid will help to save about 90,000 lives, prevent congenital defects of nervous tube and cardiovascular diseases, and increase economic activity by more than $750 million in the next 10 years.

If not corrected, the folic acid deficiency may cost the national economy an additional $13 million in healthcare expenses and lost income[50].

[49] Data of the Ministry of Healthcare of the Republic of Kazakhstan.

[50] J. Braginsky. Preliminary suggestion on flour fortification in Kazakhstan: Analysis of cost efficiency and acceptability. Flour fortification in Kazakhstan Strategy and Budget. Decatur, USA, 2003.

Conclusions

Government policy on ensuring healthy lifestyles and nutrition, healthcare system reforms, food and agriculture complex development, and poverty reduction overall positively influence the progress on Target 2. Based on the one indicator for which data on recent years is available (the proportion of the population with income below the cost of the food basket), **Kazakhstan has, in 2004, achieved Millennium Development Goal 1, Target 2**.

As for the second indicator, prevalence of underweight children, the Demographic and Health Surveys conducted in 1995 and 1999 revealed deviations from normal height/weight/age ratios in children under the age of five in Kazakhstan. A high percentage of deviation was registered in Western Kazakhstan, while a high rate of children with low weight for age was registered in the Central region. One of the main steps to be taken in addressing this problem should be to introduce a program on Vitamin A supplementation to mothers and children under five years of age.

Food expenditures in 1997-2003 were no less than a half of total consumer spending. The lack of sufficient income to obtain adequate living standards often leads to imbalanced nutrition, accompanied by different forms of anemia.

Given the biological importance of iodine for the development of a fetus' brain, a child's intellect, energy exchange, protein and hydrocarbon synthesis, immune system formation, skeleton growth, and reproductive function, the consequences of iodine deficiency cannot be neglected. To solve the problem of iodine deficiency, it is necessary to ensure the universal use of iodized salt, especially in rural areas. For vulnerable groups, especially pregnant women with iron deficiency anemia, consumption of fortified flour should be accompanied with the distribution of food supplements that contain iron.

Connection with other MDGs

Poverty and low household income may be the main causes of imbalanced nutrition. Malnutrition among children may also be related to the weak health of mothers, incorrect nutrition practices, and infectious diseases. Therefore, malnutrition is closely related to poverty as well as health problems.

The main cause of anemia being inadequate and imbalanced nutrition, the question of food poverty becomes closely linked to maternal mortality and child mortality. Anemia leads to deteriorating health and weakens the immune system of pregnant women. It also reduces resistance to delivery and postnatal complications.

A bad socio-economic situation also influences the spread of tuberculosis and other diseases. The lack of adequate nutrition and bad housing conditions due to low income create a favorable environment for the development of TB.

Low income also affects a person's opportunity to receive quality education, which especially concerns the rural population in Kazakhstan. Children from poor families more often drop out of school because of the low living standard. In many regions, there is a lack of preschool education, secondary schools, boarding schools, and places for children from distant auls[51]. Consequently, this significantly limits people's opportunities to receive professional education, find a job, and secure an adequate living standard in future.

[51] Poverty in Kazakhstan: Causes and Cures. UNDP Kazakhstan. Almaty, 2004.

MDG 2 | Achieve Universal Primary Education

Target 3:

Ensure that by 2015 children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

The MDG initiative has identified two indicators for the achievement of universal primary education – net enrollment and literacy of 15-24 years olds. The MDG report on Kazakhstan in 2002 establishes the percent of the primary school-age population at the level of 98.8% in 1990 and at 99.5% in 1998. This is interpreted as nearly universal. The same report places the youth literacy rate in Kazakhstan at the level of 99.9% for both men and women. Thus, it was stated that MDG 2 has been achieved in Kazakhstan.

Significance for Kazakhstan

According to the Constitution and Law on Education adopted in 1999, general compulsory secondary education, which is now 11 years, is mandatory for everybody. Secondary education includes primary (grades 1-4), basic (5-9), and secondary levels (10-11).

Government policies are aimed at ensuring universal access to and high quality of secondary education. This is the first aim of the State Program for Developing Education in Kazakhstan in 2005-2010. At the same time, the situation Kazakhstan inherited from being a part of the Soviet Union (1920-1991), as well as many geographical, economical, ethnic, and socio-cultural issues make achieving and sustaining this double goal a complex challenge.

The situation in primary education in Kazakhstan is tightly connected to the overall situation in compulsory general secondary education as primary education is a part of it. While the MDG Goal 2 Target 3 has been achieved, further challenges in the whole system of secondary education remain and newly emerge. The main challenge is to ensure universal access to high quality secondary education for all children in all regions and from all social groups. Monitoring the access to and quality of secondary education will be a basis of ensuring that the achievements in this area are sustained.

Kazakhstan has also joined the UNESCO Education for All process. EFA goals stress quality and access to general education, especially paying attention to girls, minorities, and disadvantaged children. At the same time, quality of education is as important in the EFA process as access. The EFA Global Monitoring Report of 2005 argues that «merely filling places called «schools» with children would not address even quantitative objectives if no education occurred»[52]. EFA Goal 2 is to ensure that by 2015 all children, especially girls, children from disadvantaged backgrounds, and ethnic minorities have access to free and compulsory high quality primary education and are able to complete it. This goal is directly synergetic to the MDG2 as well as with the main aims of the State Program for Developing Education in Kazakhstan in 2005-2010. Achievements in the direction of MDG2 should therefore be assessed on the basis of that complex framework of goals: MDG2, EFA, and the State Program.

[52] EFA Global Monitoring Report 2005, p. 28-29.

MDG 2 progress in Kazakhstan

Although MDG2 has been achieved as measured by the MDG indicators, assessment on the basis of the broader framework of goals of MDG2, EFA, and the State Program sheds light on remaining issues.

Access to secondary education is unequal and school attendance at basic and secondary levels is not universal, despite the fact that school is compulsory. Due to economic difficulties, there is a lack of about 500,000 study places[53]. In 1999/2000 the percentage of school attendance in primary and basic education (grades 1-9) was 96% and in upper grades (10-11) 87%. In the following academic year (2000/2001) these figures were even lower in higher grades – 99.8% attendance of primary school (grades 1-4), 92.6% in basic education (grades 5-9) and only 79.1% in upper secondary education (grades 10-11)[54]. According to MoES, in 2003/2004 2943 secondary students did not attend school for 10 or more days. 2341 of these students were brought back to school. However, these figures seem not to cover all the percentage of those who actually do not attend school. Also, according to the data provided by the Ministry of Internal Affairs, there are about 22,000 school-age youngsters with deviant behavior[55]. This is a group at risk of dropping out of compulsory education, if they have not dropped out already. In addition, families living in poverty have only restricted possibilities of sending their children to school (see below). This indicates that there may be different groups who for different reasons are deprived of access to secondary education.

There are also concerns about the ***quality of secondary education***. According to the results of the Unified National Testing, which was introduced in 2004 but piloted in 2003, the outcomes show a tendency towards decline. The test results of graduates of rural schools and schools with Kazakh as the language of instruction were comparatively lower than the results of graduates of urban schools and schools with Russian as the language of instruction. This is an indication of disparities in the quality of education.

Access to education

Rural /urban

Access to secondary education in Kazakhstan is significantly different for children in urban areas than it is for children in rural areas, rural children being often in a disadvantaged position.

In the beginning of 2004/2005 there were 8,221 schools in Kazakhstan. Of these, 6,080 (74%) were in rural areas. The rural schools were attended by 47% of the overall number of students[56]. Thus, the problems of rural education affect about a half of the overall student population in Kazakhstan. Among the rural schools were 1,158 primary schools (14% of the overall number of schools in Kazakhstan), 1,154 basic schools (1-9 grade, 7% of the overall number) and 3,741 secondary schools (45.5% of the overall number). There were only 12 schools for children with special needs and 24 schools with curricular emphasis on learning certain subjects in rural areas.

The network of schools does not cover rural areas evenly. In 2002, there no schools in 492 settlements, 593 villages had no primary and 625 villages no secondary school[57]. Those numbers are increasing due to the policies of optimization. In 2003, 101 schools were closed, but only 35 opened[58]. The number of rural schools in 2003/2004 was 1% lower than in 2002[59]. The causes cited by the MoES are migration processes and a decline in birth rates, which result in a lack of school-aged children in an increasing number of settlements. However, the tendency to opt for closing schools negatively affects access to education for the children who still live in these areas. In 2002, more than 30,000 children had to travel between 5 to 40 km to reach school[60].

Access to education in rural areas is also restricted because of the poverty situation. At the same time, rural schools often operate in premises that need repairs, and the cost of inevitable improvements are to be covered by parents. Parents also buy school uniforms, textbooks, and other learning materials, which are hardly affordable for many low-income families. In 2001, 0.5% of school-age children from low-income families did not attend school, one-third of them because of insufficient resources or health problems[61].

Equity in access to quality education in rural areas is also impaired by the drawbacks in the quality of education. Rural schools are very often small schools with multi-grade teaching, for which the teachers do not have sufficient training and experience. The staffing of rural schools remains a problem; many teachers are forced to teach subjects for which they do not have the necessary educational background.

53 State Program for Development of Education in Kazakhstan in 2005-2010 www.edu.gov.kz.

54 The Right to Quality Education: Creating Child-Friendly Schools in Central Asia. UNICEF, Almaty 2002, p. 29.

55 Presentation by the research company Sange at the round-table on the drop-out problem organized by the Education Center Bilim-Central Asia, Almaty, February 2005.

56 Secondary schools in Kazakhstan in the beginning of the year 2004/2005. Voume 1. Almaty, 2004, p.5.

57 Kazakhstan: Achievements, Issues and Prospects. A Perspective by the United Nations. UN, Almaty, 2004, p. 32.

58 Education and Science of the Republic of Kazakhstan, 2003 (Informational statistical materials) p. 11. www.edu.gov.kz.

59 Living Standards and Poverty in Kazakhstan. Statistical Monitoring. Agency on Statistics of the Republic of Kazakhstan, UN TG on Poverty Alleviation. Almaty. 2004, p. 37.

60 Kazakhstan: Achievements, Issues and Prospects. A Perspective by the United Nations. UN, Almaty, 2004, p. 32.

61 Rural Development in Kazakhstan: Challenges and Prospects. Kazakhstan 2002. UNDP, Almaty, p. 40.

Ways to solve the problems of rural schools are sought at regional (oblast) level. In different oblasts, different approaches and strategies are envisaged to alleviate the situation. For example, in Akmola oblast the education department is conducting a feasibility study for a distance education program for rural schools. In Kostanay oblast a program of boarding schools for children from remote villages is being implemented.

Solving the problems of rural education and ensuring access to quality secondary education in rural areas, however, requires measures at national policy level. The overwhelming remaining issue is a lack of resources at different levels – for school construction and repairs, for inducements to qualified teachers to choose employment in rural schools, and for support to children from low-income families. The Government is carrying out the medium-term program Rural School (Auyl Mektebi), under which construction and repairs of schools in rural areas are being financed. To support low-income families, the program Vseobuch (Universal Education) is in operation. It is necessary to make a thorough evaluation of the success of these programs and, based on this, develop further strategies for improving access to education in rural areas.

On the other hand, many schools in cities and towns work in 2 to 4 shifts, which is a significant stress factor and can hinder learning. In the fast-growing capital city of Astana, 10% of schools work in 4 shifts, although the percentage of students in the third and fourth shifts is small (Please refer to the Annex, Table 2.A). The effects of learning in different shifts would be an important topic of further detailed research. It can be expected that not all pupils fully benefit from learning activities in the second half of the day. If the need to conduct schooling in different shifts is inevitable, the schools may need to adapt pedagogy to different learning conditions. To this end, forms of non-formal learning organized by schools may prove effective as complementary to formal lessons. To implement flexible solutions for learning, schools would need less rigid administrative and accountability frameworks.

Vulnerable groups of children

One of the most vulnerable groups of children with regard to quality education is the group with special needs. Currently, there are 101 different specialized correctional institutions for children with different special needs[62]. The total number of students attending these institutions is 22, 800. Still, there are approximately 120,000 school-age children with special needs, and only one-third of them are learning in specialized institutions[63].

A strategic question should be asked on how to improve the situation. Should big investments into further development of the network of specialized institutions be made, or should alternative ways to take care of children with special needs be sought? Teaching children with special needs in specialized institutions in fact means segregating a large group of the cohort of learners from their peers. One alternative to this is inclusive education, which is a complex of special policies and tailor-made programs to provide in-service training and support to ordinary schools so that they can retain as big a number of children with different special needs as possible in the mainstream path of secondary education.

Several steps have already been taken in preparation for the inclusive education approach in Kazakhstan. (Please refer to the Annex, Table 2.B). The choice of inclusive education requires significant efforts and changes in many sub-systems of the education sector. In order to enable children with physical disabilities to attend mainstream schooling, school facilities need to be adapted to their needs. This is possible in the case of new school buildings, but can cause great difficulties, both financial and constructional, in most other schools, which are housed in earlier built facilities that are often in need of significant repairs anyway. An even more challenging need connected to inclusive education is that content regulation, standards, and assessment also need to change. First of all, however, the practice of inclusive education depends on teachers' qualifications in the area of special needs education, in-service training, and professional pedagogical support.

Inclusive education also requires a network of specialized support and consultancy for the children/students with special needs. Such a network of psychological-medical consultancy points, correctional points, rehabilitation centers, and centers for speech therapy is already evolving (Please refer to table 2.C).

Another group of children in need consists of those from poor backgrounds. In Kazakhstan, 57.7% of the working age population and 33.5% of children were poor in 2002, according to the State Agency of Statistics. This means that one-third of children are in a very hard position with regard to their educational opportunities. A vicious circle is thus created since education has been proved to be a significant factor in poverty reduction, and restricted educational opportunities in their turn result in the «transfer of poverty from generation to generation». To improve access to education for children from low-income families, complex measures and significant resources are needed.

A specific group of educationally impaired or vulnerable children consists of the children of oralman, or ethnic Kazakhs who have migrated or re-migrated to Kazakhstan from other countries where Kazakh diaspora is living. According to the preliminary results of a study of the children of oralman in Shymkent, conducted by Kazakh National University, the most apparent problem with regard to access of these children to secondary education is that cultural traditions of some families do not expect that girls will stay in school after they turn 15 or 16.

Also, some oralman families who migrated for example from Afghanistan, Iran, or Pakistan do not speak either Kazakh or Russian and their children can therefore hardly participate in school learning.

It would be very important to address both problems with individualized tailor-made support to the children of oralman. Regarding cultural traditions, a longer communication with the families, in order to integrate them into the cultural values of Kazakhstan, may be needed. Such communication would also serve the purpose of working towards the goal of offering quality education for all, including girls. Concerning language problems, shorter measures may suffice. Developing a strat-

[62] Secondary schools in Kazakhstan in the beginning of the year 2004/2005. Voume 1. Almaty, 2004, p.9

[63] State Program for Development of Education in Kazakhstan in 2005-2010, p.11 www.edu.gov.kz .

egy should be the first step to providing a strategic solution to these problems regarding oralman.

Ethnic minorities and multicultural education

Kazakhstan is a multicultural society that represents more than 100 nationalities. This rich cultural fabric is a powerful asset to the development of the country indeed. Offering different languages of instruction is an essential approach to providing quality secondary education to children from different ethnic backgrounds.

Secondary education in Kazakhstan is provided in five main languages of instruction: Kazakh, Russian, Uigur, Uzbek, and Tajik. As the schools with Kazakh and Russian as languages of instruction are spread evenly throughout the country, schools with Uighur, Uzbek, and Tajik as languages of instruction are situated in the regions where these languages are mother tongues of a considerable percentage of children. In 2003/2004, in South Kazakhstan oblast, 0.158% of pupils in secondary education were studying in Uzbek and 0.005% in Tajik; in Almaty oblast 0.0051% and in the city of Almaty 0.016% of secondary students studied in Uigur; in Zhambyl oblast 0.04% of secondary students studied in Uzbek. (Please refer to the Annex, Table 2.D).

The number of schools with Kazakh as the language of instruction has increased during recent years from 44.3% in 2000 to 45.9% in 2003 (Please refer to the Annex, Table 2.E). This is connected to the policies supporting the development of Kazakh as the state language. At the same time, the number of schools where Russian is the only language of instruction has decreased from 29.4% in 2000 to 26.8% in 2003.

Quality of education

Qualification of teaching staff

About half of the teachers in both urban and rural schools in Kazakhstan have higher education (Please refer to the Annex, Table 2.F). At the same time, 32% of urban teachers and 7% of teachers in rural schools have college qualifications. This indicates that 18% of urban teachers and 42% in rural areas are not properly qualified, which is a serious challenge with regard to ensuring quality education for all. To ameliorate the situation it would be necessary to launch targeted training programs in the mode of distance learning or by correspondence provided by teacher education institutions.

There are 34 higher education institutions and pedagogical colleges offering accredited teacher education following 19 different curricula. As the need for new teachers is growing, the state policy is to offer more grants for free training to new entrants. From 2001 to 2004 the number of grants grew from 5,655 to 6,075.[64]

At the same time, there is a problem with the graduates entering employment in schools. In 2003, the number of graduates with qualifications in school pedagogy was 14,400, but only 6,817 (47.3%) entered employment in schools. The efficacy of teacher education is thus also a problem. Of those who entered employment in schools in 2003, approximately half went to rural schools, which is roughly in proportion with the overall share of rural schools.

The problem of teacher-trained graduates seeking employment not in schools may have several causes. These most probably start with the selection of students, which does not include testing the motivation and predicting the professional adaptability of new entrants. This makes it easy for students to enter teacher training without actual desiring to become a teacher, but just to obtain a higher education certificate. To avoid this it would be very necessary to introduce complex testing of motivation and professional adaptability as part of entrance requirements. At the moment, entrance to teacher education at the university level is based on the results of the applicant at Unified National Testing, which is narrowly based on school subjects.

The dominating cause, however, is most likely that the teacher training programs are weakly connected to school practice, and the graduates have not been sufficiently introduced to their future job. Student teaching for six weeks (in Kazakh National University) is clearly not sufficient in duration and is, according to some anecdotal evidence, often spent in a formal way, without the student teacher identifying him/herself as a temporary member of the pedagogical community. Also, the courses taught in the education of teachers are overwhelmingly theoretical, with little (or formal) practical assignments. This of course varies to some extent between different universities and colleges.

Improving teacher pre-service training is a major task on the way to ensuring quality secondary education for all, as it is directly connected to the quality of learning and education. Especially considering the prospective changes in content regulation from subject knowledge-centered to development of competencies, it is paramount that the necessary thorough changes in teacher education curricula be made as soon as possible; new teachers entering schools in 2008 should already have skills in competency-oriented teaching.

Teachers' in-service training is provided by regional in-service training institutes and, for educational administrators, at the central institute in Almaty. There is a requirement that every teacher has to pass regular in-service training every 5 years. However, the capacity of the institutes is not sufficient – each year 54,000 teachers should pass the courses, but in 2001 42,784 did so, and 48,157 passed in 2003 (MoES). The other question concerns content and quality of in-service courses. They are mostly as theoretical – or even more – than pre-service courses, and for the most part have a normative-instructive character. As a consequence, teachers who attend these courses get information that today everybody can access through literature and the Internet. In-service as well as pre-service training also model for the (future) teacher how to act in a pedagogical situation, and informational-theoretical courses can only strengthen beliefs that teaching is about conveying information.

In the educational NGO sector in Kazakhstan there is considerable capacity in new child-centered teaching methods, citizenship education, environmental education, and other important areas of teachers' professional development. There is also

[64] State Program for Development of Education in Kazakhstan in 2005-2010, p. 16 www.edu.gov.kz.

a long tradition of innovative pilot projects in subject teaching and integrative methods in a large number of Kazakhstan schools. A promising way of enriching the possibilities and approaches of in-service training would be to set up certification procedures for the NGO sector and schools.

Content of education

After gaining independence in 1991, Kazakhstan has made continuous improvements in the secondary curriculum. In 2002, a complex description of the content of secondary education, State Standards, was adopted. In their overall approach, the Standards of 2002 still follow the former prescriptive model of content regulation, which defines items of knowledge, skills, and capacities (znaniya, umeniya, navyki) to be obtained in a large number of scientific domains (13-23 study subjects, depending on the level of secondary education).

A Concept Paper approved by the Government as basis for the State Program for Developing Education in Kazakhstan in 2005-2010[65] admits that the system of education in Kazakhstan is based on out-dated methodology and content. The State Program for Developing Education in the Republic of Kazakhstan in 2005-2010 defines the change of curriculum towards an outcomes-oriented model as one of their main aims. The term «outcomes-oriented» means that the new system will be based on a normative framework of expected outcomes, which substantially differs from the present content regulation, which is input-based (defining what knowledge to learn when, and how much time will be needed). The outcome-oriented model also creates a firm link with assessment and quality assurance, which so far has been diffuse and not reliable as the first results of Unified National Testing show.

The outcomes are at the same time defined not as the remembering of facts and the performing of narrowly defined tasks, but as the developing of general and specific competencies[66]. The competencies will be defined at three levels – general competencies, subject area expected outcomes, and subject-based outcomes. Along with this change, content regulation will concentrate more on general competencies and nine areas of study – language and literature, human studies, social studies, mathematics, informatics, science, arts, technology, and physical education – rather than a much bigger number of subjects.

This vision of further development of content regulation includes many factors, which are essential for ensuring quality education for all. First, it allows for a balanced differentiation of content and quality control as the expected outcomes are defined more broadly and will involve higher order skills like critical thinking and problem solving. This means that content can be differentiated to some extent in accordance with the interests of students. It also allows for school-based curriculum development and community involvement. Further, defining expected outcomes in terms of competencies creates a better link with the labor market as the expected outcomes can be negotiated with employers. Even more importantly, development of competencies can and should include development of life skills, which are a crucial deficiency in the present curriculum content.

The implementation of such a model requires, however, great effort, investments, and first of all, the development of new thinking and skills in teachers and education administrators. It would be very important to further involve international expertise in the development of new curricula. If this model is implemented only formally, for example competency-based curricula developed by groups of educators without specific training, the good sides of the model can be impaired and the changes in content will not bring about better and more appropriate learning for students.

Life skills based education

In Kazakhstan, the present Standards of Compulsory General Secondary Education do not include developing life skills. The Standards are oriented to learning facts. Although the vision of changes in content regulation allows for the inclusion of this component in the official National Curriculum, before the new curriculum is developed it is important to find and endorse alternative ways to compensate for the lack of attention on life skills. This can be done in the form of extracurricular activities included in the school development plans, which are mandatory for each school. It should be recommended that international experience in this field be studied and taken into consideration.

Activities for developing life skills can also be connected to community education. There are significant development projects in community involvement in Kazakhstan, which can be scaled up for this purpose.

Use of ICT

In 1997, the President of Kazakhstan initiated a program for the informatization of secondary education. According to the MoES, by 2003 all schools had already been equipped with computers and on average there was one computer for 57 students (the rate ranging from 20 in Atyrau to 85 in the South Kazakhstan oblast)[67]. Moreover, in 2003, already 1,821 schools, 893 of them in rural areas, were connected to Internet. In 2001, the program started to develop electronic learning materials and multimedia programs for the upper grades of secondary school.

According to the report of 2003 by MoES, another specific program of informatization was developed for 2004-2006. Under this program, a national center for telecommunications has been established. Also, a central network of telecommunications connecting all regional education departments has been developed. In addition, a pilot project on distance education for rural schools is being implemented. In 2003, 667 schools in 4 oblasts already participated in the program. With UNESCO, a web-site for pre-school was launched.

Furthering these developments is essential for providing high quality secondary education for all. The next steps could

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[65] The Concept of Development of Education in the Republic of Kazakhstan by 2015.

[66] Materials for elaboration of the National standard of general secondary education of the Republic of Kazakhstan. MoES, Kazakh Education Academy. Almaty, 2004, p. 24

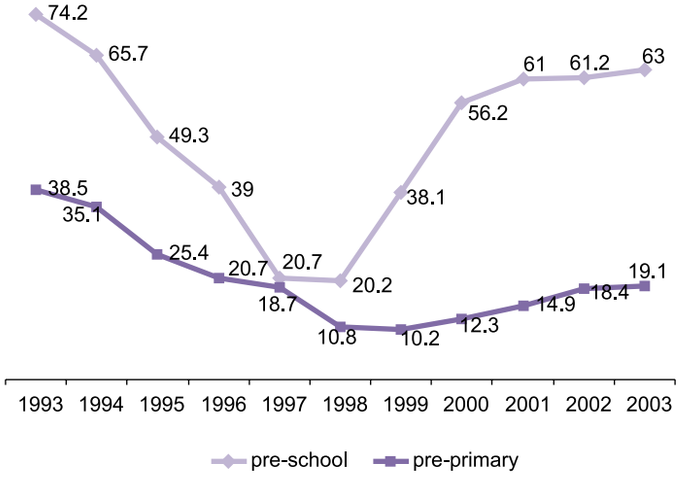
[67] Education and Science of the Republic of Kazakhstan, 2003 (Informational statistical materials); p. 25-31; www.edu.gov.kz

focus on providing specialized computer-based learning possibilities for children with special needs and on stimulating joint computer-based cross-curriculum learning projects for all levels of secondary education. ICT in schools also opens new perspectives for cooperation between schools and local communities, especially in rural areas. Local schools are often the only information centers in local areas, and finding ways to provide computer access to community members can be a good basis for tightened cooperation. Cooperation with similar centers of excellence in other countries, including the former Soviet Union, can be very productive. Big national programs of school computerization where these aspects are at the top of the agenda are being implemented for example in Estonia and Georgia[68].

Enrollment in pre-school

The first goal of the EFA, agreed on in Dakar, is to expand and improve comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children. Early childhood and preschool education is considered an issue of importance internationally as there is a growing understanding supported by research evidence that a good and equal start at learning determines significantly the success of children and young people in their future educational careers. Therefore, universal access to quality early childhood and preschool education is seen as a strategic question of education reforms. In this sector of education Kazakhstan faces probably the biggest challenges with regard to achieving the internationally agreed-upon goals and targets of MDG and EFA as well as the main goals of national policies.

Graph 2.1. Enrollment in pre-school organizations and pre-primary education, 1993-2003



Source: State Program for Development of Education in Republic of Kazakhstan in 2005-2010.

In the second half of the 1990s, the percentage of children attending kindergartens was declining drastically due to a newly introduced financing scheme, which put a heavy burden on parents. In 1999, compulsory 1-year pre-primary school was introduced for 5- and 6-year olds. This was – and remains – a Government policy for enhancing access to pre-school education. Since then, the percentage of children in the age group attending is growing.

At present, 40% of 5-year olds and 60% of 6-year olds are attending this compulsory program. In 2003, a complex of teaching and learning materials was introduced in pre-primary settings. These materials are available to 40% of pre-primary students, and are paid for by local authorities.

Despite growing numbers of attendance, access to pre-school education remains a problem. As soon as possible, it is important to reach the level of universal pre-school education, which is an international practice in developed countries – and also corresponds to EFA goals. A priority should be to ensure that the most vulnerable children – those with special needs, those in deprived situations economically or geographically, and those from different ethnic backgrounds – will have good opportunities to take the first steps in school as this will considerably enhance their future progress. Special programs and financial schemes should be developed for that purpose. According to the State Program, currently 52,000 children with special needs are not attending kindergartens or pre-schools, and the number of special education groups is declining in several regions.

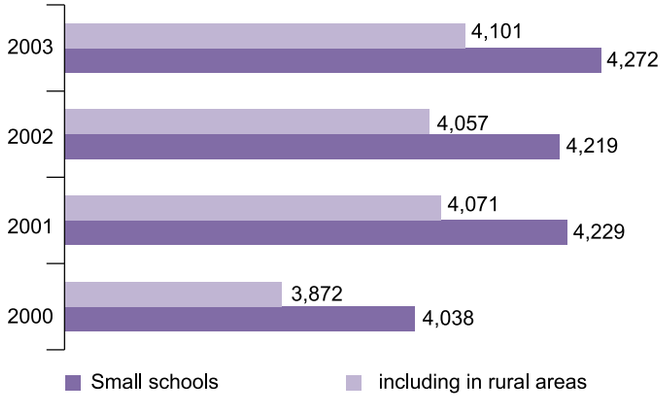
In the beginning of 2005, the new Minister of Education and Science stated the targets of guaranteeing pre-school education to 30% of children of the relevant age group and 1-year pre-primary education for 75% of the age group. As for (primary and) secondary education, the goals are to ensure equal access and raise the quality of education. For these goals to be accomplished, an extended program of building new school facilities will be launched.

Small schools

There is a growing number of small schools in Kazakhstan – according to MoES, in the last five years the percent of small schools (with less than 40 students attending) grew by 4.5%.

The problems connected to small schools include: availability of qualified teachers, availability of learning materials and equipment, school facilities in dire need of repairs due to lack of local financing because of the poverty situation, and poor teacher access to in-service programs on teaching multi-grade groups.

Graph 2.2. Number of small schools in Kazakhstan, including in rural areas.



Source: Education and Science of the Republic of Kazakhstan, 2003 (Informational statistical materials). p. 11. www.edu.gov.kz

There are regions where most of the schools fall into this category – in Northern Kazakhstan oblast 85.6% of schools

[68] Please, refer to www.tiigrihype.ee and www.htk.tpu.ee/TLG.

are small, in Akmolinsk oblast 77%, in Kostanai oblast 73%, in Pavlodar oblast 72.2% and in Eastern Kazakhstan oblast 59.2%. This poses a national dilemma with regard to quality of and access to secondary education – in small schools it is not easy to ensure a high quality of education, but reducing the number of schools and concentrating them will negatively affect access.

The Government program for developing rural schools Auyl-Mektebi concentrates on the construction and repair of school facilities. It would be equally important to develop special programs for teacher training, possibly by correspondence or distance education, and for providing learning and teaching materials and equipment to small schools.

Language of instruction

Different languages of instruction are a challenge to the education system in terms of teacher training, in-service training, and development of learning and teaching materials. The provision of teacher training for teachers in ethnic minority schools (Uigur, Uzbek) is currently not meeting actual needs. The provision of textbooks is also still insufficient. To sustain quality in minority schools, allocation of significant funding is required.

The first results of Unified National Testing at the end of secondary education have shown that, on average, the achievements of graduates of the schools with Kazakh as the language of instruction tend to be lower than the achievements of the graduates of Russian schools. This is certainly an indication of a gap in educational tradition in the Kazakh language, which was caused by the ethnic and language policies of the former Soviet Union. For example, at the end of the 1980s, there were only two schools in the city of Almaty with Kazakh as the language of instruction. The government is paying much attention to the renewal of educational and cultural traditions in Kazakh. However, the actual needs with regard to the quality of education in Kazakh schools suggest that more targeted professional efforts are needed along with promotion of the use of Kazakh as the state language.

A new Government initiative is to pilot trilingual teaching in schools. The declared policy is that in schools in Kazakhstan, Kazakh, Russian, and English should be used equally to ensure the capacity of graduates to communicate both locally and internationally. The methodology of this program needs to be further thought through in order to ensure the quality of learning for all, primarily in mathematics and science, and the knowledge of terminology of mathematics and science in Russian and/or Kazakh, which is essential for further studies in the universities in Kazakhstan.

Monitoring and evaluation in the education system

In Kazakhstan, the concern over the decline of the quality of education has been expressed repeatedly at different levels of policymaking, including the Concept of the Development of Education until 2015[69]. In response to this concern, two policy tendencies are evident – to foster the development of a specialized set of schools for children identified as talented, and to emphasize the reliance on external assessment. Also, the new National System of Evaluation of the Quality of Education, which is under development for all levels of education, foresees heavy reliance on external assessment.

In general, the educational policies of Kazakhstan to date have been based to a significant extent on the categorization of children and young adults into specialized educational paths. This is a feature common to other CIS countries. The Law on Education of Kazakhstan for example defines elite education as a specific type of schooling. Following that legislative policy, a growing number of schools for the talented and schools of a new type, with different biases in the curriculum and corresponding entrance requirements (frequently with selection of the entrants to 1st grade) have been established. On the other hand, youngsters with behavioral problems (deviant behavior) are sent to educational establishments under the control of the Ministry of Internal Affairs, and children with special needs are sent to specialized institutions.

The decision to assign children to different paths (schools) is partially based on medical evaluations and observation of behavior, but partially also on formative assessment of learning outcomes in schools, which makes the stakes high. Formative assessment of learning outcomes is also used in the administrative accountability of schools, which makes the stakes high not only for the learners, but also for teachers and school administrators.

Specialized 'innovative' schools for children identified as talented, with an extended curriculum in some subjects, currently have 664,500 students in attendance, which is approximately 22% of all learners in general secondary education. According to the data provided by the Ministry of Education and Science, among these schools, 33 directly specialize in children identified as talented. There are 115 gymnasiums, 62 lyceums, 69 schools with some study groups following the lyceum program, 249 schools with some study groups following the gymnasium program, 45 schools with curriculum profiles stressing some subjects, and 2201 schools with a deepened program in some subjects. This is an extensive system. A question that probably needs to be asked by policy makers is: What are the actual consequences of the separation of a significant percentage of learners in specialized institutions, and how does this help to achieve the improvement of access to quality education for all, which is a national priority and also a goal of the EFA?

The understanding of outside assessment defined in the Concept of the Development of Education until 2015 also includes international assessments, starting with joining international assessments like PISA, TIMSS, and others. So far, no decisions in this direction have been made, however. Thus,

[69] The Concept of Development of Education in the Republic of Kazakhstan by 2015

the discussions on the quality of education in Kazakhstan still remain without input from international comparisons, which is not fully in accordance with aspirations to join the international educational space.

In 2002-2004, a system of national testing to be administered at the end of secondary education for university entrance was introduced. This system also indirectly influences the first two levels of compulsory education by stressing teaching and learning for tests. The tests are overwhelmingly knowledge-centered and thus orientate the whole school system in a different direction than the development of competences, which is proposed in the draft framework documents. In addition, there is already evidence that the new system considerably raises inequality in secondary education by setting standards so high that private tutoring is necessary for success. There are already centers in each oblast, which provide tutoring for tests for fees.

The State Program for Development of Education in the Republic of Kazakhstan in 2005-2010 approved by the President of Kazakhstan in October 2004 includes a provision for sample-based monitoring of learning outcomes at the end of 4th grade. The tests are to be administered in mathematics and the mother tongue. The Ministry of Education and Science is currently preparing a methodological basis for such an approach to system-wide quality assurance. This is a promising approach, taking into account the best practice internationally, and has the potential to reduce the deeply rooted positive view of assessment for administrative accountability. At the same time, the plan is to introduce school-based tests at the end of every term (4 times a year). Although this is already a wide practice, making it more rigid may again add to the selectiveness of particular schools. It would be important to involve international expertise in the development of this new system.

It is crucial for further improvement of access to quality secondary education that the new system of quality assessment be carefully designed to meet the declared goals. In international practice, there are many examples of how a policy-oriented external assessment system can revert the intended pedagogical practices towards more control of factual knowledge rather than the development of competencies, which is the envisaged approach of the new National Curriculum for 12 years of secondary education. The national system of evaluation and monitoring of learning outcomes should involve assessment at all levels of secondary education; however, the approaches to assessment can be different as shown by the best international practice.

Educational management information system

Steering the education system towards achieving quality secondary education for all educational administration needs high quality and useful data for making informed decisions and preparing policy proposals. Now in Kazakhstan, there is already an ample amount of data gathered from schools each year. Data gathering is based on 9 national and 15 inner system statistical accounts. Filling and controlling the forms is a heavy task for each school principal and educational department at the local and regional level. The exercise of gathering data has taken such dimensions because over the years newer and newer forms have been introduced based on different political and administrative priorities over time and not on proper analysis of informational needs of different parts of the education system and stakeholders in the society.

For effective administrative decision making and steering secondary education at policy level it is necessary to introduce a well planned and designed educational management information system (EMIS). The EMIS is based on careful analysis of informational needs of different functions (players) in the education system and its main role is to integrate different kinds of data for the purposes of management, research, and the planning of education[70]. For the EMIS to function, infrastructure and personnel need to be established at all levels of educational management – school, raion department, oblast department, and central level (Ministry). Responsibilities and information flows in the system need to be carefully planned and coordinated.

To use the gathered data more effectively in policy development, indicators need to be developed on the main policy aspects of the functioning of secondary education[71]. A system of indicators makes it possible to easily get a picture of both the current balances and proportions in education and the tendencies over a certain period of time. Getting such a picture from raw statistical data means laborious work for anybody who attempts it and usually neither administrators nor policy makers are able to take time for that. Thus, the ample amounts of collected data stay almost unused. This is also the situation in Kazakhstan.

To enhance policy development and the monitoring of policy implementation as well as for more informed administrative and management decision making it is highly necessary that Kazakhstan establish an educational management information system. This will be the basis for ensuring improved access to quality education for all.

[70] L Carizzo, K Savaggio, N. Bella. Use of information systems for education development plans elaboration and monitoring. Series: Education: policy and strategy 5. UNESCO, 2003, p. 13-14.

[71] L Carizzo, K Savaggio, N. Bella. Use of information systems for education development plans elaboration and monitoring. Series: Education: policy and strategy 5. UNESCO, 2003, p. 56-82.

Financing of education

The financing of education in percentages of the GDP has grown during recent years: from 3.1% in 2000 to 3.8% in 2004. The share of secondary education was 2.3% of the GDP in 2000, 2% in 2001, 2.2% in 2002 and 2.3% in 2003 (Please refer to the Annex, Tables 2. G and 2.H).

At the same time, a bulk of the financing is provided by regional (oblast) budgets, which are considered part of state financing for education. In 2000, 86.5% of the financing of secondary education was from regional budgets, and this level has been largely sustained in the following years – 83.3% in 2001; 88% in 2002; and 86% in 2003 (Please refer to the Annex, Table 2.G).

This is an indication of the importance of monitoring regional differences in education financing as the regions (oblasts) have different economical bases.

The dynamics of regional financing for education from 2000 to 2003 is characterized by growing percentages in most regions, the biggest growth reported in East-Kazakhstan (growth by 2.7 percentage points of the GDP), Atyrau, and South-Kazakhstan oblasts (growth by 1.9 percentage points). However, in some regions (oblasts) the percentages have decreased: from 6.9% to 4.3% in Zhambyl oblast, from 2.6% to 2.2% in Mangistau oblast and from 3.9% to 3.8% in Aktobe oblast.

Increasing education financing is a key to improving access to quality secondary education in Kazakhstan.

The level of state financing for education in order to sustain quality education for all, recommended by the Dakar conference on Education for All, is 6-7% of the GDP. In 2000, the actual total public expenditure on education was 6.1% in New Zealand, 4.7% in Australia, 5.4% in Canada, 4.8% in the US, 4.2% in Chile, 4.1% in Hong Kong, 4.4% in Iran, 6.2% in Malaysia, 5.4% in Thailand, 5.0% in Hungary and Poland, and 4.2% in Slovakia.

Table 2.1. Public expenditure for Education, % of the GRP

№	Oblast/City	1997	1998	1999	2000	2001	2002	2003
1.	Kazakhstan	4.4	4	3.9	3.3	3.3	3.2	3.3
2.	Akmola oblast	5.8	4.9	5.2	5.2	-	-	5.8
3.	Aktobe oblast	3.7	3.1	4.4	3.9	-	-	3.8
4.	Almaty oblast	5.7	6.2	6.1	6.1	-	-	7
5.	Atyrau oblast	2	2.2	2.4	1.8	-	-	3.7
6.	East-Kazakhstan oblast	4.4	3.5	3.5	3.3	-	-	6
7.	Zhambyl oblast	7.6	6.4	7.1	6.9	-	-	4.3
8.	West-Kazakhstan oblast	5.6	4	5	3.1	-	-	3.9
9.	Karagandy oblast	3.2	2.8	2.5	2.3	-	-	2.8
10.	Kostanay oblast	3.7	3.3	3.4	2.9	-	-	3.3
11.	Kyzylorda oblast	7.6	8.2	8.1	4.3	-	-	5.2
12.	Mangistau oblast	2.1	2.5	2.7	2.6	-	-	2.2
13.	Pavlodar oblast	4.4	2.1	3.6	2.6	-	-	3.3
14.	North-Kazakhstan oblast	5.5	7.5	5	5.2	-	-	5.8
15.	South-Kazakhstan	5.7	7.1	5.9	5.4	-	-	7.3
16.	Astana city	1.7	4.6	1.5	-	-	-	1.6
17.	Almaty city	1.7	1.6	1.3	1.2	-	-	1.2

Source: Kazakhstan InfoBase. Web-site of UNDP Kazakhstan www.undp.kz.

Non-formal education

In formal schooling as it is organized today, it may be hard to take quick steps towards improving access to and at the same time quality of secondary education for all. Non-formal education can be a helpful approach to enhancing the situation, especially for ethnic minority children, in areas with small schools, and in poverty-inflicted areas.

Non-formal education can be organized in different forms – study circles, computer network based learning projects, extra-curricular activities, and others. It would be most useful in the domains that are essential to high quality secondary education, but which are not focused enough upon the formal curriculum (the Standards). These may include life skills education, environmental awareness, citizenship education, and others.

The development of non-formal education opens up the valuable possibility of enhancing the involvement of civil society, local communities, and NGOs, in achieving the national goal of improving access to quality secondary education. Considerable capacity in different areas, which could be part of non-formal education, already exists in Kazakhstan NGOs. Using this capacity could significantly improve and quicken the process of working towards ensuring quality secondary education for all.

Conclusions

Considering the aim of the State Program for Developing Education in Kazakhstan in 2005-2010 to achieve universal high quality compulsory general secondary education, further strategies need to focus on both access to and quality of secondary education, including universal primary education. A combination of the goals of MDG and EFA forms therefore a good basis for reviewing the needs and options of the further development of education in Kazakhstan. It is also important to find ways to monitor the tendencies in secondary education in order to develop and implement new policies and measures in the course of societal and economic changes. MDG2 and EFA set essential baseline targets to that end.

Universal high quality secondary education can be achieved and sustained when complex targeted efforts are made continuously. Experiences from other countries show that measures at policy level, economic incentives and financial investments as well as improvements in educational administration, teacher training, and classroom pedagogy are essential for the achievement of that goal.

Based on the analysis of the situation from the point of view of the broader framework of goals of MDG2, EFA, and the State Program for Developing Education in Kazakhstan in 2005-2010, it is apparent that Kazakhstan has made good progress in several of these aspects. Designing complex national policies concentrated in the State Program for Developing Education in Kazakhstan in 2005-2010 may prove over time to be the key to further success, provided that the goals and the envisaged changes will be translated into specific well-thought-out activity plans, which are covered with sufficient finances. Once that is the case, ensuring universal high quality secondary education can probably be achieved in Kazakhstan by 2015. The priorities of further efforts to that end should include the following points of leverage:

It is of utmost importance to improve access to quality secondary education for vulnerable groups of children. For children with special needs, inclusive education could be considered as an option, and it would be essential to develop a complex strategy to expand the possibilities for inclusive education

Along with the beginning of the implementation of the State Program for Developing Education in Kazakhstan in 2005-2010, which identifies transfer to a 12-year education with renewal of education content according to an outcomes-based model, it should be recommended that a complex implementation plan including curriculum writing, teachers' in-service training and changes in pre-service teacher training will be developed. As a part of the complex curriculum change, introducing life-skills-based education should be highly recommended.

To improve the effectiveness and efficacy of pre-service teacher training and to involve more schools in innovative work for ensuring quality education for all, the links between higher education institutions and schools need to be considerably strengthened.

The newly introduced system of Unified National Testing is an achievement on the way to ensuring the quality of secondary education. It is equally important to find ways to ensure equality of opportunities first of all by reducing the need for private tutoring for tests, especially state organized tutoring for fees. At the same time, it is increasingly important to test not only factual knowledge, but also complex competencies like problem solving.

Concerning the use of ICT, Kazakhstan has already achieved much, and, the next steps should be considered and planned. These should involve special attention to children in need. In addition to expanding and updating the technical facilities and continuing to develop electronic learning materials, it should be recommended that providing distance education possibilities for small schools and teachers' in-service training as well as creating computer-based learning networks of students and teachers be considered priorities.

Kazakhstan is making significant efforts to expand pre-school and pre-primary education. To ensure an equal start in education for all children, it is highly recommended that expansion of the network of free-of-charge nursery schools and pre-schools, and necessary measures to ensure quality of learning in these establishments be carefully planned based on the target to provide these educational opportunities for all children of appropriate age group earlier than the year 2015. This will have a considerably positive effect on raising the quality of primary education.

To improve policy development and administrative decision making it is essential that the Educational Management Information System be fully developed at all levels.

It is very important, for ensuring the quality of secondary education, that a national system for monitoring learning outcomes be developed for all levels of secondary education.

Kazakhstan should consider increasing financing for education, paying attention to the reduction of regional disparities.

To improve access to and quality of secondary education, it will be necessary to develop a strategy for non-formal and alternative education. It is recommended that this strategy foresee specific measures for better involvement of civil society, local communities, and NGOs.

Further progress in the direction of providing high quality secondary education for all in Kazakhstan should be consistently monitored. To this end, it is important to develop a system of specific indicators as part of the educational management information system (see also above, p. 14-15). The MDG-2 indicators – net enrolment in primary education and youth literacy rate – do not allow monitoring changes towards meeting the broader framework of goals of MDG, EFA, and the State Program for Developing Education in the Republic of Kazakhstan in 2005-2010. The indicators should focus on potentially sensitive areas like drop-out, settlements without schools and alternative arrangements for school access, special needs education provision, support to children from low-income families, differences in learning outcomes between urban and rural schools and in schools with different languages of instruction, and other. For to be useful in designing appropriate and effective policy response, the indicators should highlight regional differences. Some indicators could be suggested for further consideration and might include for example:

- ✓ School enrolment by levels of secondary education, gender, and region;
- ✓ Percent of students leaving the school they attend not because of relocation of the family (dropping out), by region and cited cause for leaving;
- ✓ Number of study places in boarding schools by region as a percent of the number of school-age children in settlements without school by region;
- ✓ Percent of all children with special needs enrolled in specialized institutions, and in programs of inclusive education by gender, region, rural/urban;
- ✓ Percent of children from low-income families receiving state subsidies for schooling (by region) as compared to the percentage of low-income families in the region;
- ✓ Average results on Unified National Testing by subject, rural/urban location, region, gender, language of instruction.

If needed, the forms of data gathering for statistics should be adjusted to provide data for monitoring the key indicators once they have been approved and finalized by the MoES.

Connection with other MDGs

The MDGs set a baseline framework of goals for human and societal development. MDG2 is one of the keys to overall success as measured against this framework. In Kazakhstan, the most important connections between MDG2 and the other Goals, which are at the stage of interdependence with regard to success, include the following:

MDG1 Eradicate extreme poverty and hunger: achieving this goal is necessary in order to allow all children in Kazakhstan to go to school. There is evidence of cases in which, due to the poverty situation, school-age children in some rural as well as urban areas are deprived of access to school education. Some of these children may not even be officially registered, which leaves them out of the sight of officials.

MDG3 Promote gender equality and empower women: this is also one goal of Education for All, which is a part of the broader framework of goals to assess.

MDG5 Improve maternal health: studies in education show that maternal care is an important factor in school success.

MDG7 Ensure environmental sustainability: Kazakhstan faces serious environmental problems, which negatively affect the health of a big percentage of children. Ensuring children's health is key to their educational success.

MDG 3 | Promote Gender Equality and Empower Women

Target 4:

Eliminate gender disparity in primary and secondary education, preferably by 2005, and at all levels of education no later than 2015

The achievement of gender equality and the empowerment of women are important conditions for achieving human development.

Gender inequality hinders a country's socio-economic development as well as the development of civil society and local self-governance. Ineffective use of women's potential and unequal opportunities for fulfilling their plans and goals in life lead to tensions in interpersonal and institutional relations and the interaction between the states and citizens overall. Gender inequality is also economically disadvantageous for the government and society, as it impedes the development of human capital and renders ineffective development projects in economics, poverty eradication, and unemployment reduction.

Significance for Kazakhstan

Among the Millennium Development Goals in Kazakhstan, Goal 3 is one of the most likely to be reached and yet, strangely enough, one of the hardest to achieve.

Assessed against universally accepted indicators, Target 4 has already been achieved in Kazakhstan: there is no quantitative gender disparity in primary and secondary education, and there is no problem preventing girls' access to any level of education. However, the issue of the quality of education remains topical, regardless of gender, as it creates «equal starting conditions for all people so that they might have access to higher education and a successful career in the future, irrespective of their place of residence, household income level, ethnic identity, or physical ability»[72]. Achieving gender equality is not limited to fulfilling Target 4. By another global indicator – the proportion of women in the Parliament – Kazakhstan holds 85th place among 128 countries. In Kazakhstan, the proportion of women in parliament is 9.6%, which is below not only the average indicator for European countries (excluding Scandinavia), but is also less than the respective proportion in the countries of sub-Saharan Africa, Asia, and the Pacific[73].

Achieving gender equality is a crosscutting issue for all MDGs. It is enough to note the facts mentioned below to see that gender inequality negatively affects the socio-economic status of people. For example, the population of Kazakhstan is over 15 million, and there are over half a million more women than men. Over 30% of people do not live until 60, and most of them are men. Women constitute almost 70% of people who receive pensions. The gap between men's and women's savings in the pension funds is, on the average, 30%, due to lower average salaries of women, unpaid maternity leaves, absence of pension allocations during this period, lower retirement age, and smaller length of service needed for receiving pension. One-fifth of the youth below 18 years of age, mostly men, do not have secondary education. About a sixth of the population, predominantly families with many children, single women pensioners, and rural unemployed, lives in poverty, and most unemployed in the country are women[74].

Women's empowerment and the achievement of gender equality are the basis for achieving all other MDGs. Without progress in Goal 3, none of the other MDGs can be achieved, just as the progress in Goal 3 depends on how successfully gender-related problems in other Goals are resolved.

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[72] Living Standards and Poverty in Kazakhstan. Statistical Monitoring. Agency on Statistics of the Republic of Kazakhstan, UN TG on Poverty Alleviation. Almaty. 2004. P. 5.

[73] According to the data of the Inter-parliamentary Union as of April 2005, www.ipu.org.

[74] Living Standards and Poverty in Kazakhstan. Statistical Monitoring. Agency on Statistics of the Republic of Kazakhstan, UN TG on Poverty Alleviation. Almaty. 2004. P.21.

The effectiveness of national strategies and programs that do not take into account gender inequality is limited, as programs aimed at reducing poverty without accounting for the gender factor only aggravate the problem of «feminization of poverty». Women's rights cannot be fully realized before reproductive health problems are resolved. Real gender equality is also impossible without elimination of gender disparities that worsen men's status. Thus, achieving gender equality in Kazakhstan is one effective way of overcoming poverty, combating HIV/AIDS and TB, and reducing maternal and child mortality. It is therefore an important human development factor.

MDG 3 progress in Kazakhstan

Women in politics and public administration

Women are insufficiently represented at a high level of decision making. There are eleven women in the Parliament, or 9.6% of the number of MPs, in Mazhilis – 8 women (or 10.4%). Women constitute 17.1% of the members of oblast maslikhats[75], and 18.3% of people holding political appointments in the central management structures.

At present, women are not represented at all in the highest political leadership of the country (president, prime minister, vice-prime minister, oblast akims, National Bank leadership, etc). In 2005, one woman was appointed Deputy Prime Minister, two women – ministers, nine – deputy ministers, one – head of the Central Elections Commission, one – chairman of the national agency, and seven – deputy oblast akims. Among the deputy rayon akims, 17% are women; among rural and community district akims, 11% are women, and among their deputies – 18% are women.

Out of fifteen ministers in the Government of Kazakhstan, four (27%) are women. This proportion is below the level of Scandinavian countries but higher than in Russia, where there are no women among 17 ministers.

The proportion of women employed in the state executive bodies is 58.6%. Women lead 24% of all enterprises and organizations in Kazakhstan.

Out of twelve registered political parties, two are headed by women. Still, women are not sufficiently involved in the activities of political parties, especially in terms of leadership. During the recent elections to Mazhilis, women were placed fifth or below in most of the party lists. Political parties, with the exception of Asar and Ak Zhol, do not have gender policy and female empowerment mechanisms, limiting their programs to demanding welfare payments, and protecting families, mothers, and children. As a result, only 9 out of 166 female candidates were elected to Mazhilis, and one of them was rejected, her place consequently taken by a man.

Gender Development Index

In addition to the unified MDG 3 indicators – access to education and women's representation in legislature – the situation can be assessed through the Human Development Index and its components.

The Human Development Index (HDI) is an integrated indicator that accounts for access to education, life expectancy, and income level. It is calculated annually for almost all countries in the world.

As gender affiliation influences index components, the Gender Development Index was introduced in addition to the HDI and is calculated by measuring the average achievements of men and women in the three basic dimensions captured in the Human Development Index (average life expectancy, access to education, and adjusted real income).

Table 3.1. Human development indicators in Kazakhstan, segregated by gender

Indicator	1999	2000	2001	2002	2003	Change 1999-2003
Average life expectancy, years	65.7	65.5	65.8	66.0	65.8	0.1
women	70.9	71.1	71.3	71.5	71.5	0.6
men	60.6	60.2	60.5	60.7	60.5	0.1
Gender gap, years	10.3	10.9	10.8	10.8	11.0	-0.7
Proportion of employed women among wage workers, %	47.6	42.2	45.2	45.0	45.0	-2.6
Ratio of women's wages to men's wages, %	67.6	61.5	58.7	61.7	60.8	-6.8
GDP per capita, US dollars	4,293	4,488	5,220	5,870	6,527	2,148
women	3,152	2,683	3,284	3,797	4,223	926
men	5,521	6,429	7,305	8,104	9,008	3,465
Gender gap, US dollars	2,369	3,746	4,021	4,307	4,785	2,540

Source: Living Standards and Poverty in Kazakhstan. Statistical monitoring. Agency on Statistics of the Republic of Kazakhstan, UN TG on Poverty Alleviation. Almaty, 2004.

[75] Preliminary 2004 data of the Agency on Statistics of the Republic of Kazakhstan.

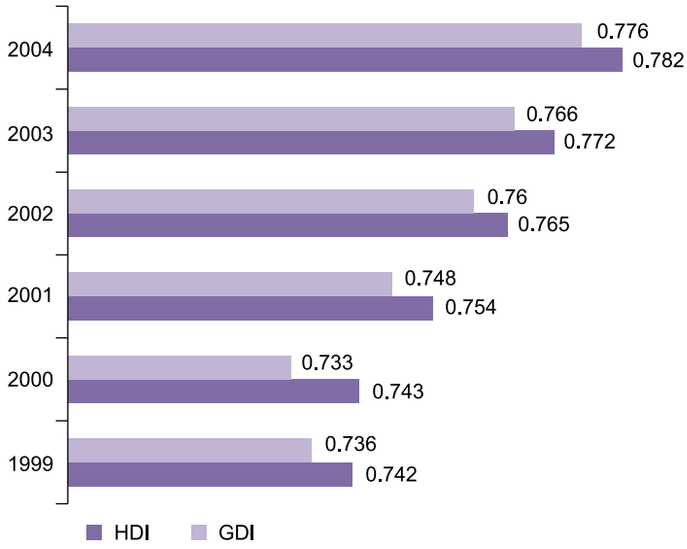
In the absence of gender disparity in access to education in Kazakhstan, there is a significant gender disparity in life expectancy at birth and the GDP per capita.

During 1999-2003, there was a positive tendency in the growth of the Gender Development Index in all three dimensions – life expectancy, access to education, and the GDP per capita.

A remarkable gap in life expectancy in women's favor is compensated for by an even larger gap in income level in favor of men. In 2003, life expectancy for men was 11 years less than that for women (60.45 and 71.46 year, respectively), while the average nominal wage of women in all branches of economy was only 60.8% of that of men, and the GDP per capita was 2.1 times less for women ($4,200 and $9,000, respectively).

In 2003, the gender gap in life expectancy was 183 points (in favor of women), in access to education – 16 points (in favor of women), and in income – 126 points (in favor of men). This has lead to a 13-point decrease in the difference between the HDI and the GDI – from 0.032 in 1999 to 0.025 in 2003. Overall, in the period from 1999 to 2004, the HDI and the GDI dynamics were positive (Graph 3.1).

Graph 3.1. HDI and GDI dynamics in Kazakhstan, 1999-2004



Source: Living Standards and Poverty in Kazakhstan (statistical monitoring). Agency on Statistics of the Republic of Kazakhstan, Expanded UN TG on Poverty Alleviation, Employment and Social Safety. Almaty, 2004. P. 15

However, the data on other indicators points to existing gender inequality in many spheres of life (Table 3.2). It is most visible in labor (the difference in income between men and women grew by 7% in five years), health (anemia among pregnant women remains high), politics (women's political participation is still too low to speak of gender-balanced policy) and family life (the spread of domestic violence, unequal distribution of household responsibilities).

Consequences of transition (1991-2004): gender aspects

Social and economic changes of the past decade were characterized by the activation of two opposite views on the roles of men and women in society – the conservative and pro-equality views.

The transition period delivered a hard and yet uncompensated blow to women's status in the society and labor market, significantly changing the gender composition of the leadership, political posts, wage employment, unemployment, etc.

Just as in many other countries, women's career opportunities are limited by the so-called «glass ceiling». The traditional preconception that a woman cannot be the chief manager allows her to rise to the level of deputy director or vice president of a company, at best. This is especially true in the spheres of public administration, industry, agriculture, science, education, and healthcare.

Moreover, women's professional growth is hampered by the so-called «sticky floor» phenomenon, that is, women have more limited starting opportunities than men,. When performing their reproductive function, young women leave the wage labor market, losing qualifications, experience, and skills, and upon returning to their workplaces they cannot or don't strive, because of their household duties, to achieve career growth and hold managerial positions. All this makes women less desirable as employees, reducing their incomes and social achievements.

The most significant response to the hardships of the transition period was the radical change of gender roles in society. From being those who brought additional income to the household, to becoming the main breadwinners, women have taken on the responsibility for the economic survival and socio-psychological preservation of the family. At the same time, even the status of a breadwinner but with low incomes and lost social protection that had been provided before, did not lead to the change gender ideology in the society as a whole, concerning the priority of men. For example, while earning more than her husband, or having an unemployed husband, a woman still does not feel free of the traditional duties of taking care of children and the family, while her husband continues practicing unequal gender relations, pleading the stability of the traditional family and societal models.

The issue of violence against women and children has become more acute. In 2003, of 118,000 registered crimes, over 25,000 were committed against women. 501 women were killed; 326 women were seriously injured; 1,200 women were victims of rape (according to the experts' estimates; in reality, this number is 10 times higher), and 1,400 women were beaten and tortured. The number of crisis centers for victims of violence increased from 2 in 1999 to 38 in 2004. (This is official data; according to the estimates of the Crisis Centers Union of Kazakhstan, there are 20 centers). 351 cases of establishment and maintenance of haunts for prostitution were registered, as well as 4 cases of female trafficking (illegal recruitment for sexual or other exploitation). Given the high latency of this type of crime, its dynamics is as follows: 8 cases

Table 3.2. Gender inequality factors for women of Kazakhstan

Indicator	Proportion of women in total number, %	
A. Employment	1999	2004[76]
economically active population		49.1
Wage workers	47.6	46.7*
self-employed		50.7*
unemployed	62.1	57.3*
economically inactive population		61.7
Poor		60.0
Ratio of nominal women's wage to nominal men's wage in all branches of economy	67.6	61.7*
Ratio of average pension for women to average pension for men	73.7	80.2
B. Health		
Health index	30.0	30.0
anemia of the pregnant	58.0	58.8*
C. Violence against women and children		
Rape		91.3
Torture		79.8
beating		70.5
sexual violence		65.2
D. Public administration (governance)		
Members of Parliament	11.2[77]	9.6*
Members of Maslikhats	18.7[78]	17.1
Political appointments in central government structures	7.8	18
Deputy rayon akims	…	17
Rural and community districts akims	…	11
Deputy rural and community districts akims	…	18
Heads of enterprises and organizations in the country overall	…	24

Sources: Women and Men of Kazakhstan. Gender Statistics. Agency on Statistics of the Republic of Kazakhstan, Almaty, 2000. Women and Men of Kazakhstan. Gender Statistics. Agency on Statistics of the Republic of Kazakhstan, Almaty, 2004. Poverty in Kazakhstan: Causes and Cures. UNDP. Almaty, 2004. Kazakhstan: Achievements, Issues and Prospects. A perspective by the United Nations. Almaty, 2004.

in 1999, 3 in 2000, 5 in 2001, 0 in 2002, and 14 cases in the first 11months of 2004[79].

It would be wrong to say, however, that men benefited from the historical change of the society's structure (Table 3.3). Men have mostly suffered from the worsening of such indicators as health status, life expectancy, mortality from cardio-vascular diseases, education potential, employment opportunities for people over 40-45, labor migration from rural to urban areas, and uncertainty about the future. According to the estimates, every third man and almost half of women have income below the subsistence minimum (33.2% and 44.9%, respectively[80]).

In the end, the social price of the transition was very high for

[76] Marked with «*» – preliminary 2004 data of the Agency on Statistics of the Republic of Kazakhstan

[77] In 2000.

[78] In 2002.

[79] Gender Equality Strategy in Kazakhstan for 2005-2015. Draft. Astana, 2005. P. 31.

[80] 2000 National Human Development Report. UNDP Kazakhstan. 2001. P.24.

Table 3.3. Gender inequality factors for men of Kazakhstan in 1999 and 2003

Indicator	Proportion of men in total number, %	
A. Demography	1999	2003
Population	48.2	48.2
Average life expectancy	60.6	60.6[81]
People of working age	948 per 1,000 women	948 per 1,000 women
B. Health		
Alcoholism	91.6	88.0
Drug addiction	91.0	90.5
HIV incidence	77.5[82]	76.4
Mental disorders (first time diagnosis)	61.7	64.5
Active tuberculosis	…	57.2
Disability		55.3
Deaths at work (industrial accidents)	93.9	93.5
Deaths from accidents, poisoning, and injuries, at a working age	83.3	82.5
Deaths from blood-circulation diseases, at a working age	77.7	75.9
C. Labor		
People employed in rough labor	92.6	93.3
People working with unsafe equipment	74.7	85.4
People working in conditions that do not meet sanitary and hygienic requirements	76.7	75.1
People working in harmful and hazardous conditions	58.4	60.2
D. Crime		
Convicted	90.0	88.0

Sources: Women and Men of Kazakhstan. Gender Statistics. Agency for Statistics of the Republic of Kazakhstan, Almaty, 2004. Poverty in Kazakhstan: Causes and Cures. UNDP. Almaty, 2004. Kazakhstan: Achievements, Issues and Prospects. A Perspective by the United Nations. 2004.

both men and women and will hardly be compensated soon.

On the one hand, men are taking high risks working in rough labor conditions, while on the other hand, due to existing stereotypes and structures, horizontal segregation is growing stronger in the labor market. This negative trend leads to the feminization of a number of spheres and lays foundations for persistent gender inequality in future. For example, women make up 80% of teachers in the secondary education sector (96% in 1-4 grades, and 85% in 5-11 grades[83]). To overcome gender stereotyping in textbooks and everyday communication between students and teachers, it is necessary to motivate male teachers to work in the secondary education sector.

Gender aspects of regional disparities

Significant regional disparities in living conditions in Kazakhstan are due to various social, economic, demographic, and cultural factors. It is enough to note that differences in poverty rates are about 20 times, and in economic inequality–1.7 times[84]. Gender disparities also influence the well-being of different social groups, depending on the type of residence (urban/rural) and its location (center/provinces).

Gender specifics of the poverty situation in the regions are as follows. The gap between men's and women's wages is widest in the oblasts with high GRP per capita due to extraction of natural resources. As is known, the mining industry is mostly dominated by men. In West-Kazakhstan oblast, the average salary of women is 46.5% of that of men, in Atyrau and Mangystau

[81] 2004 data. Average life expectancy for women was 72 years, or 11.4 more than that for men.

[82] In 2000.

[83] Education for All: The Key Goal for a New Millennium. 2004 National Human Development Report. UNDP. Almaty, 2004.

[84] Poverty in Kazakhstan: Causes and Cures. UNDP. Almaty, 2004.

Table 3.4. Regional disparities in poverty and gender inequality in Kazakhstan, 2004

Region	HDI	Proportion of people with income below the subsistence minimum, %			GRP per capita, US dollars	Ratio of women's wages to men's wages, %	Life expectancy gap between men and women, years	% Unemployment among men	% Unemployment among women
		total	urban	rural					
Akmola	0. 731	14.0	10.9	20.6	4,190	75.7	11.9	8.3	10.1
Aktobe	0. 793	14.3	6.4	24.9	8,734	56.7	12.5	6.0	12.9
Almaty	0. 720	15.2	10.3	17.3	3,037	71.7	10.4	7.2	8.4
Atyrau	0.866	29.1	20.6	41.8	31,467	47.2	11.4	8.7	9.8
East-Kazakhstan	0.755	14.9	7.1	25.6	5,341	70.1	12.2	6.6	8.0
Zhambyl	0.721	18.3	14.6	21.2	2,522	67	12.2	10.3	10.2
West-Kazakhstan	0.799	14.4	3.0	22.4	9,274	46.5	11.4	6.5	12.2
Karganda	0.773	13.5	7.4	38.9	7,550	61.2	14.5	5.4	9.3
Kostanay	0.757	19.0	7.6	32.1	5,814	69.7	11.8	8.0	8.9
Kyzylorda	0.770	26.5	21.4	35.7	5,849	63	8.7	11.2	9.1
Mangystau	0.837	21.0	15.4	47	17,479	47	11.7	7.0	13.2
Pavlodar	0.793	14.5	6.6	28.0	7,090	61.2	12.6	5.7	9.8
North-Kazakhstan	0.733	12.0	3.7	17	4,220	79.3	11.4	9.1	7.2
South-Kazakhstan	0.737	23.0	17	26.4	2,780	68.8	9.5	5.8	10
Astana city	0.840	1.1	1.1	-	13,845	68.6	9.4	3.2	13.4
Almaty city	0.720	15.2	15.2	-	3,037	68.6	9.6	7.2	8.4
Republic of KAZAKHSTAN, GDP	**0.782**	**16.1**	**9.2**	**24.8**	**2,713.8* 7,260****	**61.7**	**11.4**	**7.0**	**9.8**

** according to the official exchange rate of the National Bank, in current prices*

*** PPP*

Source: Living Standards and Poverty in Kazakhstan. Statistical Monitoring. Agency on Statistics of the Republic of Kazakhstan, UN TG on Poverty Alleviation. Almaty, 2004.

oblasts – 42.7% and 47%, respectively, and in Aktobe oblast – 56.7%. In poor oblasts, the gap is smaller than the national average (61.7%). In North-Kazakhstan oblast, the average salary of women is 79.3% of men's salary, in Almaty oblast – 71.7%, in Akmola oblasts – 75.7%, and in Zhambyl oblast – 67%.

In the oblasts dominated by the oil-and-gas industry, there is a significant disparity between the proportions of people below the subsistence minimum in urban and rural areas. In Mangystau oblast, the ratio is 15.4% versus 47%, in Atyrau oblast – 20.6% versus 41.8%, in Aktobe oblast – 6.4% versus 24.9%, and in West-Kazakhstan oblast – 3.0% versus 22.4%. The higher the incomes in the cities, the lower they are in rural areas.

In high-income regions, there is also a serious gap between female and male unemployment, in favor of men. In Astana, the figures are 13.4% and 3.2%, respectively, in Aktobe oblast – 12.9% . This situation may be due to such factors as higher demand for male labor in the industries where rough labor is needed, and shift work. In Astana, women's prevalence among the unemployed is due to a high demand for manpower in spheres where rough labor and work in shifts is needed. In Astana, men may be in higher demand in construction, transport, communications, and service spheres.

The influence of foreign direct investment on the gender situation, i.e. its impact on the ratio, quality, and stability of jobs created for men and women, their re-training, income growth, social protection, and labor conditions is rather ambiguous. For example, 46% of FDI is in oil-and-gas extraction, and only 10% is invested in the processing industry, half of which is metallurgy. Sectors that are most appealing for investors and enjoy most of FDI are dominated by men, while the restoration of clothing manufacture, food industry, and other mostly «female» sectors is going at a slow pace. Consequently, it is mostly men who benefit from the economic growth in dynamically developing regions.

Gender inequality can also be observed in the land tenure. The currently implemented land reform with the change of property rights infringes on women's rights in terms of land distribution (size, location, productivity), access to loans, access to knowledge and information, training programs and consultations.

The sizes of farms run by women are usually modest – all together they make up only 2.9% of agricultural lands. Having no property and assets that can serve as loan deposits, women have smaller opportunities to receive loans and credits, which makes their entrepreneurial activities less successful. The vast majority of rural women do not have money to buy out their land allotments. Sometimes, even though they have the documents for the land, they do not actually own it, because they could not establish a farm or agricultural co-operative.

Women head only 10% of farms in Kazakhstan. For example, in Almaty oblast, 20.3% of farms are headed by women, in Zhambyl oblast – 19.5%, while in North-Kazakhstan and Kyzylorda oblasts – only 0.8% and 1.4%, respectively.

Thus, regional aspects of poverty in Kazakhstan are closely related to gender inequality indicators. High rates of economic growth in oil-rich regions only deepen the gender gap in income level and unemployment, leaving far behind the living standards in rural areas. The rapid development of the mining industry, real sector, and finance have influenced primarily men's incomes. In short, those who benefit from rapid economic growth are men and cities, while those who lose are women and auls (villages).

Therefore, as is the case in other CIS countries, economic growth in Kazakhstan is gender-imbalanced. Women's access to and control over economic resources is still minimal.

Involvement of civil society in promoting MDG 3

Kazakhstan's civil society has been developing in the past several years, having institutionally strengthened its position in the dialogue with the government. Supported by three major forces – foreign donors, industrial and financial elite, and the state – the NGO sector has a certain potential for further growth.

In 2003, there were 2,430 registered NGOs, 150 of them – women's NGOs. According to experts' estimates[85], the number of women working in NGOs is three times higher than the number of men. NGOs are more active in the capitals (Astana, Almaty) and large cities, and in the regions where Russian-speaking population is predominant. The number of service organizations exceeds the number of NGOs with membership. A so-called NGO elite, which has better access to donor resources, has formed. The main driving force of NGOs' work is the enthusiasm and energy of their leaders. As the external resources for sustainable development are shrinking, NGOs that are not yet working with the government realize that the only opportunity to influence decision making lies in participating in elections to the legislature.

There are conflicting opinions on the contribution of women's NGOs in the country's development. Skeptics say that the «political movement of women is still a marginal phenomenon in the political life of society, and women's influence on national policy remains minimal»[86]. Optimists, on the other hand, emphasize the innovative and enterprising role of the NGOs, thanks to which new laws are developed, gender expertise of legislation is carried out, discriminative articles are abolished, and large-scale promotion of gender equality is taking place along with gender training for civil servants, policemen, youth, rural and poor women, and other groups of society. The women's movement actively participated in the discussions about draft laws on the following topics: equal rights and opportunities for men and women, domestic violence, non-commercial organizations, social procurement, education, and Gender Equality Strategy for 2005-2015, etc.

Women's NGOs are currently lobbying for gender budget mechanisms on the city and oblast levels. For example, Ust-Kamenogorsk Women's Federation Status is implementing a project called Gender Budgeting at the Local Level. Project initiators took into account that two-thirds of the measures outlined in the National Action Plan on Improving the Status of Women (adopted in 1999, the financing program acting till 2005) should be carried out with co-financing from local budgets. The main risk zone for the project was ensuring free access to budget information. NGO activists managed to obtain documents and materials that allowed the tracing of not only the allocation of funds for socially-oriented programs, but also the names of managers in charge of budget programs[87].

In the situation where international funding is decreasing, and the state has not yet finalized the social procurement mechanism, the third major player – private business – has appeared and is playing the part of sponsor and benefactor of social development programs more than ever. Kazcommertsbank, ATF bank, Seimar company and others have established social assistance foundations. It may be expected that such initiatives on the part of private business will further expand in future.

National policy

During the whole transition period, the Government of Kazakhstan demonstrated its commitment to the principles of gender equality. The very issue of gender equality was first put forward as a national policy goal during the preparations for the Beijing Conference in 1995. Gradual institutional development of the national women's empowerment mechanism has been taking place since 1995, at which time a consultative body, the Council on Family and Women's Affairs and Demographic Policy under the President of Kazakhstan, was established. In 1997, the National Commissions on Family and Women's Affairs under the President of Kazakhstan was created. Since then, following recommendations from the National Commission and women's NGOs, the government has been integrating gender aspects into analyses and forecasts of socio-economic development.

To implement the Beijing Platform, the Government adopted the National Action Plan on Improving Status of Women for 1999-2005, which envisaged a number of measures on promoting women to the decision-making level and improving their socio-economic condition. However, due to objective reasons, not all of its goals were achieved.

The Concept of Gender Policy in Kazakhstan, adopted in 2003 for the achievement of MDGs, continues the ideology of the previous National Plans and is not provided with targeted financing. The Concept gives a very brief and general description of government mid-term policy till 2010. After this time, it will be possible to carry out the analysis of the Concept's feasibility and success.

Since late 2004, the National Commission has been developing the Gender Equality Strategy for 2005-2015. Strategy development is carried out through a constructive and effective coop-

[85] N. Sahanov. Political Processes and Civil Society in Kazakhstan. Analytical report. October 2004. International Training and Research Center. INTRAC. P. 6.

[86] R.B. Sarsembayeva. Gender Aspects of Systemic Socio-Economic Reforms in Kazakhstan: sociological analysis. Abstract of the doctoral dissertation. Almaty, 2005. P. 10.

[87] See http://www.status-quo.freenet.kz/news.htm#5

eration between the nongovernmental sector, and governmental and international organizations (UNIFEM, UNDP, OSCE). The draft on strategy covers the following areas of achieving gender equality: legislation, social policy, political and social life, economy, health protection, counteraction of violence against women and children, counteraction of trafficking, information policy, culture, education, and science.

The first attempt at introducing gender planning was made in the Perspective Plan of the Government for 2001-2005, in the special section, Participation of Women in Development. However, this target was vaguely formulated: «Special programs that take into account women's interests will be integrated in the national and regional investment programs».

Gender indicators were also included in the Strategic Plan of Development of Kazakhstan till 2010[88] and the Concept of Gender Policy (2003), developed for the achievement of MDGs. It is necessary to note that the persevering attempts of the donor community to help introduce gender analysis and assessment in the country's large-scale development projects are gradually starting to yield results, expanding the political field of ideology and gender equality policy. For example, the draft of the Gender Equality Strategy, currently under development, contains such elements as analysis and monitoring of implementation based on the indicators adopted in agreement with NGOs.

However, official acknowledgement of the importance of gender policy is often met with sub-conscious resistance on the part of people who implement national programs: civil servants and managers at different levels. It happens because the gender policy, imposed from «above», is still perceived as a politically unavoidable attribute of international policy, in which the country has to participate as a member of the UN and a «democratic, secular, jural and social state»[89], but which in reality has nothing to do with Kazakhstan.

In the past years, the Government has been resisting the introduction of two very important laws: On Equal Rights of Women and Men in Kazakhstan (in development since 2001) and On Counteracting and Preventing Domestic Violence (discussed since 1999, included in the Mazhilis plan for 2006, possibly to be discussed in 2005). Both draft laws have passed international expertise and were repeatedly discussed at the meetings between the government, international organizations, experts, and women's NGOs.

Commenting on the slow progress regarding the improvement of the status of women, the government refers to the «lack of understanding of the nature and importance of gender issues among the general public»[90].

To make the work of the National Commission on Family and Women's Affairs more effective and to increase the capacity of its members and Secretariat staff, gender experts suggest equipping the Commission with necessary financial (budget) and human resources. Furthermore, the Commission should be assigned the status of an executive body – the Committee or Agency on Women's Affairs[91].

Conclusions

Achievement of gender equality in Kazakhstan is one effective way of overcoming poverty, combating HIV/AIDS and TB, and reducing maternal and child mortality. It is therefore an important human development factor.

Throughout the whole transition period, the government of Kazakhstan demonstrated its commitment to the principles of gender equality. However, in practice, the introduction of gender-oriented approaches to development programs is mostly formal.

Women are neither sufficiently involved in political parties' activities nor adequately represented at a high level of decision making

Although during 1999-2003 there was a positive tendency in the growth of the Gender Development Index in all three dimensions – life expectancy, access to education, and the GDP per capita, gender inequality factors remain critical for both men and women. While for women these are mostly related to the economic sphere, access to resources, and insufficient political participation, for men they mostly concern health and hazardous activities.

Some of the regional disparities are gender-specific. The largest gap between men's and women's wages is observed in the oblasts with highest GRP per capita due to mining industry development. In high-income regions, there is a big difference between male and female unemployment, and women are at a disadvantage. As a result, those who benefit from fast economic growth are men and cities, and those who lose are women and auls.

Thus, important steps towards achieving MDG 3 in Kazakhstan are the following:

- ✓ Creation of a favorable social and political environment for promoting women to the decision-making level in governance, economics, and politics.
- ✓ Conducting state socio-economic policy in a manner conducive to ensuring equal employment opportunities and conditions for women and men.
- ✓ Further promotion of a gender-oriented approach to development programs, and introduction of gender analysis and assessment in large-scale development projects in the country.
- ✓ Active implementation of gender equality policy by the government of Kazakhstan; ensuring control over the enforcement of decisions and the monitoring of results in the area of gender relations by the National Commission on Family and Women's Affairs.

[88] The second periodical report of the Republic of Kazakhstan «On implementing the UN Convention on Eliminating All Forms of Discrimination Against Women». Draft. September 2004. P. 14.

[89] Constitution of the Republic of Kazakhstan, Article 1, P. 1.

[90] The second periodic report of the Republic of Kazakhstan «On implementation of the UN Convention on Elimination of All Forms of Discrimination against Women». Draft. September 2004. P. 10.

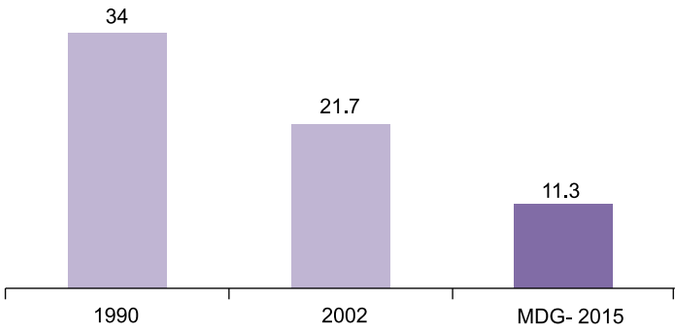
[91] Monitoring of the implementation of recommendations of the Women's Status Committee to the primary national report of the Republic of Kazakhstan. Alternative (second) report on CEDAW. Almaty, 2004. P. 16; Women's Participation in Decision Making in Kazakhstan. Report of the national experts: Y. Zaicev, T. Klimova, R. Sarsembayeva, upon the request of the OSCE Center in Almaty. December 2004. (unpublished). P. 14.

MDG 4 | Reduce Child Mortality

Target 5:

Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

Under-5 Mortality Rate (per 1,000 live births) in the Republic of Kazakhstan



***According to the WHO definition**, a newborn is considered to be viable regardless of the duration of pregnancy.*

***Perinatal losses** are accounted for starting from the 22nd week of gestation when the fetus has an initial mass of 500 g or more and a body length of 25 cm or more.*

***Live birth** is the complete expulsion or extraction from its mother of the product of conception regardless of the duration of pregnancy, After separation the fetus breathes or shows any other evidence of life such as a heartbeat, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.*

***Stillbirth** is the death of the product of conception before its full expulsion or extraction from its mother, regardless of the duration of the pregnancy. After such separation, death is defined by the absence of breath or any other evidence of life, such as a heartbeat, pulsation of the umbilical cord, or definite movement of voluntary muscles.*

Significance for Kazakhstan

One of the long-term national priorities defined in Kazakhstan-2030, «Improving maternal and child health», is closely linked with MDG 4.

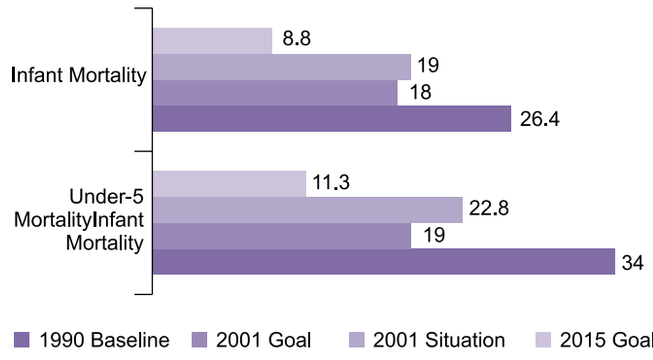
The first international human rights document that Kazakhstan signed was the Convention on the Rights of the Child, a basic agreement that reflects a wide range of political, economic, social, and cultural rights of children. One of the Convention's basic principles is a child's right to life, survival, and development.

The Law on the Child's Rights in the Republic of Kazakhstan, adopted in August 2002, regulates observance of the basic rights and interests of a child that are guaranteed by the Constitution. Among other things, the Law states that one of the fundamental rights of a child is the right to health protection.

MDG 4 progress in Kazakhstan

Assessment of the country's progress on MDG 4 should be based on the analysis of problems that influence the child mortality rate in Kazakhstan, the means of achieving the goal, and the definition of key areas that could help improve the results in healthcare to the benefit of children.

Graph 4.1. Dynamics of the MDG 4 (per 1,000 live births)



Source: Official data of the Ministry of Healthcare of the Republic of Kazakhstan

The graph 4.1 shows the change from the baseline levels (1990) of infant and child (under-five) mortality rates in comparison with the 2015 (MDGs) and 2001 (intermediate target). It follows from the graph that, although the both mortality rates have decreased, none of the indicators has reached the intermediate 2001 target, which was recommended by experts for ensuring sustainable progress, – 18 and 19 per 1,000 live births, respectively.

Table 4.1. Infant mortality in Kazakhstan (per 1,000 live births)

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
26.4	27.4	26.2	28.0	27.1	27.0	25.4	24.2	21.4	20.2	19.6	19.4	17.0	15.3

Source: Health of Kazakhstan's Population and the Work of Healthcare Organizations. Statistical compilation of the Ministry of Healthcare (1992-2004)

Official national statistics, which do not use the WHO-recommended definition of «live birth», indicate that after rising to 28.0‰ in 1993, the infant mortality rate continuously decreased and in 2001 was 19.4‰. In 2003, it was 15.3‰, ranging from 11.8‰ in Almaty oblast to 20.8‰ in Mangystau and 21.8‰ in Kyzylorda oblasts.

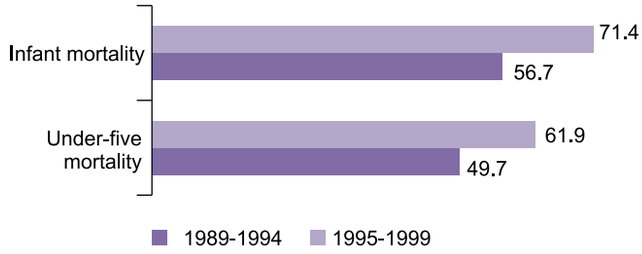
For comparison, the infant mortality rate in Germany is 4.3‰, in Estonia it is 5.7‰ (2002), in Latvia – 9.9‰ (2002), in Russia – 13.3‰ (2002), in Uzbekistan – 16.7‰, in Ukraine – 10.3‰ (2002), and in Kyrgyzstan – 21.2‰ (2002).

However, the Demographic and Health Surveys (DHS) conducted in Kazakhstan in 1995 and 1999 showed that in 10 years (1989-1994) the infant mortality rate increased by 24.5%, and the under-five mortality rate by 26%. Between 1989 and 1994, the average infant mortality rate was 49.7 per 1,000 live births, and the overall under-five mortality rate was 56.7‰. Between 1995 and 1999, infant mortality reached 61.9 per 1,000 live births, and under-five mortality rose to 71.4‰.

The DHS also revealed high levels of neonatal and post-neonatal mortality rates (Table 4.2), which in 10 years increased by 36.6% and 12.7%, respectively.

The data indicates that infant and child mortality rates in the country remain high. Unfortunately, DHS calculations are based on average figures for five years, and exact 1990 data (baseline) for Kazakhstan is not available. Therefore, for monitoring the change in child mortality from 1990 to 2015 and for assessing MDG 4 achievement in Kazakhstan, the baseline for under-five mortality can be considered as 56.7 and for infant mortality – 49.7 per 1,000 live births.

Graph 4.2. Under-five and infant mortality dynamics, 1989-1999 (per 1,000 live births)



Source: Demographic and Health Surveys (DHS), 1995, 1999

As in the infant mortality situation, there is a discrepancy between official and DHS data on under-five mortality (Table 4.3).

The reason for the discrepancy between the official and the DHS data is the difference in calculation methods and definitions of «viability», «live birth», and «stillbirth».

Medical statistics in Kazakhstan still use the live birth criteria according to which the fetus is considered viable if born at 28 weeks of gestation or more, with a birth weight of 1,000 g or

Table 4.2. Infant and child mortality rates according to DHS (per 1,000 live births)

Period	Neonatal	Post-neonatal	Infant	Child	Under-five
1995-1999	33.6	28.3	61.9	10.1	71.4
1989-1994	24.6	25.1	49.7	7.3	56.7
1984-1989	29.3	25.7	54.9	11.8	66.1

Source: DHS, 1995, 1999

Table 4.3. Under-5 mortality rate (per 1,000 live births)

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
34.0	35	33.4	36	35.3	36.5	33.2	32.6	28.9	26.8	25.4	22.8*	21.7*

Source: MONEE database, International research center in Florence, 2002;

** Ministry of Healthcare of the RK.*

Table 4.4. Almaty city, 2003 (per 100 live births and stillbirths)

	According to official criteria	According to WHO criteria
Perinatal mortality	13.4	27.9
Stillbirth	6.4	12.0
Early neonatal mortality	7	15.8
Infant mortality	14.5	37.7

more and a body length of 35 cm or more, and a newborn is considered live if breathing. Absence of breath and failure to recover it in 15 minutes qualify the fetus as a stillbirth.

The absence of protocols based on WHO criteria leads to the following groups of newborns being inadequately accounted for in the official statistics:

- Newborns with birth weights between 500 g and 999 g, born before 28 weeks of pregnancy, if they do not survive the first seven days after birth;
- Newborns with birth weights of 1,000 g or more, born after 28 or more weeks of pregnancy, if they do not manifest breathing.

Newborns of the first group are considered late miscarriages and are not included in the official statistics, while the newborns of the second group are registered as stillbirths if reanimation proves unsuccessful. This group is included in perinatal mortality but not in the number of deaths within a year from birth, i.e. in the infant mortality and under-five mortality rate.

Thus, the official data on infant and child mortality used by the Ministry of Healthcare of Kazakhstan do not correspond to reality. Indicators for the city of Almaty and Almaty oblast prove this. Since 2002, according to the MOH decree, these are the pilot regions for the implementation of WHO definitions of «live birth» and «stillbirth».

Based on the WHO definition, the perinatal mortality rate in the city of Almaty in 2003 was 2.1 times or 108% higher than the official rate; the stillbirth rate was 1.9 times or 87.5% higher than the official rate; early neonatal mortality was 2.3 times or 125.7% higher, and infant mortality was 2.6 times or 160% higher than the official rate. Similar differences in indicators were registered in Almaty oblast, too.

It is logical to assume then, that after the change to the WHO-recommended definition of «live birth» the official data on infant and child mortality would increase more than twofold. However, adoption of the WHO-recommended criteria is still needed, because the absence of the registration of all actual perinatal losses prevents existing problems that require attention from being quickly identified and assessed, and appropriate intervention packages for the solution of these problems from being found.

Causes of infant and child mortality

Infant and child mortality rates are a reliable indicator of the state of children's health. But even with complete registration and accurate use, mortality indicators are not sufficient for making comparisons and assessing the effectiveness of medical services. An analysis of child mortality that takes into account birth weight and causes of death can provide more accurate information.

The UNICEF-supported Analysis of Causes of Infant and Child Mortality was carried out in Kazakhstan in 2000. This was meant not only to find out the causes of death (why?), but also during which period (when?), in which regions (where?) and in what types of healthcare institutions children die most often.

The analysis is based on the expert assessment of 3,168 cases of death of children aged from 0 to 5 years during the period from January 1 to December 31, 2000. The analysis constituted 57.3% of the total number of deaths in this age group in the country – 5,524. All five regions were covered by the study: Southern, Western, Eastern, Northern, and Central. Data was collected in five types of healthcare institutions: obstetric hospitals, somatic pediatric hospitals, pediatric hospitals for infectious diseases, central rayon hospitals, and polyclinics.

Data analysis was conducted for the following age groups: early neonatal (168 hours after birth), late neonatal (0-28 days), post-neonatal (28 days-12 months) and child (1-5 years).

When?

Analysis shows that in most cases children died in the early neonatal period (62.1%), in fewer cases in the post-neonatal period (20.5%), and yet more rarely in the late neonatal period (8.1%) and in childhood (9.3%). (Please see Annex, Graph 4.A).

Where?

The distribution of death cases by region showed that losses were biggest in the Southern region (34.6%), a little less in the Western (21.6%) and Northern regions (20.6%), and lowest in the Central (14.1%) and Eastern (9.1%) regions. (Please see Annex, Graph 4.B).

By place of death, the biggest losses in the first 168 hours after birth occurred in maternity homes (51.7%), perinatal centers (19.9%) and maternity wards of central rayon hospitals (11.5%). An insignificant proportion of deaths occurred in the pediatric hospitals and their neonatal pathology departments – 3.9% and 1.2% of all the newborns placed in these facilities, respectively. 11.2% of deaths occurred in other health facilities, and 0.3% of children not born in a maternity hospital died at home. The majority of deaths in the late neonatal and post-neonatal periods occurred in children's hospitals – 86.4%, and 13.6% occurred at home. In the age group of 1-5 years, 44.5% of deaths occurred at home, and the rest – 55.5% – in children's hospitals.

Why?

The **health status of mothers** of children who died determines the early deaths of children, as most diseases of pregnant women that increase the risk of maternal mortality also negatively influence the fetus and the newborn. These diseases include anemia – found in 74.7% of mothers, other haematological diseases – 11.0%, endocrine disorders – 5.3%, urino-

genital infections – 41.8% and respiratory disorders – 28.2%. Malnutrition was registered with 8% of mothers, while for the remaining 92% nutrition information was not available.

It is necessary to note that only 35.5% of mothers whose children died received antenatal care upon their registration, after 12 weeks of pregnancy; 8.8% of women registered only before delivery; 17.6% received no antenatal care at all, and in 38.1% of cases information was not availabl[92]. Such a situation leads to the late medical examination of pregnant women and postpones the urgent medical intervention needed to prevent perinatal complications.

The above data on the health status of mothers of infants who died indicate their low health index and decrease in the compensatory capacity. It is not surprising then, that in 48% of cases these women's pregnancies were complicated with gestosis (toxicosis), in 31.8% – repeated threat of miscarriage, 13.1% – hydramnios, 6.8% – oligohydramnios, and in 11% of cases – with premature separation of placenta (placenta abruptio). As a result, more than half of the births (56.4%) were pre-term, and 2.1% were post-term births. Premature amniotic fluid discharge was registered in 30% of deliveries, in 9.7% of which the anhydrous period lasted for more than 12 hours. 19.7% of women delivered through a Caesarean section.

Of the **prematurely born infants** who died, the proportion of babies with very low birth weights (below 1,500 g), whose survival required the use of expensive medicines and equipment, was only 10.4%. The remaining 46% of prematurely born infants weighed over 2,200 g, and 43.6% had a normal birth weight. It follows then, that the majority of infants who died in the early neonatal period (89%) were newborns who did not require expensive perinatal technologies to survive.

The main causes of death in the early neonatal period (up to 168 hours after birth) were respiratory disorders (14.6%), birth trauma (14.4%), pneumonia (13.7%), infections specific to the perinatal period (7.0%), congenital development defects (6.8%), hemorrhagic and hematological disorders (6.2%), asphyxia in labor (5.9%), hemolytic disease of the newborn (3,5%), other perinatal conditions (13.3%), and other diseases of the newborn (14.8%). In half of the cases, the diseases and deaths of the newborns in this age period could have been prevented through provision of quality perinatal care.

In the late neonatal (0-28 days) and **post-neonatal periods** (28 days – 12 months), the majority of deaths were related to infections. Possibly, hyper diagnostics of the infections' congenital genesis takes place in the neonatal period, while in the post-neonatal period in 33.7% of cases these are respiratory disorders, and in 27.2% – infectious-parasitic diseases (mostly intestinal infections). This gives a certain cause for concern, as the spread of most infections can be prevented by prophylaxis and early treatment.

The leading **causes of death of children between 1 and 5 years** of age are also respiratory diseases (28.6%) and infections (19.4%), especially intestinal infections (8%), sepsis (5.8%) and meningitis (5.7%). It is ascertained that the development of infections is linked to malnutrition, anemia, and the early termination or complete absence of breast-feeding, all of which lead to deficiencies in the immune system.

Deaths from accidents make up a significant proportion of child mortality (16%), including traffic **accidents**, thermal and chemical burns, and falls. Boys are primarily the victims of accidents (62.2%). In rural areas, the mortality rate is higher for this age group.

Main factors affecting progress of MDG 4 in Kazakhstan

Public expenditure for maternal and child healthcare

According to UNICEF studies conducted in four oblasts of Kazakhstan, public spending on maternal and child health protection (MCH) is no less than $10 per capita (Annex, Table 4.B), or about 13% of actual oblasts' spending on healthcare[93]. However, in all surveyed oblasts the actual expenditure was significantly lower, which affected the population's access to the basic service package. Moreover, the distribution of resources is also a serious problem. According to one UNICEF study, the bulk of allocated resources is spent on covering hospital care in MCH and not on primary healthcare (PHC), which also negatively affects the accessibility of quality care, timely prophylactic services, and/or medical intervention.

Based on the actual local budgets' expenditure, the study analyzed the correlation between the rates of per capita financing, invested resources (the number of rural healthcare facilities and beds per 10,000 people), and the results of provided care (maternal and child mortality).

The absence of either a negative or positive correlation between the per capita financing and child and maternal mortality rates means that the distribution of resources is not based on the population's actual need. Resource distribution is not targeted while traditionally, responsive systems should allocate larger per capita financing to the regions that are in special need of healthcare, especially maternal and child healthcare (Annex, Table 4.B).

Similarly, there is practically no correlation between the number of healthcare facilities and child mortality rates, while there is a negative correlation between the number of hospital beds and the rate of child mortality. The results of the study confirm the earlier conclusion that actual spending on primary medical care is limited, which negatively affects its accessibility.

Only in two evaluation criteria were positive correlations found. **The healthcare infrastructure in rural areas also has its impact on child mortality.** The more feldsher posts and obstetric wards in the hospitals there are, the lower the child mortality rate is. (Annex, Graph 4.D). This only confirms the fact that better access to healthcare services positively influences the population's health indicators.

The correlation between the per capita financing and incidence of anemia – the more funds are allocated for anti-anemia medicines, the lower the incidence of anemia in the region. (Annex, Graph 4.C). The state program on counteracting anemia has been functioning since 2000, and the Ministry of Healthcare allocates significant resources to the regions for purchasing the needed medicines.

[92] Causes of Infant and Child Mortality in Kazakhstan, UNICEF, 2003.

[93] James Cerkone, Improvement of Quality of Maternal and Child Healthcare in Kazakhstan: Plans for Future, 2002.

Thus, the above data shows that maternal and child mortality can be reduced through an increase in per capita financing rates in the regions. It is preferable to equalize the per capita rates across regions based on the basic services package, with additional annual budget allocations (in the regions with worst indicators), redistribution of funds between hospital and outpatient care (in favor of the latter), and expansion of primary healthcare infrastructure, which will improve the access to the necessary quality medical aid.

Accessibility and quality of medical services

A study on accessibility and quality of medical services[94] was conducted in 2003 in Kyzylorda, Karaganda, East-Kazakhstan, South-Kazakhstan oblasts, and Astana city. The accessibility of medical services was evaluated taking into account geographic, financial, and organizational factors.

The geographic accessibility of primary medical care was found to be satisfactory. Of the surveyed households, 93.4% are located less than five km from the nearest healthcare facility. PHC facilities are also easily accessible in terms of time: for 87.5% of respondents, the trip would take no more than 30 minutes. However, there are significant disparities between rural and urban areas and between different regions. The rural population experiences the most difficulties in reaching healthcare facilities. In 11.7% of cases people from rural areas spend more than an hour on the road, while in the common group this proportion is only 3.4%.

An analysis of transportation means shows that 72% of respondents in rural areas have to walk to the primary healthcare facility, compared to 42% in the cities. The analysis also revealed that respondents with middle or low income tend to walk to the healthcare facilities and do not use public transportation and/or taxis.

Overall, **the geographic accessibility of hospital care** is satisfactory, too. In half of the cases, the hospital was located less than five km from the house, and 61.2% of respondents took less than 30 minutes to reach the hospital, while 18.1% of patients needed more than an hour.

Geographically, the urban population has better access to hospital care than the rural population does. Indicators are especially bad in Kyzylorda oblast, where 26.4% of patients spent more than an hour on the road.

The insufficient provision of public transportation is a serious obstacle to receiving necessary medical care, especially for the poor population. The poor functioning of the public transport system (10.5% of patients used public transportation), especially in rural areas, also decreases access to primary medical care. Every fifth patient was brought to the hospital by an ambulance team, but in rural areas such cases were 2.5 times fewer than in the cities.

Financial accessibility of medical care as defined by direct out-of-pocket payments for medical services.

The study showed that while geographic accessibility is not a problem, financial accessibility is indeed a barrier to receiving medical services. For the population of the surveyed oblasts, the cost of treatment is a serious obstacle in asking for medical care. Only about a third of the 1,925 respondents said that paying for medical services was not a problem, while 20.9% said it had always been a problem, and for 45.6% said it was somewhat of an obstacle.

Assessing the urban population's financial difficulty in applying for medical care is significantly different from assessing this difficulty for the rural population.. Respondents in urban areas reported partial difficulties in paying for services in 59.1% of cases, while among the rural population this proportion was 76.7%. Finally, the study has confirmed the correlation between financial accessibility and household income: the lower the income per household member, the harder it is for people to pay for the services directly (Annex, Table 4.C).

According to the study, in most cases the population in Kazakhstan has to pay for medical services directly out-of-pocket: for primary care the proportion is 82.2%, and for hospitals it is 96.9%.

Analysis of the relation between direct payments for primary care and income level showed that on the average, direct payment for one case (of illness) constitutes 4.5% of income per household member in the given period. There was no difference between amounts of payment for urban areas than there was for rural areas (1,573 and 1,549 tenge, respectively). People with lower income have generally paid less. The amount of payment is also influenced by the patient's condition – from 2,442 tenge (grave) to 331 tenge (light).

The average size of direct payment in hospitals was 8,827 tenge (9,803 tenge in urban areas and 7,625 tenge in rural areas). In absolute numbers, these figures were practically identical in the city of Astana, South-Kazakhstan, and Karaganda oblasts. Lower figures were registered in East-Kazakhstan oblast (about 8% less), and significantly lower – in Kyzylorda oblast (more that 30% less).

As in the case with primary care, analysis of the relation between the payment for hospital care and reported household income revealed significant disparities. Patients in the poorest region (South-Kazakhstan oblast) pay 46.5% of their income, an amount which is more than 3 times higher than what is paid in the richest of the surveyed regions (Astana city, 16%). On the average, people spend a significant part of their income on payment for hospital services – 25.1% of income per household member is paid in six months (Annex, table 4.D).

There is a direct correlation between the amount of payment and household income: on the average, households that reported monthly income of less than 6,000 tenge paid 7,165 tenge per one course of treatment in the hospital, households with income of 6,001-10,000 tenge paid 9,459 tenge, and those with monthly income of over 10,000 tenge paid 14,241 tenge.

Analysis of hospital patients' own spending showed that over 60% was spent on medicines and more than 20% on «other» items. The urban population paid more than the rural for every constituent part. The difference was insignificant in payments for consultations (10.1% more) and medicines (14.9%) and quite large in payments for laboratory or instrumental examinations (68.1%) and «other» expenses (more than twice as much, or 108.7%).

On the average, the respondents paid 4,389 tenge for medicines during the whole period of hospitalization (4,670 tenge

[94] Report on Accessibility and Quality of Medical Services. UNICEF, 2004

in the cities and 4,063 tenge in rural areas). The cost of a one-day stay in the hospital was the second highest expense and amounted to 3,606 tenge (although the proportion of those who paid was much smaller). The latter fact might be due to the fact that the cost of a one-day stay also included such expenditures as payment for tests and staff services.

Based on the earlier data on the direct payments for both primary and hospital care, direct household spending was calculated as follows: 626 tenge in six months (1,252 tenge a year) for primary care, and 1,995 tenge in six months (3,990 tenge a year) for hospital treatments. In total, the estimated amount of direct payments for medical care was 5,242 tenge a year per household (about $35, according to the average official exchange rate in 2003). The share of primary care in this amount was 23.9%, and hospital treatment – 76.1%.

Given the reported level of household income, which averages 70,318 tenge a year per household member, it follows that each household pays on average about 7.5% of its income for medical care. As noted before, more vulnerable groups, such as rural residents, low income families, and families with many children, are forced to spend a larger proportion of their incomes on healthcare services.

Per capita calculation showed that direct out-of-pocket payment for medical services was 1,320 tenge per person per year. This is about 25-30% of the total amount of healthcare financing from local budgets in the surveyed oblasts. Although for various reasons (choice of territory, size of sample, methodology) this household study cannot be fully representative of the whole country, its results do raise concern because of the amount of payments and their distribution by region and social group of the population.

Medicines are the most frequent and most expensive item among the direct payments for all kinds of care. Over 90% of hospital patients paid for their medicines themselves, and these expenditures made up over 60% of the total cost of hospital treatment. These findings point to insufficient guaranteed financing of hospital services, an issue which requires revision. One of the possible solutions to this problem is allocation by the Ministry of Healthcare of a large amount of resources on the regional level for the purchase of medicines in 2005.

One important conclusion is that the main factor defining the amount of direct payment is the patient's condition (the graver it is, the higher the payment). This leads to a very small difference in absolute numbers between regions (except Kyzylorda oblast), urban and rural areas, households with different income levels, and other characteristics. As a result, the poorest households have to spend a larger proportion of their income on medical care. Therefore, solidarity of financing, one of the main goals of the healthcare system, has not been achieved, as the poorest population in fact subsidizes those who are better off instead of vice versa.

Families with many children are of special concern, as their financially constrained situations may lead to a delayed application (or even a refusal to apply) for medical aid. This, in turn, results in the development of chronic diseases among the children. The survey showed that among rural households with three or more children, family savings were the main source of payment for primary care in 60.9% of cases, compared to 29.4% of cases in the general group of respondents.

Financial accessibility proves to be a serious obstacle in receiving quality medical care. The amount of the population's direct payments is significant, and the cost of hospital care is a serious problem, if compared to income levels. The average cost of a one-time stay in the hospital equals 150% of the reported monthly income per household member, and in the poorest of the surveyed oblasts (South Kazakhstan) this proportion reaches 279%.

Assessment of the **quality of healthcare services** revealed serious problems.

The duration of the first consultation and organizational accessibility are important aspects of the quality of primary aid. It is universally accepted that 30 minutes is the minimum amount of time needed for the patient's first consultation. This time covers the collection of information, objective assessment, examination, and determination of future tactics. The recommended duration of the first consultation was observed only in 12% of cases, and in more than a third of cases it lasted less than 15 minutes. A patient's paying capacity is one of the factors that determines the duration of the first contact with the doctor. Among the patients from households with monthly income below 4,000 tenge per person, only in 9.2% of cases were the first consultations in PHC facilities more than 30 minutes in duration. With an income level above 10,000 per person, the proportion was already 15.7%, which also correlated with other aspects of financial accessibility.

As is the case with primary healthcare, the duration of the first consultation in the hospital is a very important indicator. Similar to the responses received on primary aid, respondents have noted that examinations in the reception ward were short. Only in 13.8% of cases did the examination last more than 30 minutes, while in 45.1% of cases, according to the patients, the first consultation in the hospital was less than 15 minutes in duration. According to the survey, rural patients were in a worse situation than urban ones.

Among other findings that indicate problems regarding quality, it is important to note that more than a quarter of patients who needed hospitalization had to wait for more than a week, and of those, 75% had to wait for more than a month. Many patients had to wait a rather long time for the arrival of the ambulance car, and almost 60% of these said they did not receive any medicine from the ambulance staff. The latter fact shows that ambulances are often used merely as a means of transportation, and not as a facility providing professional medical aid.

Thus, the assessment of objective factors revealed serious problems concerning the quality of the medical services provided to the population.

The study quoted here also evaluated several aspects of the quality of aid provided to women and children. The aspects reviewed included reproductive health, pregnancy and its complications, birth and the early postnatal period, and children's health at an early stage. Based on the responses received, an evaluation of the population's knowledge of various services' features and their use was made.

The most accessible services in reproductive health were postnatal care (80.5%) and obstetric services (76.9%). Notably, only 63.5% of respondents found antenatal care accessible, with urban respondents finding it even less so than rural respondents (62.1% and 65.3%, respectively)[95]. The urban population has

better access to other types of services. For example, 72.2% of women in the cities have access to abortion services versus 45.6% in rural areas, to diagnosis and treatment of gynaecological disorders – 79% and 62.1%, respectively, and family planning consultations – 61.6% and 48.4%, respectively. The least accessible services were those providing treatment for sexually transmitted infections (STI) – 48.1% (59.1% in the cities and 33.6% in rural areas) and sterility treatment – 41.3% (52.2% in urban and 26.9% in rural areas).

There was also an attempt to evaluate the population's awareness of sexually transmitted diseases. Most respondents, both men and women, named AIDS (98.5%) and syphilis (95.6%); 80.7% of respondents mentioned gonorrhea. However, the awareness of other STIs is considerably lower (Please see Annex, Table 4.E). It is also obvious from the table that awareness among rural residents is lower than it is among urban residents.

Population's knowledge of HIV infection and its transmission is a cause for concern. Only 27.8% of respondents could explain the difference between HIV and AIDS (35.5% in the cities and only 17.3% in rural areas). 12.3% of respondents thought AIDS could be transmitted through a handshake, and 81% knew that a pregnant HIV-positive woman could infect her child (85% in urban and 75.6% in rural areas). Therefore, there is a problem of lack of consultations and a low level of primary health education and awareness.

The study revealed a low awareness of contraception methods and, consequently, low levels of contraceptive use. Among the sexually active respondents, only 56.5% use some kind of contraception. Of this group, the proportion that uses modern contraception methods is rather small: only 13.2% of respondents who used contraception named oral contraceptives as a method they use.

According to the same survey, access to antenatal care is 88.2%. Less than half of women (44.3%) visited a doctor from one to five times during pregnancy (according to current standards, there should be six compulsory visits to healthcare facilities before delivery), 35.9% of women visited from five to 10 times, and 19.8% more than 10 times. The data didn't differ much by place of residence. A comparative assessment of regions showed that in Karaganda oblast, pregnant women received antenatal care much more often than in other oblasts. The majority of women passed the necessary examination. It is remarkable that few women (only 48% of respondents) received recommendations on nutrition during pregnancy.

Although the frequency of pregnancy complications was rather high, the study revealed that the attention paid to them and the medical interventions carried out were insufficient. Only 58.4% of respondents said they had had a consultation about possible complications (49.3% in rural and 67.4% in urban areas).

Responses to a number of questions allow an indirect assessment to be made on the observance by health personnel of the protocols on treatment for pregnancy complications. Judging by the data obtained, in most cases the protocols are not observed. The reason for this is related to both poor financing of the basic services and the necessity to further institutionalize the protocols on the basis of evidence-based medicinal methods. Moreover, it is necessary to enhance the professional skills of medical personnel and the level of interaction between doctors and patients. For example, nutrition recommendations were provided to less than half of women who suffered from retching (nausea) and anemia. The observation of pregnant women with late gestosis (toxicosis) was even less adequate: less than half of respondents said their arterial pressure was measured, and less than 20% were assigned hypotensive medication. Also insufficient, was the examination of women with acute abdominal pain, which is the gravest sign of a pregnancy complication. Even considering a correction on hyperdiagnostics and respondents' low awareness, this data is alarming and should lead to the strengthening of measures on improving the quality of antenatal care.

The overwhelming majority of deliveries (96.2%) took place in maternity homes and were attended by skilled health personnel. The survey revealed a considerably high degree of patient satisfaction with the delivery services they received. However, preventive measures are the soft spot in the work of maternity home personnel: in less than half of the cases in which the patients leaving maternity homes needed doctor's recommendations were such recommendations provided.

In the surveyed group, 94.4% of children had birth weights of more than 2,500 g, and the proportion was similar in urban and rural areas. According to women's responses, almost all children (96.4%) were breast-fed; in rural areas the proportion was 99.2%, while in the cities – 93.5%. At the same time, exclusive breast-feeding (without additional water and food) in the first six months after birth was provided only in 40-45% of cases.

Although almost all children below two years of age were regularly measured (height and weight), only 37.4% of parents could explain the data on growth and development in their child's medical history. Most children in the households received vaccinations, but parents had limited knowledge of the vaccination period. When asked to show their child's medical card only 17.4% of parents were able to find it.

It is very alarming that most parents have very little knowledge about the symptoms threatening the health and lives of children at an early age. Only 35.2% of respondents applied for medical aid when a child was not able to drink or suck breast; 49.4% applied because of tachypnea, and 63.8% because of blood in the stool. It is worth noting that the level of awareness of precarious conditions of children at an early age was considerably lower among the urban population, although on other issues this group demonstrated better knowledge than the rural population.

Parents'low awareness of dangerous symptoms is also an indicator of insufficient educational and preventive work carried out by health personnel.

Accessibility and quality of health services are limited by the absence of a defined needs-based mandatory medical services package, insufficient knowledge of clinical protocols, and the lack of their use by PHC personnel.

[95] Report on Accessibility and Quality of Medical Services. UNICEF, 2004

National policy

The first phase of the implementation of the plan of action to fulfill the basic short-term tasks of the State Program «Health of the Nation», adopted in 1998, is now complete. The complex epidemiological situation has been overcome, and the set of guaranteed healthcare services has been expanded, thus the constitutional right of the citizens to health care is now provided.

The Concept for improving the financing of the healthcare system in Kazakhstan has been adopted. Its implementation will allow for the creation of an optimal organizational structure and a model of financing the healthcare system that guarantees availability and quality of medical services.

In addition to the «Health of the Nation» State Program, there is the «Maternal and Child Health Protection in Kazakhstan for 2001-2005» program. Its main goals are to create the necessary conditions for the protection and improvement of the lives and health of mothers and children as well as to prevent and decrease their morbidity.

The Law on Social, Medical, and Correctional Support to Children with Limited Abilities was adopted in 2002 to create an effective system of assistance to children with developmental deficiencies and to prevent child disability (disablement).

The Strategy of Perinatal Care Improvement was adopted. This includes the WHO programs on Safe Maternity/Assistance in Increasing the Effectiveness of Perinatal Services, which envisage the mandatory introduction of the WHO definitions of «live birth» and «stillbirth».

Based on the Strategy of Perinatal Care Improvement in the Republic of Kazakhstan, ***the Plan of Perinatal Care Improvement*** in the Republic of Kazakhstan was development and approved by the decree of the Ministry of Healthcare #871 of 26 November 2003.

The Plan's main strategies are aimed at the following:

1. Improvement of the health of women of the reproductive age;
2. Improvement of the perinatal care provided to mothers and children;
3. Enhancement of the organization and management of the perinatal services through regionalization of perinatal care;
4. Enhancement of the professional skills of health personnel for provision of perinatal services;
5. Monitoring and assessment of measures on improving perinatal services.

1. Improvement of the health of women of reproductive age is the most complex and long-term task, as its achievement is defined by the socio-economic conditions of the families and the country overall, and by the quality and accessibility of health services.

This task is examined in more detail in the next chapter; however, it needs to be noted that the correction of micronutrient deficiencies, as described in Part 2 of Chapter 1, is one of the most effective ways to improve public health, including the health of both women of reproductive age and their children.

2. Improvement of the quality of perinatal care requires the introduction in obstetric practices of safe maternity and neonatal care technologies recommended by WHO and developed on the basis of controlled randomized research.

Since most cases of death in the early neonatal period occurred among newborns with regular birth weights[96], such losses can be prevented through the introduction of low-cost practices of perinatal care of the evidence-based medical research that are recommended by WHO in its programs of Safe Maternity/Assistance in Increasing the Effectiveness of Perinatal Services. This will first of all ensure the survival of newborns with normal birth weights. According to DHS, the newborns with very low and extremely low birth weights constitute no more than 12-15% of all births. With ensured survival of the newborns with normal birth weight, the losses among the newborns with very low and extremely low birth weight in the perinatal period will have little influence on the infant mortality rate and, therefore, on the under-five mortality rate.

These technologies are currently being introduced in pilot obstetric facilities. The preliminary results of their introduction in the Almaty Perinatal Center show a decrease in the loss of newborns to birth trauma, asphyxia, and other respiratory disorders. These decreases helped to reduce the early neonatal mortality rate by 1.7‰. The incidence of bacterial infections among newborns decreased by half, from 17.6‰ to 8.5‰. Prenatal preparation of pregnant women lead to a reduction of pregnancy complications (gestosis decreased 1.3 times, and miscarriage threats – 1.4 times) as well as delivery complications (pre-term births decreased twofold and surgical deliveries decreased 1.8 times).

3. Regionalization of perinatal care and the improvement of perinatal services management will promote a more rational distribution of financing allocated for obstetric services. The bulk of these resources should be allocated to the third-tier facilities, such as perinatal centers where pregnant women of high-risk groups and pre-term deliveries with 22-32 weeks of gestation are taken. Newborns with severe perinatal pathologies and low (1,000-1,500 g) and extremely low (500-999 g) birth weights, who need expensive medication and equipment, are also taken to the perinatal centers.

Women with physiological courses of pregnancy at minimal risk, and those with pre-term deliveries at more than 32 weeks of gestation are taken to the first-and second-tier hospitals. Babies born in these facilities are usually healthy and have normal birth weights, so providing them with timely and quality perinatal care does not require high-cost technologies.

4. Improvement of the perinatal care skills of the health personnel working in obstetric facilities will undoubtedly help improve the quality of and access to perinatal services, and reduce maternal, perinatal, and neonatal morbidity and mortality.

5. Monitoring and evaluation of measures to improve perinatal care will allow for the collection, systematization,

[96] Causes of Infant and Child Mortality in Kazakhstan. UNICEF, 2003

assessment and analysis of data so as to select the most appropriate kinds of interventions. The latter is accomplished through the introduction of the BABIES matrix in the registration and reporting documentation of the healthcare system. The BABIES matrix provides for mandatory registration of all perinatal births and losses because the indicators calculation takes into account the birth weight of the newborns and infants who died.

Effective monitoring of obstetric and child care services and their main indicators is not possible without the registration of all perinatal losses (starting from the 22nd week of gestation, with a birth weight of 500 g or more). The absence of such monitoring restricts timely identification of the existing problems and interventions for their solution. This stipulates the necessity and advisability of adopting the WHO definition of «live birth» and accounting for perinatal losses. Only under the condition that these steps are taken does Kazakhstan have a chance to achieve MDG 4 – to reduce, by 2015, the under-five mortality rate by two-thirds of the baseline level (1990).

It is also necessary to keep other problems in mind (socio-economic, environmental, etc), because the solution to these problems influences obstetric and child care indicators.

Thus, there is an obvious need for a scaled-up implementation of the above-mentioned tasks of the Plan on Improving the Perinatal Care in the Republic of Kazakhstan through the introduction of perinatal care technologies in obstetric practice, which will contribute to the reduction of infant and child mortality.

The State Program on Healthcare Reform and Development in Kazakhstan for 2005-2010, approved in late 2004, and the 2005-2007 Plan of Action for its implementation outline the need for innovations in the primary healthcare system and are an important step in achieving a higher health index.

Sufficient access to and quality of primary health care (PHC) are also key factors for reducing infant and child mortality risks. The State Program on Healthcare Reform envisages the creation of a new PHC model that will be based on the principles of general medicinal practice and will consist mainly of PHC centers on a social procurement contract with a healthcare management agency. This model will work on the basis of trust (free choice of doctor) with the use of economic management and motivation methods, such as introduction of a bi-component per capita standard with partial stockholding, management system development and enhancement of healthcare quality through the use of an evidence-based medicine concept. A partial stockholding system creates incentives for reducing the amount of hospital and specialized services. Universal implementation of the per capita financing concept, together with a stockholding component at the second stage of program implementation, will contribute to the financial, technological, and professional sustainability of the system. By 2010, the resources allocated for PHC will amount to less than 40% of the total financing of guaranteed healthcare services.

Immunization

The Government of Kazakhstan is implementing a policy aimed at the maximum reduction of diseases that can be prevented by vaccination. In 2000, the country received a certificate confirming the absence of poliomyelitis. As a result of these efforts, since 1995, not a single case of polio was registered in Kazakhstan; the incidence of diphtheria decreased 4.4 times, the incidence of parotitis (mumps) – by 45%, and that of whooping cough – by 15%. In 1999, Kazakhstan became the first CIS country that introduced the Hepatitis B vaccination for newborns.

In 2003, immunization coverage was 100% (MOH, 2004). The government's next strategic goal is to eliminate measles and introduce the MMR vaccination (measles, mumps and rubella) into the general immunization schedule.

In late 2004, the Ministry of Healthcare encountered problems with people's trust in the immunization program due to post-vaccination reactions and complications that followed BCG vaccination. The lack of dialogue between healthcare services, the mass media, and the population as a whole has created a negative attitude to vaccination in general. Thanks to the joint efforts of UNICEF, WHO, and the Ministry of Healthcare in preparing and carrying out a massive measles and rubella immunization campaign among people aged 15-25, the trust of the media and the general population in the immunization program was restored. As a result, coverage of the measles and rubella immunization program reached 99.3%.

Lately, there have also been some problems with biddings and the supply of vaccines in the country. In late 2004 and early 2005, there were interruptions in the supply of BCG and MMR vaccines. Consequently, a significant number of children in Kazakhstan did not receive timely (according to the immunization schedule) vaccinations for such dangerous infections as diphteria, whooping cough, tetanus, and tuberculosis. At present, the Ministry of Healthcare and UNICEF are conducting negotiations on the purchase of vaccines through UNICEF.

Enhanced coordination for improvement of the health of the population

Achieving results in the healthcare sector depends on effective government intervention that can be ensured through better coordination, consultations, and links between the ministries and departments. Any healthcare reform should be regarded as a program the implementation of which involves several ministries and departments, and not the Ministry of Healthcare alone.

In accordance with the State Program on Healthcare Reform for 2005-2010, regional programs were developed and approved by Maslikhats, and Coordination Councils were created in all oblasts, which is a precondition for the actual financing of the action plans, monitoring, and control over implementation of this important policy document. Successful program implementation requires the focused and concerted efforts of the healthcare system, along with the support of other branches and technical assistance of international organizations.

Strengthened role of MoH in defining national healthcare policy. This includes the passing of the necessary legislative degrees, particularly regarding the change to WHO live birth and perinatal losses criteria. The absence of such criteria at present reduces the opportunity to understand rationally and in a timely manner the problems related to causes of infant and child mortality and, therefore, makes it harder to manage the situation and take appropriate measures to improve it.

Development of a sustainable healthcare financing structure

Kazakhstan's economic growth stimulated the development of social programs. In the past three years, public health financing increased twofold. A further increase in financing, up to 4% by 2008, is planned to ensure the sustainable development of the healthcare system. Taking into account the GDP growth, the amount of budget spending on public health in absolute numbers will increase more than three times by 2010 (446.2 bln tenge).

Table 4.5. Public Expenditure on healthcare (% of GDP)

№	Страна	2001	2002
1	Azerbaijan	2.6	2.4
2	Belorus	6.6	6.2
3	Bulgaria	3.0	3.1
4	Spain	5.4*	-
5	Kyrgyzstan	3.0	3.2
6	Lithuania	4.1	4.6
7	Norway	6.9*	-
8	Russia	3.4	4.1
9	Uzbekistan	2.6	2.4
10	Ukraine	3.4	3.4
11	Czech Republic	6.7	6.4

Source: Social monitoring 2004. UNICEF MONEE.

** 2004 Human Development Report. UNDP. New York, 2004.*

A system of financing that is based on the principle of efficiency and equitable distribution of funds and resources lies at the heart of any healthcare reform program. It is necessary to review the per capita financing in primary, maternal, and child healthcare, as the currently allocated resources are significantly below the level needed for provision of a basic PHC service package.

Having inadequate resources to satisfy public needs in healthcare services, Kazakhstan, like many other countries, has introduced a regulation mechanism and defined a guaranteed amount of healthcare. Any basic services package financed by the government should prioritize services, diagnostic and medical methods, target groups receiving aid, financing mechanisms, and service providers. In addition to this, expanded service packages can be introduced. They may be partly financed by the clients themselves, such as the voluntary medical insurance already available in Kazakhstan.

Since the guaranteed amount of free healthcare does not correspondent to the state's financial capacity and in many aspects is not well defined, the Government of Kazakhstan passed a decree at the end of 2004 on the Guaranteed Amount of Free Healthcare in 2005, reducing somewhat the state guarantees and providing better definitions of socially protected groups. The formulation of the guaranteed healthcare services package is based on the financial capacity of the state, social justice in access to healthcare, transparency, and the division of responsibility for health protection between the state, employer, and the citizens themselves.

Additional resources were already allocated in the republican budget for the purchase of medications and medical goods on the regional level within the approved guaranteed amount. This might be one of the first steps towards creating a better service package.

With the growth of the state's financial capacity, the guaranteed amount of free healthcare services will grow, too. Healthcare facilities will use additional resources on increasing wages, compensation of expenditure, strengthening of the material base, and training and re-training of personnel.

The implementation of the concept of joint responsibility of the state and people for health protection will be carried out by conducting preventive measures and formulating healthy lifestyles. The main bulk of work in this sphere will be carried out by PHC facilities.

Some innovative approaches have already been introduced in the financing system, such as per capita financing of PHC, tariffs on specialized aid, and payment by clinical expenditure groups in the hospitals. Within the Healthcare Reform Program, it is envisioned that the system of centralized management of financial resources will be implemented on the oblast level (with the oblast public health management unit as the single payer). Such a system will create conditions for leveling the per capita standards of PHC and hospital fees within the regions and strengthen healthcare services quality control. The filling-up of the per capita standard will take place annually, reaching its optimal level in 2008. Similarly, in 2008, the fees for analogous healthcare services will be leveled across regions with objective factors taken into account. Unified methods of medical fees formulation will be developed, ensuring the financial sustainability of healthcare facilities. The decrease of hospitalization levels will be accompanied by the growth of fees for such services, with the fees reaching their optimal level. During 2005, measures on improving the system of health personnel remuneration and introducing the concept of differential pay by end result, taking

into account professional qualifications and the quality and amount of service provided will be taken. Starting in 2006, the wages of medical workers will gradually be increased. Transparency of the use of funds allocated for guaranteed free healthcare and personalization of healthcare services and goods will be ensured and patients' control system will be introduced. By 2008, as the country's socio-economic development and the population's income growth progress, the introduction of mandatory medical insurance will be considered.

Improvement of the quality of healthcare services

The creation of the new healthcare quality management system also envisages standardization and implementation of new diagnostic and treatment protocols of the evidence-based medicine that help improve the quality of service at all stages of treatment.

Regulation of the quality of healthcare services presupposes the following:

- Licensing, accreditation, external and internal evaluation of healthcare services providers;
- Implementation of the concept of differential remuneration of health personnel, taking into account the quality of services;
- Creation of a unified information system to monitor the quality and effectiveness of provided services.

In 2005, the State Committee on Control of the Quality of Healthcare Services was created to carry out quality management. Independent experts will be invited to run control checks. It is expected that an independent expertise institute will be created, and that professional organizations will participate in this effort.

Improvement of parenting skills

Scientific research shows that parents play an important part in a child's development. The development of the human brain is most intensive in the first years of life. At this stage, good health, proper nutrition, and a conducive to development environment define the development of physical and cognitive abilities and lay foundations for future well-being. Children who got a good start in life are better at school; they become steady and productive adults and, if provided with favorable opportunities, fully realize their potential.

Investments in early childhood development are the most effective public investments. Improvement of parenting skills is a low-cost but very powerful strategy for complex childhood health and development. Since 2004, UNICEF has been implementing a Better Parenting Initiative in the pilot regions (East-Kazakhstan and Kyzylorda oblasts) through the national system of home-nursing for children at an early age. The program's goal is to enhance parents' knowledge and skills on the issues of appropriate nutrition, development and care needed for an ill child, and nutrition for pregnant women.

The main priorities of the healthcare system in the area of maternal and child health will be the following:

- 100% provision of free medical and preventive care to women during pregnancy, during delivery, and after delivery, to children under 5 years of age, and to those on dispensary books;
- development of a program on enhancing the material base;
- installation of equipment that meets the standard requirements in the MCH facilities;
- provision of necessary medication to pregnant women, children under 5 years of age, and patients registered on dispensary books;
- creation of a republican children's rehabilitation center.

At the same time, the state will work on the provision of reliable, objective, and accessible information on health protection, healthy lifestyles, rational nutrition principles, and disease prevention skills. The state will also implement programs counteracting drug addiction, alcoholism, and smoking.

One of the main priorities outlined in the Kazakhstan-2030 Strategy and State Program on Health Reform is improvement of the demographic and health situation in the country, which is first of all related to the protection of mothers' and children's health. The main goal of the MCH service is to create an effective system that ensures the preservation and improvement of mothers' and children's health and the reduction of maternal, infant, and child mortality.

Conclusions

The official data of the Ministry of Healthcare of Kazakhstan does not reflect the real rates of infant and child mortality due to the under-registration of infants who were born within 22-28 weeks of gestation. Accepting the WHO criteria of live birth will ensure a better understanding of perinatal problems and implementation of timely and adequate measures towards their solution. At present, the Ministry of Healthcare is reviewing the possibility of introducing «live birth» and «stillbirth» definitions in Kazakhstan, taking into consideration WHO recommendations and the experience of other countries.

Judging by the rates and causes of infant and child mortality, as well as the accessibility and quality assessment of medical care conducted in partnership with international organizations, the prospect of MDG 4 achievement appears **unlikely** without additional focused efforts directed first of all at the reduction of neonatal mortality, the improvement of effective perinatal care, further development of the national healthcare system, and the social well-being of the population.

Along with the Ministry of Healthcare's plans to introduce international WHO live birth criteria, an important part in determining the actual and most realistic infant and child mortality rates will be played by the MICS survey (multi-indicator cluster survey), which will be jointly organized in 2005-2006 by international and national partners from the government and scientific institutions of Kazakhstan.

The country has significant potential to successfully achieve MDG 4 through the implementation of the Strategy of Improving Perinatal Care, ensured access to and quality of PHC services, and priority financing of maternal and child health protection.

- ✓ Reduction of infant and child mortality can be achieved through the improvement of perinatal care, the strengthening of services responsible for prevention and treatment of infectious diseases, and the restructuring of the healthcare system, especially in rural areas. Measures to prevent children's deaths from accidents should involve not only healthcare institutions, but also various other organizations and services.
- ✓ The study of the causes of infant and child mortality revealed under-registration of infant deaths, low access to quality perinatal and antenatal care, and a high level of infections among pregnant women, with all of these problems leading to complications during delivery and the neonatal period.
- ✓ The introduction of low-cost practices of perinatal care and effective monitoring of perinatal care will contribute to the improvement of the quality and accessibility of perinatal services, and the reduction of maternal perinatal and neonatal morbidity and mortality. The knowledge and professional skills of obstetricians and neonatologists are also an important factor.
- ✓ The adoption of the WHO definition of «live birth» and the accounting for perinatal losses are necessary conditions for the reduction of infant and maternal mortality to occur.
- ✓ The low level of public financing of healthcare reduces the access to guaranteed healthcare services, which means that the majority of the population carry a significant financial burden during illness.
- ✓ Insufficient access to and low quality of primary medical care contribute to under-five mortality. The main problems of primary health care are insufficient understanding of the role of PHC, marginal financing (only 17% of the total healthcare expenditure), low motivation of the health personnel to work for the end result, an inadequate financing system in some regions based on the number of visits and not on the per capita rate, and the lack of a developed network of providers acting as «porters» or the primary unit of care provision and coordination of all levels of healthcare at all stages of a patient's disease.

This situation calls for capacity building of the primary care facilities, especially rural ambulance stations and feldsher posts in all remote rayons of the country, as well as expanded implementation of the WHO program on Integrated Management of Childhood Illnesses (IMCI). This program provides for the maximal use of the primary healthcare (PHC) facilities (integrated approach to management of childhood illnesses, quality ambulatory help, prevention of hyperdiagnostics of various pathologies and excessive medication, improvement of counseling skills of health personnel on providing family care to an ill child) and, therefore, prevents delayed application for primary healthcare and child deaths from dehydration and acute respiratory infections, which are the leading causes of death in post-neonatal and childhood periods. At present, a structure for IMCI Strategy implementation is in place.

- ✓ Maternal and child mortality can be reduced through the increase in per capita financing rates in all regions. It is preferable to equalize the per capita rates across regions based on the basic services package, with additional annual budget allocations (in the regions with worst indicators), redistribution of funds between hospital and out-patient care (in favor of the latter), and expansion of primary healthcare infrastructure, which will improve the access to the necessary quality medical aid.
- ✓ Inequality in access to healthcare services that mostly affects children from poor families and living in rural areas should be removed as it also significantly influences infant and child mortality.

Connection with other MDGs

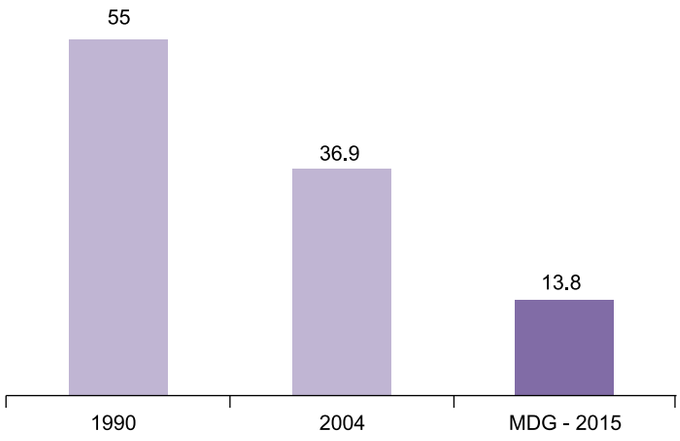
Reducing child mortality is closely related to activities aimed at improving the health of women of reproductive age, as it is known that most diseases before and during pregnancies determine a higher mortality risk for mothers, fetuses and newborns. As a rule, adverse socio-economic factors and living conditions are conducive to the development of diseases. Issues of HIV/AIDS among pregnant women and mother to child transmission are important, too. Therefore, achieving MDG 4 is impossible without eliminating poverty and hunger (MDG 1), improving mothers' health protection (MDG 5), combating HIV/AIDS and TB (MDG 6) and achieving progress in other MDGs.

MDG 5 Improve Maternal Health

Target 6:

Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio

Maternal Mortality Ratio in Kazakhstan (per 100,000 live births)



***Maternal death** is the death of a woman due to pregnancy (regardless of its localization and duration). Maternal death occurs during pregnancy or within 42 hours after its termination. The causes of maternal death are related to pregnancy or aggravated by it or its management, but do not include accidents. Maternal deaths are divided in two groups: 1) those that are directly related to obstetric causes, and 2) those that are indirectly related to obstetric reasons (caused by previously existent diseases or diseases that emerged during pregnancy, not related to obstetric reasons, but aggravated by the physiological impact of pregnancy).*

The maternal mortality ratio (MMR) is an integrated indicator of the health of women of reproductive age, and it reflects the result of the interaction between economic, cultural, social, hygienic, and health factors. Therefore, the ratio reflects the state healthcare policy.

Maternal mortality belongs to the group of preventable deaths and serves as one of the basic criteria for evaluating the quality of obstetric facilities and the effectiveness of introducing scientific findings into the medical practice.

The maternal mortality ratio is calculated according to the above definition, per 100,000 live births.

The prevention and reduction of maternal mortality involve the issue of ensuring social justice and human rights. This is often discussed, but progress in addressing it is far from universal. Pregnancy and delivery complications remain the leading causes of death and disability among women of reproductive age in developing countries, where 99% of maternal deaths occur.

Significance for Kazakhstan

Maternal mortality is primarily the problem of developing countries. Kazakhstan does not fall under this category, and yet, judging by the maternal mortality indicator, it can hardly be considered a developed country either. The current maternal mortality rate in Kazakhstan is close to the rates registered in EU countries, the USA, and Japan in the mid-1970s, and significantly exceeds the rates of many former socialist countries (Table 5.1).

The maternal mortality dynamic (change) in Kazakhstan is not very positive either. The absolute number of maternal deaths is constantly declining, but to a great extent this is due to the falling number of births. As for the maternal mortality ratio per 100,000 live births, for a long time it remained rather high for a country where almost 100% of births are attended by skilled personnel. Only in recent years has the ratio started to decrease, though not sufficiently so.

More than half of maternal deaths in Kazakhstan were due to three causes: obstetric hemorrhages, abortions, and extragenital diseases.

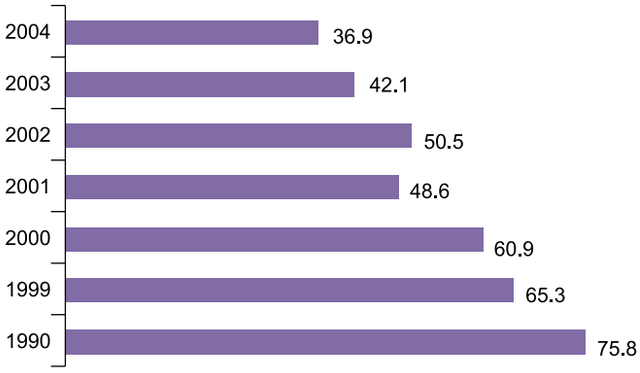
The general growth in morbidity among women of reproductive age, especially concerning reproductive system disorders, in many ways defines the increasing number of pregnancy and delivery complications. As a result, the proportion of normal deliveries is only 22%, which inevitably affects the health of newborns. Every third newborn has health deviations; there is a large proportion of pre-term births, and infant and maternal mortality rates remain high.

Table. 5.1. Maternal Mortality Ratio in European and CIS Countries, per 100,000 live births

№	Country	1998	1999	2000	2001	2002
1	Armenia	25.4	32.9	52.5	21.8	9.3
2	Kyrgyzstan	33.6	42.3	45.5	43.8	53.5
3	Latvia	43.5	41.2	24.7	25.4	5.0
4	Poland	4.8	5.5	7.9	3.5	5.4
5	Russia	44.0	44.2	39.7	36.5	33.6
6	Turkmenistan	13.1	13.3	3.3	6.1	13.5
7	Uzbekistan	9.6	14.7	34.5	33.5	26.9
8	Ukraine	27.2	25.2	24.7	23.9	21.8
9	Czech Republic	5.5	6.7	5.5	3.3	3.2
10	Estonia	16.4	16.1	45.9	7.9	7.7

Source: 2004 Social Monitoring, UNICEF MONEE.

Graph 5.1. Maternal Mortality Ratio in Kazakhstan



Source: Ministry of Healthcare of the RK

Although the abortion situation in Kazakhstan is improving, the proportion of abortions remains one of the highest in Central Asia. The artificial termination of pregnancy, rather than its prevention through the use of modern contraception, is still a frequently used birth control method in Kazakhstan.

At present, Kazakhstan is experiencing a serious epidemic of sexually transmitted infections (STIs). According to the epidemiological sentinel surveillance of pregnant women conducted in 2004 in Karaganda, Pavlodar, Uralsk, and Shymkent by the Republican AIDS Center with the technical assistance of CDC, the prevalence of syphilis – an «indicator of STI» – was 2.8%. This amount is 30 times higher than the syphilis incidence among the general population, which is based on applications to health facilities. Pregnant women with STIs often have abdominal pregnancies, pre-term deliveries, stillbirths, low weights, and pathologies of the fetus.

The imperfection of the practice of the epidemiological surveillance of STIs and treatment approaches that differ from WHO recommendations lead to an underestimation of the epidemiological situation, the poor planning of measures to counteract the epidemic, low coverage for treatment and counseling, and a reduction of the curability of infections.

Because no complex survey of the causes of maternal mortality has ever been conducted in Kazakhstan, all international experts' assumptions are based on the national statistical data or indirect assessments according to standard international methods that are not used in Kazakhstan. Therefore, the data provided by national statistics and UN data differ.

According to the data of the Ministry of Health, in 1990, MMR in Kazakhstan was 75.8 per 100,000 live births; according to the Agency for Statistics, it was 55.0, and according to international experts' data, it was 210 per 100,000 live births. These discrepancies point to methodological incompatibility, which adds to the importance of the definition of the initial indicator. Reducing maternal mortality by 75% by 2015 would correspond to the following figures: 19.0 according to the Ministry of Health data, 13.8 according to the Agency for Statistics, and 52.2 per 100,000 live births according to international experts' data, which is fairly close to representing the real situation and seems the most probable.

Reliably assessing maternal mortality is a complicated task, and MMR calculation methods differ significantly from country to country. The main source of information about MMR is the current system of registration of deaths by their causes. But this system is used only in developed and several developing countries (approximately 60 in total, including Kazakhstan), and even in this system it is necessary to allow a margin of error in ascertaining the cause of death of a pregnant woman. Most developing countries use other methods (such as household surveys; the sisterhood method; studies of the deaths of women of reproductive age (RAMOS) using different sources, including census data, etc.) to assess maternal mortality. Therefore, international comparisons of maternal mortality rates are not always reliable.

A sufficiently accurate assessment of maternal mortality and the monitoring of short-term trends in its changes are possible only when deaths are fully and universally accounted for in the most precise manner. Therefore, all global estimates of maternal mortality are relative and should be interpreted with

great care. As a result, evaluating the probability of achieving Target 6 – to reduce by three quarters (75%), between 1990 and 2015, the maternal mortality ratio – is possible only for a limited number of countries.

Alternative indicators include those that are closely related to maternal mortality and allow assessing progress in its reduction. The most frequently used indicator is the proportion of births attended by skilled health personnel (doctors, obstetricians, nurses). Between 1990 and 2000, this proportion in developing countries grew overall from 42% to 52%, and maternal mortality rates went down correspondingly. The greatest success was achieved in South-East Asia (from 36% to 59%) and North Africa (from 39% to 64%). It is hard to use this indicator for measuring the progress of Target 6 in Kazakhstan though, as the proportion of births attended by skilled health personnel is approaching 100%, while maternal mortality remains rather high for such a proportion. It follows then, that the real problem lies in the quality of obstetric care provided.

In Kazakhstan, maternal mortality differs significantly by region. In some areas, MMR is close to the level of some European Union countries, while in others, it is the same as the rate in developing countries.

MDG 5 progress in Kazakhstan

In the past decade, the total number of maternal deaths decreased by almost a half, which is related to the decline in the absolute number of deliveries and abortions. At the same time, the maternal mortality ratio calculated per 100,000 live births decreased by almost a third.

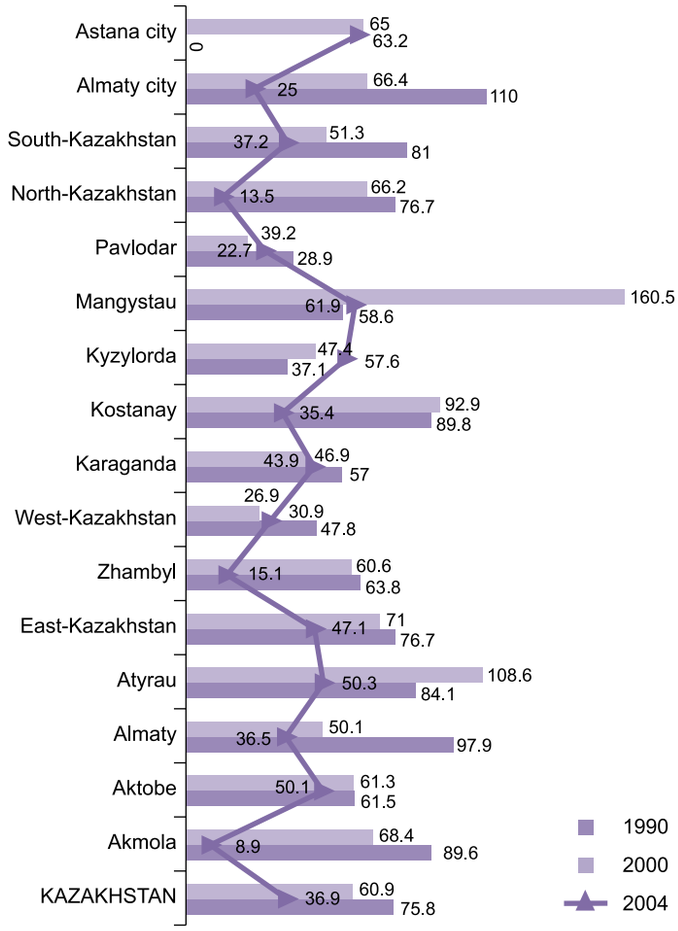
Among the causes of maternal mortality, the greatest decline occurred in deaths from abortions started outside of health facilities and delivery sepsis. Overall, mortality (per 100,000 live births) from artificial abortion, pregnancy, or obstetric hemorrhages has gone down. The smallest decline occurred in the proportion of deaths from toxicosis during pregnancy, which is directly related to women's overall health status.

As a result, some changes in the composition of maternal mortality causes occurred: the proportions of extragenital diseases and obstetric hemorrhages during pregnancy have increased, while the proportions of abdominal pregnancy and sepsis that caused the deaths have gone down. The decrease in the mortality from abortions happened primarily because of better availability of modern contraception methods and the introduction of modern pregnancy termination technologies- the so-called «safe abortion», which includes the use of prostaglandides, and vacuum and manual aspiration. The decrease in the proportion of sepsis in causes of death was due to the introduction of «safe motherhood» programs – primarily, the joint keeping of mother and child, early breastfeeding and etc.

Introduction of the RSRCMCHP-developed algorithm on abdominal pregnancy management at the level of PHC services has allowed reducing mortality from this type of pathology.

Although the MMR remains high in several oblasts, it is necessary to note that a downward trend in the MMR is registered practically throughout the country. However, more detailed examination that was done over several years revealed that the indicator is unstable.

Graph 5.2. Maternal Mortality Ratios in Oblasts of Kazakhstan in 1990, 2000, and 2004

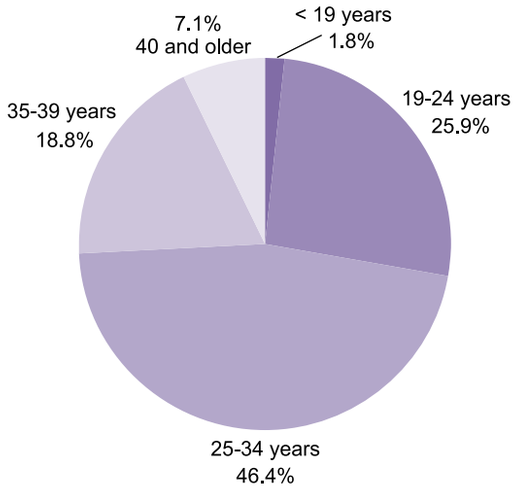


Expert analysis of medical documentation for the period of 1999-2003, conducted by the Republican Scientific Research Center or Maternal and Child Health Protection (RSRCMCHP), has showed that **the majority of women who died were rural residents** – on the national level, they comprised 51.6%, prevailing in 11 out of 14 oblasts. Therefore, rural women are a more vulnerable group.

The distribution of death cases by age group is as follows: young – 1.8%; 19-24 years – 25.9%; 25-34 years – 46.4%; 35-39 years – 18.8%; 40 years and older – 7.1%.

It follows then, that two-thirds (72.3%) of deaths occur in the most active reproductive age group (19-34 years). Moreover, rural women prevailed in all age groups except «young»; in the «40+» group, the number of deaths among rural women was 1.5 times higher than that among urban women.

Graph 5.3. Maternal mortality by age group



Segregated by the term of pregnancy, maternal mortality looks as follows:

66% died in the postnatal period, and the number of rural women in this group was 1.2 times higher than the number of urban women;

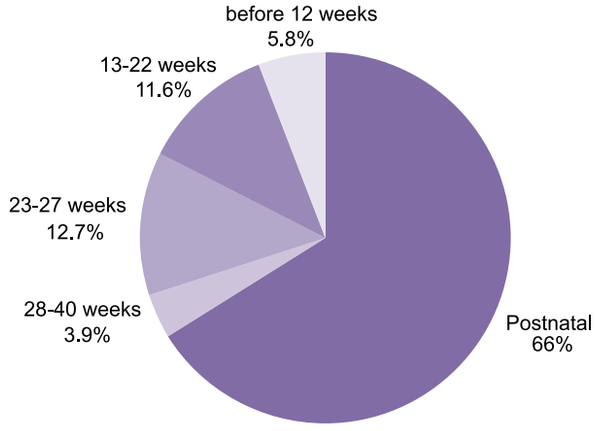
3.9% – 28-40 weeks of gestation;

12.7% – 23-27 weeks of gestation;

11.6% – 13 -22 weeks of gestation;

5.8% of all deaths occurred before 12 weeks of gestation, and there were twice as many rural women as urban.

Graph 5.4. Maternal mortality by term of pregnancy



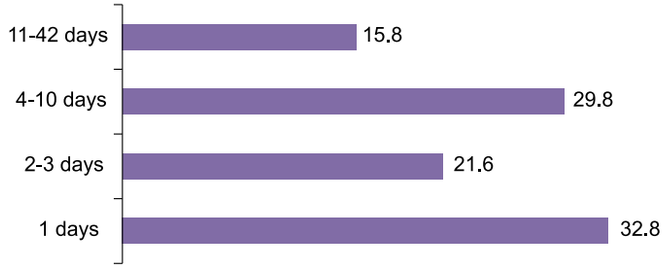
Thus, the majority of deaths occur in the postnatal period. The proportion of deaths in the first 24 hours after delivery was 32.8%, in 1-3 days – 21.6%, in 4-10 days – 29.8%, and in 11-42 days – 15.8%. Of the total number of postnatal maternal deaths, 84.2% occurred in the first 10 days, with every second woman dying within 3 days after delivery, and every fifth within 24 hours.

Reducing maternal mortality is possible in Kazakhstan, but the monitoring indicators should be realistic. The introduction of a number of aspects of modern «safe motherhood» technologies has proved effective and is having a positive impact on achieving the goal.

According to the WHO definition, «safe motherhood» rests on three fundamentals: social assistance, primary healthcare (PHC), and obstetric care, which in its turn rests on intensive care, delivery attendance (safe and clean), antenatal care, and family planning.

Joining the efforts of the government, civil society, the mass media, and healthcare specialists will allow achieving the desired result.

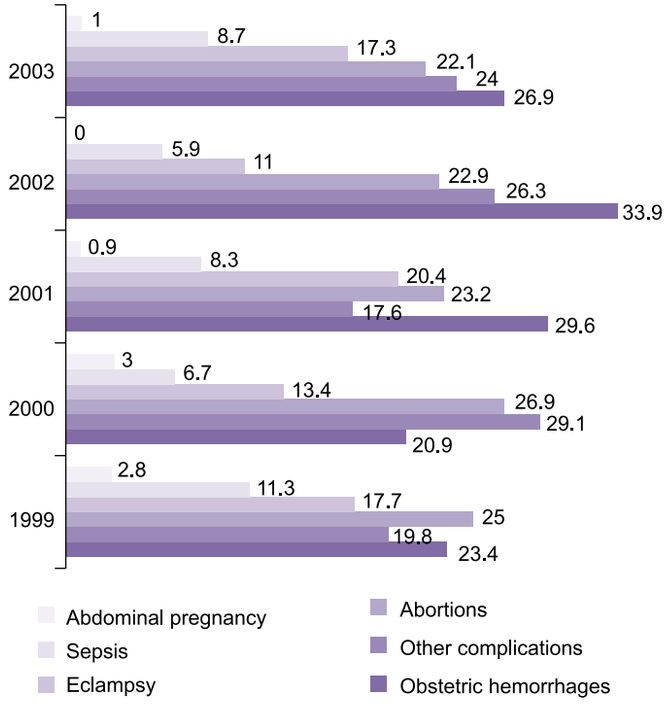
Graph 5.5. Postnatal maternal mortality



Causes of maternal mortality in Kazakhstan

The structure of maternal mortality in the country indicates that the main causes of maternal deaths are hemorrhages, other pregnancy complications (when death occurs not because of obstetric complications but because of extragenital disorders, complications of anesthesia, anaphylactic shock, thrombembolism, etc) and abortions (terminations of pregnancy before 28 weeks of gestation due to miscarriage or artificial terminations for social and medical reasons, criminal abortions).

Graph 5.6. Maternal mortality structure in Kazakhstan



Source: Population health in Kazakhstan and the work of healthcare organizations in 1999-2003. Ministry of Health.

Obstetric hemorrhages are the leading cause of maternal mortality in most countries. Obstetric hemorrhages can be caused by a number of factors or their combinations, and they are known to be sudden and massive.

In Kazakhstan, obstetric hemorrhages are also the leading

cause of maternal mortality. Every delivery is accompanied with a permissible blood loss, but its impact depends on the initial level of hemoglobin. Women with normal hemoglobin concentrations bear large blood losses better than those who have anemia, which, due to DVC syndrome, may lead to a lethal outcome. Direct causes of death are hemorrhagic shock due to the massive loss of blood during the exfoliation of a normally positioned placenta and the disruption of the uterus' retractive function.

The main causes of the exfoliation of normally positioned placentas are pregnancy complications, such as hypertension, anemia, extragenital diseases, and a low health index. Disruption of the uterus' retractive function occurs in women who have had many children (multiparae), those who have had abortions and miscarriages, those who had or still have STI, and when the interval between pregnancies was too short (less than three years).

In the past five years, hemorrhages have been the leading cause of maternal mortality in Almaty, Zhambyl, Mangystau, Pavlodar, and South-Kazakhstan oblasts; 60.2% of hemorrhages occurred in these regions.

89.0 % of women experienced complications during the last pregnancy. The majority of complications were due to anemia, hypertensions of the pregnant, and kidney diseases. These complications were registered among almost all women who died.

Analysis has shown that to a great extent, the deaths of women in labor are the result of limited access to and low quality of healthcare services for outpatient (93.4%) and inpatient (85.6%) conditions. Every fourth pregnant woman was not registered at a health facility, and of those who were, 39.5% had not been attending antenatal clinics regularly. 35.5% received outpatient treatment for extragenital pathology and gestation complications, and 18.2% received hospital treatment. Thus, women who died were not properly observed and did not receive quality medical care, and when hemorrhages occurred, timely and adequate aid was not provided.

Such a situation is related to the fact that the majority of deliveries in Kazakhstan occur at the level of central rayon clinics (CRC), and they mostly take place during the nighttime, when only 1 or 2 midwives (obstetricians) are on duty. In European countries and in the USA, emergency aid starts from the moment the patient is admitted to the reception ward, and is continued on a higher level in the delivery or surgery room under constant automatic monitoring, which registers all changes in the body.

Given that obstetric hemorrhages cause large blood losses in a short period of time, hospitals should always be ready to provide emergency and first aid. The quality of services is as important as their accessibility, which includes the availability of both highly skilled personnel and the necessary equipment.

A retrospective analysis of maternal mortality highlights the importance of the prevention and treatment of hemorrhages long before they become life threatening. The introduction of new and the improvement of existing practices in the prevention and treatment of obstetric hemorrhages will help to reduce the frequency of this dangerous pathology and, consequently, reproductive losses overall.

It is necessary to improve the health index of pregnant women, reduce anemia, provide adequate antenatal care, and implement «safe motherhood» practices, as well as staff central rayon clinics with twenty-four-hour stations of obstetrician-gynecologists and anesthetist-reanimators (at present, there is a 50% deficit), install appropriate equipment, and provide blood and its substitutes.

Other delivery and pregnancy complications account for 24% of maternal mortality, and two-thirds of them are **extragenital disorders**.

Extragenital disorders (anemia; tuberculosis; heart, liver, and kidney diseases, etc.) make a considerable contribution to maternal mortality.

Expert evaluation of medical documents on the women who died has shown that in only 16% of cases were extragenital diseases detected before pregnancy. In 52.8%, they were detected during pregnancy, and in 31.2% of cases the diagnosis was determined post mortem. At the same time, for every fourth woman who died of extragenital pathology, pregnancy was counter-indicative; 48% of these women were delivering for the second time, and 52% were experiencing primiparae (first delivery). This indicates that on the one hand, the diagnostics, treatment, curing, and rehabilitation of women with extragenital diseases are at a low level, and on the other, women with serious pathologies do not use modern contraception methods and do not realize the importance of self-preservative reproductive behaviour.

The main background of pregnant women's high morbidity is anemia. According to DHS (1995), the proportion of women in Kazakhstan who suffered from anemia reached 48.8%, and in some rayons of the environmentally troublesome Aral Sea region, it went up to 99%. Anemia leads to the low health index of pregnant women, weakening their immune systems and reducing their stability and resistance to delivery and postnatal complications. The main causes of anemia are inadequate and imbalanced nutrition. For 2004-2005, the Government has allocated transfer funds to purchase ferruginous medications for pregnant women, which should help reduce anemia but will not eradicate its causes, which are inadequate and imbalanced nutrition.

The growing incidence and mortality from tuberculosis and infectious hepatitis among women raises concern too. The data proves once again that social, economic, environmental, and institutional factors determine health status.

The reduction of maternal mortality from extragenital disorders is possible, provided that timely diagnostics and treatment outside of pregnancy, adequate antenatal care during pregnancy, and adequate health self-assessment by women themselves occur. A woman should be in a condition of full physical and psychological well-being at the start and for the duration of her pregnancy.

Abortion. World Health Organization considers abortion a serious healthcare problem that touches upon women's personal and family interests and influences the development of demographic processes and their connection to socio-economic, socio-hygienic, and medical factors.

The prevalence of abortion differs from country to country. This is partly due to the laws related to the termination of pregnancy, the insufficient development of family planning

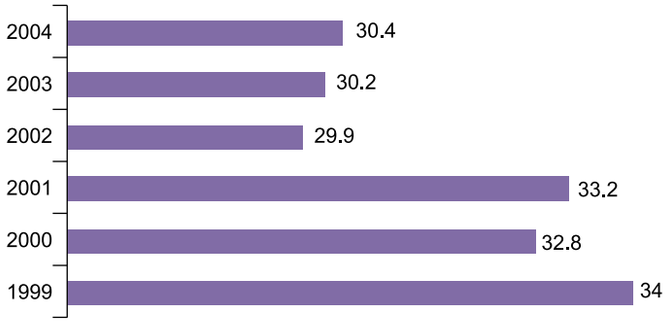
services, the lack of modern contraceptives, and the absence of adequate sexual education and awareness raising.

Mortality from abortions includes not only deaths related to the execution of abortion, but all maternal deaths before 28 weeks of pregnancy caused by miscarriages, terminations of pregnancy for social or medical reasons and criminal operations.

Of all the causes of maternal mortality, abortions account for a quarter of deaths; that is, every fourth maternal death is caused by abortion.

In the past five years, the proportion of abortions in Kazakhstan has been decreasing but the numbers still remain high.

Graph 5.7. Abortions per 1,000 women of fertile age



Source: Agency on Statistics of the Republic of Kazakhstan

Criminal abortions were the leading cause of deaths from abortions, followed by abortions for medical reasons, miscarriages, medical abortions, and abortions for social reasons.

The structure of mortality from abortions differs from urban to rural areas. In urban areas, the leading causes of death are criminal abortions, medical abortions, and terminations for social reasons. In rural areas, a fairly large proportion of deaths were caused by miscarriages and terminations for medical reasons.

In the past five years, abortion was the main cause of maternal mortality in Almola, East-Kazakhstan, West-Kazakhstan, Karaganda, Kostanay, Kyzylorda, and North-Kazakhstan oblasts, and Almay and Astana cities.

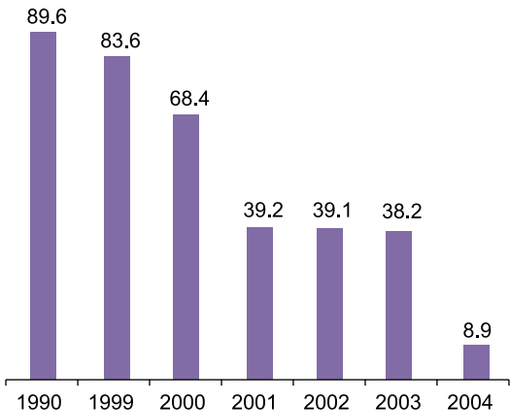
Effective family planning is one of the ways to reduce the number of abortions and increase the interval between pregnancies for the reduction of the maternal mortality rate.

Since the average price of one pack of modern birth control pills' is between 900 and 1,300 tenge for one menstrual cycle, many women cannot afford them. Therefore, they either use old ineffective methods or ignore them and have abortions.

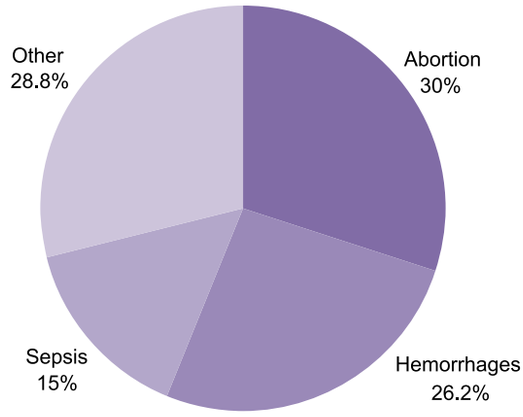
Structure of maternal mortality by oblast (1999-2004)

AKMOLA OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – abortion (30.0%),

Second leading cause – hemorrhages (26.2%),

Third leading cause – sepsis (15.0%).

The maternal mortality ratio by oblast is random and does not represent the actual situation. This is confirmed by the ratio's structure. During this period, the direct cause of death from **abortions** in Akmola oblast was septic criminal abortion. The number of abortions per 1,000 women of fertile age in this oblast was 53.3 (2003) when the country's average was 29.5[97]; counting per 100 births (live and still), it was 113.1 and 51.1, respectively. Contraception coverage in the oblast was 46.3%.

The main causes of abortions in this oblast are unsatisfactory family planning services, lack of access to safe abortion, and low awareness about modern contraception technologies.

During six years, **hemorrhages** have been the second leading cause of maternal mortality in the oblast. In all cases, the direct cause of obstetric hemorrhage was atony of the uterus after delivery, which happened as a result of the low preparedness of rayon obstetric facilitates to provide emergency aid. As not all of doctors' duties are practiced twenty-four-hours in CRC, there are no blood banks, and anesthetist-reanimators are not prepared to provide emergency aid when hemorrhages occur.

The third leading cause of maternal deaths is obstetric **sepsis**. Only belated decisions to conduct surgery have led to lethal outcomes.

Thus, maternal mortality can be reduced in Akmola oblast and brought close to achieving Target 6. This can be done through the elimination of three main MM causes: abortion, hemorrhages, and sepsis.

To this end, it is necessary to open more family planning offices, centrally purchase contraceptives for free distribution among socially vulnerable groups, and conduct an information and education campaign about abortion complications. Youth should be included in this campaign.

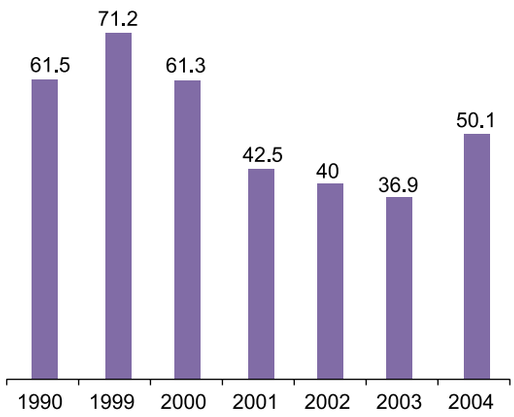
To reduce maternal mortality from hemorrhages, it is necessary to properly organize the work of obstetric facilities: create blood banks, provide blood substitutes, implement twenty-four-hour duties of obstetrician-gynecologists, introduce active postnatal management according to «safe motherhood» practices (including the algorithms of postnatal observation), and improve the professional skills of health personnel.

To reduce mortality from sepsis, it is necessary to implement the «safe motherhood» program, which ensures access to a clean and safe delivery. This method includes a timely and quality examination in the antenatal period, STI prevention and treatment, the introduction of modern postnatal observation technologies (the joint keeping of mother and child, individual delivery rooms), reducing the rate of hospital infections, and improving the skills of obstetrician-gynecologists in the rayon clinics.

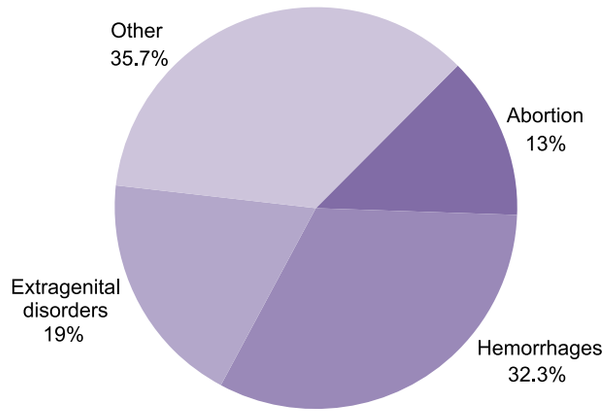
[97] According to the data of the Ministry of Healthcare of the RK. The discrepancy between the data of the MoH and the Agency on Statistics is due to the latest recalculation of the average annual population numbers during 1999-2004 by the Agency on Statistics.

AKTOBE OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – hemorrhages (32.3%),

Second leading cause – extragenital disorders (19.0%),

Third leading cause – abortion (13.0%).

Obstetric hemorrhages made the biggest contribution to maternal mortality in the oblast. The cause of obstetric hemorrhages was pre-delivery placenta abruption accompanied by hypertensive pregnancy complications in multiparae women. Maternal deaths from hemorrhages could have been prevented if proper pregnancy and delivery management practices had been observed, and if prognosis and prenatal hospitalization had been carried out. It is necessary to enhance the professional skills of obstetrician-gynecologists in central rayon clinics and equip hospitals for the provision of emergency help.

In 80% of cases, deaths from **extragenital disorders** occurred in the ambulance hospitals during 28-36 weeks of gestation from such causes as influenza, pneumonia, and brain aneurysm. It is necessary to enhance doctors' professional skills in detecting extragenital diseases in pregnant women and in providing appropriate therapy. In one case, a phthisiatrician (tuberculosis specialist) died from miliary tuberculosis in the postnatal period.

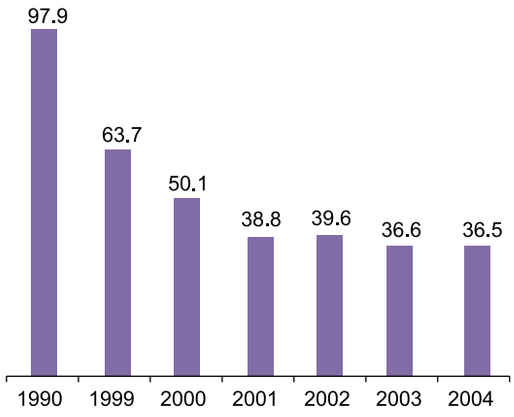
The third leading cause of maternal mortality in the oblast was **abortions**.

All abortions were conducted during 23-27 weeks of pregnancy, for medical reasons such as placenta abruption accompanied with high arterial pressure. Maternal losses in this group could have been prevented with the proper provision of family planning services for vulnerable groups (women who died were 20-37 years old, most of them unemployed), dynamic ambulatory observation, and proper antenatal care.

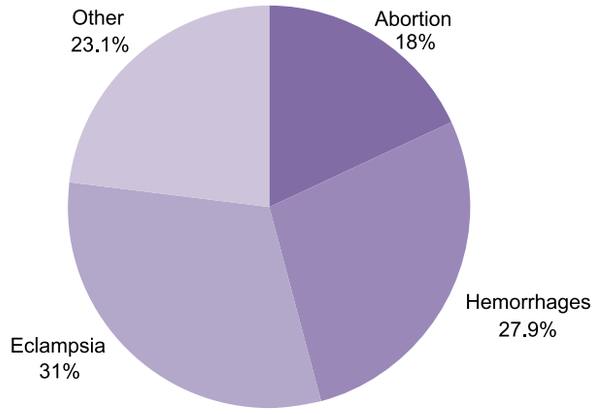
Analysis allows the assumption that maternal mortality in Aktobe oblast can be reduced by over a half through ensuring the preparedness of rayon hospitals to provide full-scale emergency obstetric aid, and enhancing the quality of family outpatient services and family planning so that the needed interval between pregnancies and deliveries is observed.

ALMATY OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – eclampsia (31.0%),

Second leading cause – hemorrhages (27.9%),

Third leading cause – abortion (18.0%).

Every third maternal death in the oblast was caused by **eclampsia** accompanied by high arterial pressure and kidney disorders, and 80% of deaths occurred in central rayon clinics. The main reasons for maternal mortality were inadequate antenatal care in SVA (family outpatient services) and antenatal clinics, which were practically disbanded and do not meet the «safe motherhood» criteria. In rural areas, algorithms of pregnancy management in cases of hypertension syndrome were not implemented. Women did not receive aid to improve their health before pregnancy, especially in cases of kidney disorders, which have lead to such complications as eclampsia, the weakening of the immune system, and maternal deaths.

The main causes of **obstetric hemorrhage** were postnatal and post-surgery uterus atonia accompanied by anemia, with blood losses ranging from 2,000 ml to 5,000 ml. In 50% of cases, hemorrhages occurred in the cities of Tekeli, Issyk, Talgar, and Taldykorgan. Expert analysis of maternal deaths caused by hemorrhages conducted by RSRCMCHP found that obstetric clinics were poorly prepared to provide emergency help, the professional skills of health personnel were low, and pregnant women were not properly prepared for delivery.

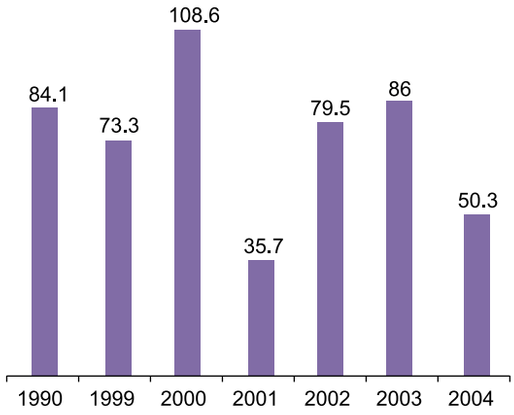
The high prevalence of anemia and kidney diseases calls for appropriate periodic full examinations of women of fertile age and solutions to problems related to safe drinking water and adequate nutrition.

The third leading cause of maternal mortality in the oblast was **abortions** carried out during 13-27 weeks of pregnancy; 70% of them were medically prescribed due to heart disease and severe gestosis accompanied by kidney disorders, and 20% were caused by hemorrhages during miscarriage. In two cases, death was caused by sepsis during a criminal abortion at the late stage of gestation. The main underlying reasons that deaths occurred before 28 weeks of pregnancy were the lack of systematic measures on preventing counter-indicative pregnancies among women with severe extragenital pathologies (heart and kidney diseases, etc), the lack of information on modern contraception, and delayed decisions on pregnancy termination.

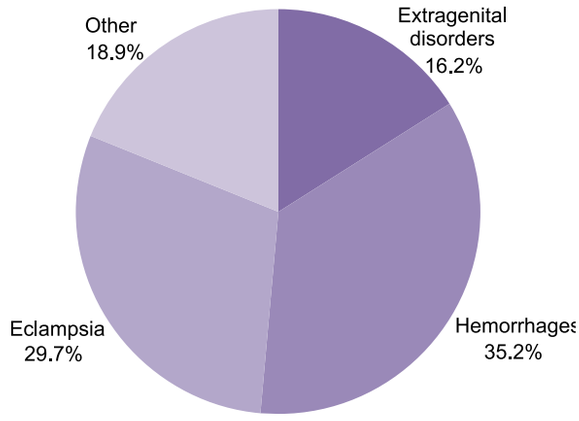
To reduce the maternal mortality in Almaty oblast by 75%, it is necessary to periodically conduct adequate, full examinations of women of fertile age before and during pregnancy, improve the health of women with extragenital pathologies by placing them in sanatoriums, address the problems of safe drinking water and balanced nutrition, carry out systematic work on family planning, and enhance the professional skills of health specialists.

ATYRAU OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – hemorrhages (35.2%),

Second leading cause – eclampsia (29.7%),

Third leading cause – extragenital disorders (16.2%).

In the past six years, a high maternal mortality ratio has been registered in this oblast, significantly exceeding the national average. The leading cause of death is **hemorrhages** accompanied by severe anemia among women who were pregnant for the first time and those who already had children. In 60% of cases, hemorrhages occurred after surgical delivery in the oblast maternity home. Anemia during pregnancy leads to hypersensitivity to blood losses and the rapid development of irreversible processes in the body.

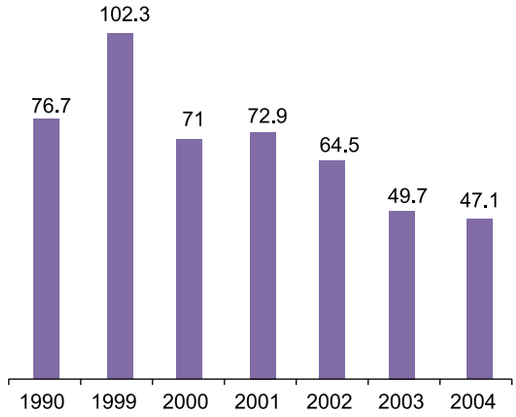
The second leading cause of death is **eclampsia** with high arterial pressure accompanied by kidney disorders and anemia. Most women who died had haematocyte levels 2-2.5 times below the norm, which led to a sharp weakening of their immunity status. At present, there is convincing evidence that eclampsia is an autoimmune pathology syndrome.

In spite of the good material condition of the oblast maternity home, the oblast has the lowest indicators in availability of obstetrician-gynecologists and qualification categories. Given the significant distances between settlements and the low population density in the oblast, the problem of fast transportation of patients to the center, or transportation of doctors to the patients, still needs to be solved.

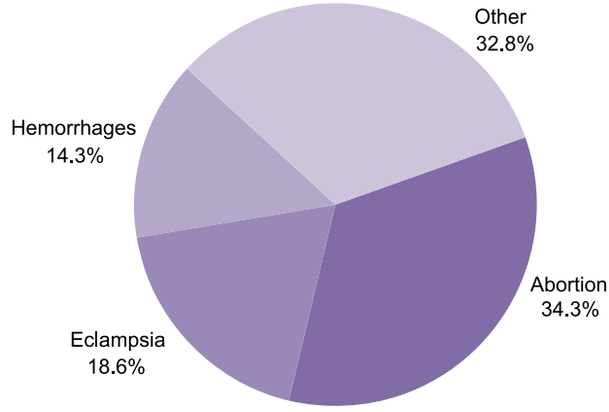
It is necessary to ensure rational and healthy nutrition in the oblast, address the issues of health-conscious behavior, periodically examine women of fertile age, provide access to safe drinking water, promote family planning, and generally improve the health of women and children. Better staffing and professional skills are required. It is also advisable to consider providing emergency help through air medical service, thus improving the access to quality care. If a complex approach to addressing the problem of maternal mortality in Atyrau oblast is taken, the maternal mortality can be reduced by half, but achieving a 75% reduction (to 21.0) is unlikely.

EAST-KAZAKHSTAN OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – abortion (34.3%),

Second leading cause – eclampsia (18.6%),

Third leading cause – hemorrhages (14.3%).

During 10-15 years, **abortion** has been the leading cause of maternal mortality in this oblast. Women in East-Kazakhstan oblast generally prefer abortions to other options: in 2003, there were 42.9 abortions per 1,000 women of reproductive age in the oblast, while the national average was 29.5; counting per 100 births, there were 85.9 abortions in the oblast, the national average of 51.1. In 2004, there were 1,500 more abortions in the oblast than in 2004. The birth rate in East-Kazakhstan oblast is 12.7 per 1,000 population (2003), while the national average is 17.2, and the natural increase has a negative value (-0.1). In this oblast, abortions are classified only by two categories: medically prescribed abortions (55%) during 20-27 weeks of gestation due to concomitant severe extragenital pathology and pregnancy complications, and criminal abortions (45%).

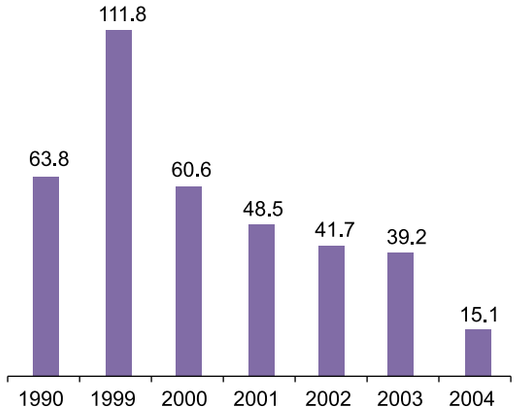
Eradicating mortality from abortions by 3 times will reduce the maternal mortality in the oblast, as it is the leading cause of maternal deaths here.

As was noted before, **eclampsia** develops because of high blood pressure, anemia, and kidney diseases, while **obstetric hemorrhages** are the result of women's low health status as well as insufficiently qualified doctors and the lack of blood substitutes.

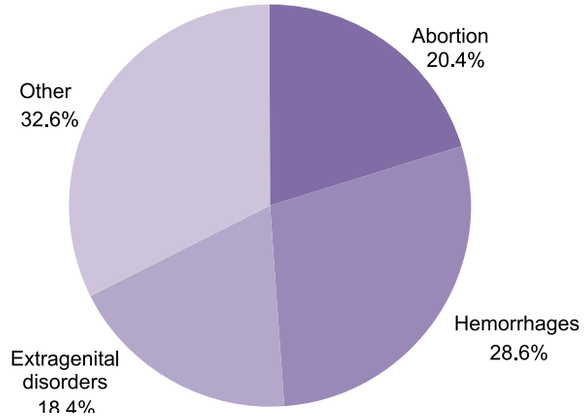
The maternal mortality in East-Kazakhstan oblast may be reduced by 60%, maximally approaching the target, through the active implementation of family planning and undesired pregnancy prevention programs. It is necessary to ensure access to modern contraceptives through their centralized purchase and distribution among risk groups. It is also necessary to enhance the professional skills of health personnel through the introduction of the «safe motherhood» program, which includes the provision of emergency help.

ZHAMBYL OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – hemorrhages (28.6%),

Second leading cause – abortion (20.4%),

Third cause – extragenital disorders (18.4%).

Hemorrhages are the leading cause of maternal mortality in the oblast and are characterized by their massiveness, ranging from 3,000 to 6,800 ml. In 70% of cases, deaths occurred in a central rayon clinic in the postnatal period. In 80% of cases, there were attempts to stop the bleeding using conservative methods instead of immediate radical surgery. In all cases, hemorrhages were preceded by severe anemia among women who already had children.

In 100% of deaths from **abortions**, the abortions were medically prescribed due to severe extragenital disorders (heart, kidneys, liver, etc).

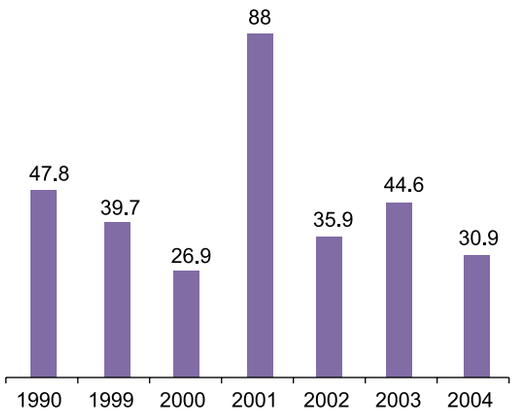
The high proportion of extragenital diseases speaks of the low health index of women of fertile age. It also demonstrates the need for systematic health improvements before pregnancy, and adequate antenatal care, observance of the intergenetic interval between pregnancies, and possibly, the provision of financial support during pregnancy to ensure balanced nutrition.

The situation described above proves that the maternal mortality ratio of 15.1 in the oblast during 2004 is random and does not represent the real situation.

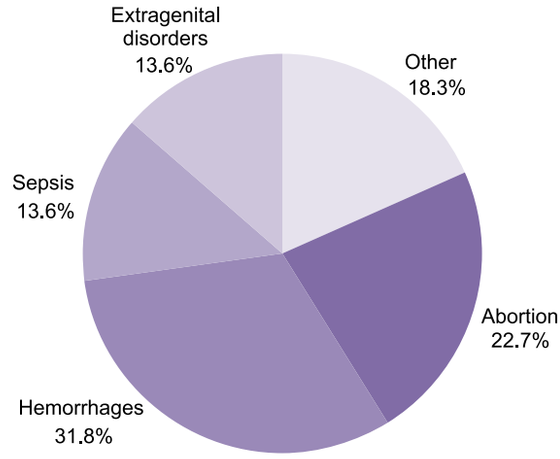
Achieving the Goal in Zhambyl oblast is hardly possible, but it is possible to reduce maternal mortality by 50% or more through eliminating two main causes of death: hemorrhages and abortions. To this end, it is necessary to enhance the professional skills of doctors and to provide health facilities with styptic medications, as well as to work on preventing undesired pregnancies and to provide risk groups with contraceptives.

WEST-KAZAKHSTAN OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – hemorrhages (31.8%),

Second leading cause – abortion (22.7%),

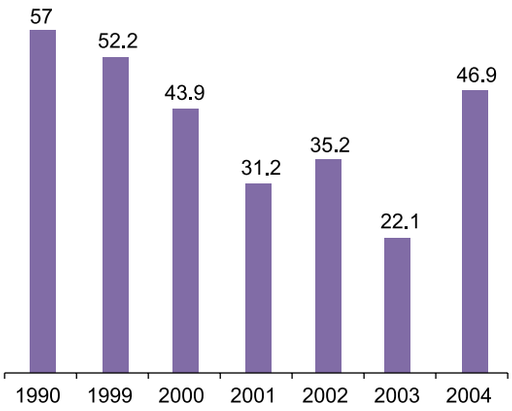
Third leading cause – extragenital disorders (13.6%), sepsis (13.6%).

Every third maternal death was from **obstetric hemorrhage** in the postnatal period, accompanied by premature placenta abruption, which in 70% of cases was caused by severe anemia (2-2.5 times below the norm). This means that women were not prepared for pregnancy and delivery, and obstetric departments of central rayon clinics were not prepared to provide aid in cases of massive hemorrhages.

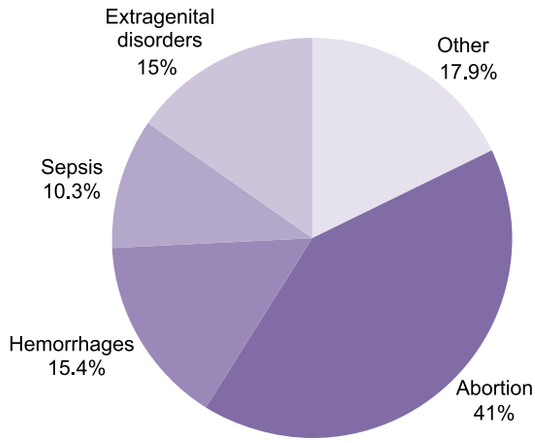
About 8,000-9,000 deliveries and 7,000-7,500 abortions occur in the oblast annually. It is not surprising then, that **abortions** are the second leading cause of maternal mortality here, and in all cases deaths from medically prescribed abortions at the late stage of gestation were caused by hemorrhages. Therefore, it is necessary to improve women's health before pregnancy, provide adequate antenatal care, and ensure that clinics are prepared to provide urgent aid. It is necessary to re-open antenatal clinics and carry out measures on family planning, introduce safe motherhood technologies, and enhance the professional skills of health specialists. Implementing all these measures will make it possible to reduce maternal mortality by more than 60%.

KARAGANDA OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – abortion (41.0%),

Second leading cause – hemorrhages (15.4), extragenital disorders (15.4%),

Third leading cause – sepsis (10.3%).

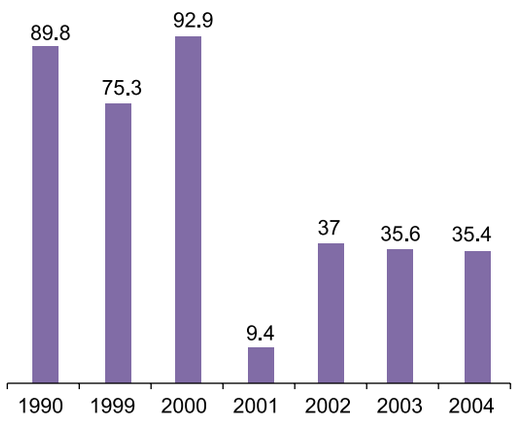
More than a third of maternal deaths in the oblast were related to **abortions**, 62.5% among them caused by sepsis after criminal abortion. There were 41.4 abortions per 1,000 women of reproductive age (in 2003) in the oblast, against the national average of 30.2, or 90.7 abortions per 100 births against the national average of 51.1. At the same time, only 22.9% of abortions in the oblasts are safe (mini-abortions).

The second leading cause of death is **obstetric hemorrhages**, and in 33.3% of cases deaths were registered at home without any medical aid.

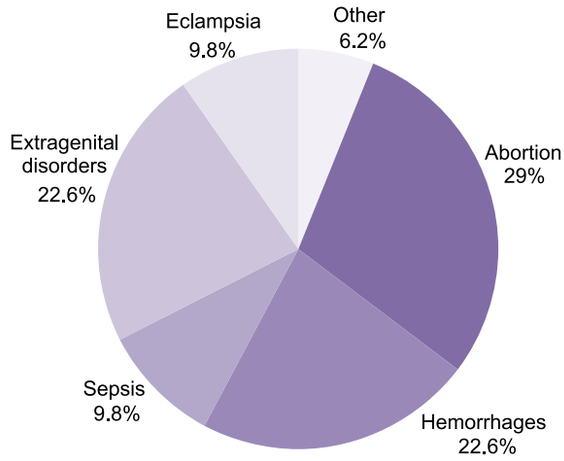
All this indicates the lack of systematic family planning work – women's low awareness of how to prevent an undesired pregnancy, and limited access to modern contraceptives. The Goal is unlikely to be achieved here, but introducing the «safe motherhood» program, including family planning and enhancing the skills of health personnel should help reduce maternal mortality by more than 60%.

KOSTANAY OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – abortions (29.0%),

Second leading cause – extragenital disorders (22.6%) and hemorrhages (22.6%),

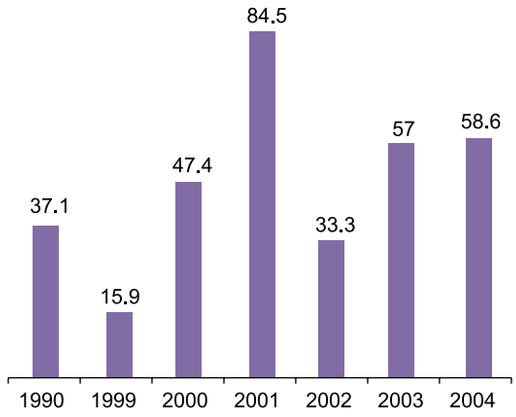
Third leading cause – sepsis (9.8%), eclampsia (9.8%).

Every third death was caused by **abortion**; 44.4% of abortions were medically prescribed during the 25th-26th week of pregnancy because of hypertension complications accompanied by kidney diseases.

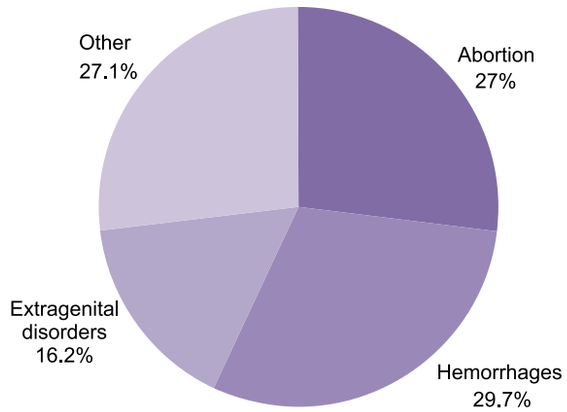
Extragenital pathologies that caused maternal deaths included heart diseases, tuberculosis, and kidney diseases. It is necessary to improve women's health before pregnancy, provide antenatal care and work on family planning, provide women from risk groups with contraceptives, and staff rayon clinics with obstetrician-gynecologists and anaesthetists, who are experts in resuscitation. In distant regions of the oblast within some years, prenatal and postnatal care has been provided by doctors, sent on missions from central clinics. With a holistic approach to solving the problem, the Goal can well be achieved in Kostanay oblast.

KYZYLORDA OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – hemorrhages (29.7%),

Second leading cause – abortions (27.0%),

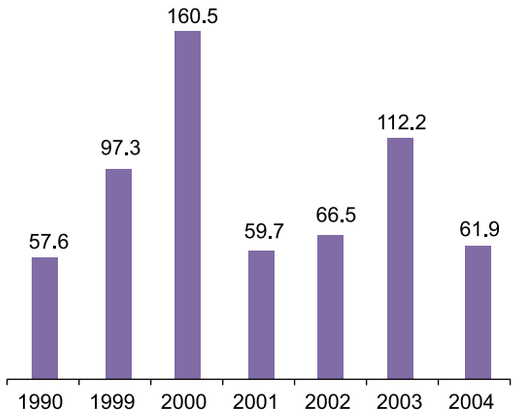
Third leading cause – extragenital disorders (16.2%).

The leading cause of maternal mortality was **hemorrhages** accompanied by severe anemia. Pregnant women's health index in Kyzylorda oblast is the lowest in the country – 10%, which means that only 10 pregnant women out of 100 have no diseases that could be aggravated by pregnancy. Besides widespread anemia, 50% of deaths were due to digestive (gastrointestinal) tract diseases, including infectious hepatitis, in the case of which abortions are medically prescribed. Hemorrhages are also the direct cause of death during pregnancy termination.

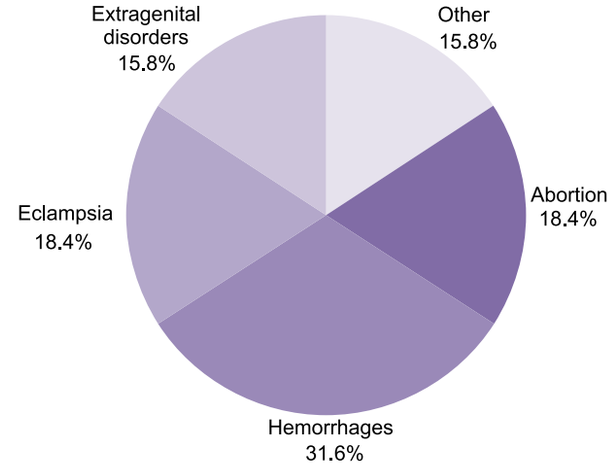
Other causes of death include late diagnostics and the late start of adequate treatment of pregnancy and delivery complications. The main underlying causes of maternal mortality are the low health index of pregnant women, the lack of systematic health improvements for women of reproductive age, unbalanced nutrition, unhealthy lifestyles, inadequate antenatal care, insufficient family planning services, specialists' inability to provide emergency help, and the lack of systematic work with the oblast's rayons. Abrupt fluctuations of the MM ratio are evidence of the lack of scheduled and regular work on this issue. The Goal is unlikely to be achieved, as **extragenital diseases** and other causes constitute over 40% of deaths, but reducing the mortality from **abortions** and hemorrhages will allow reducing the rate by almost 60%.

MANGYSTAU OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – hemorrhages (31.6%),

Second leading cause – eclampsia, abortions (18.4% each),

Third leading cause – extragenital disorders (15.8%).

The direct causes of **hemorrhages**, **eclampsia**, and **abortions** were **extragenital diseases**, most of all kidney and blood diseases, which led to pregnancy complications and deaths.

Periodic examinations of women of reproductive age are not properly carried out in the oblast; the health index of pregnant women is low, systematic health improvements are not carried out either before or during pregnancy, and people do not receive information on healthy lifestyles and balanced nutrition.

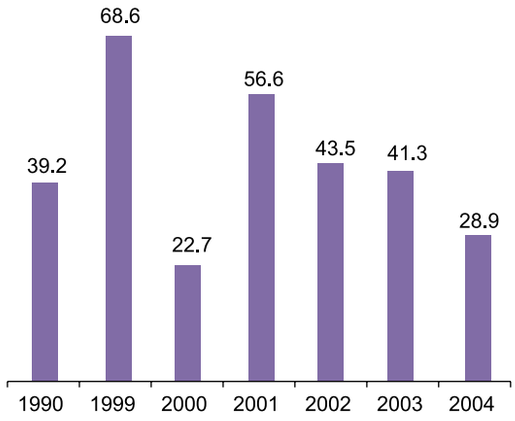
Family planning in the oblast is very poor: during 2004, abortions grew by 1,400; contraceptives coverage is exceptionally low (10% against the national average of 38.5%), and a large proportion of abortions are medically prescribed and carried out at the late stages of pregnancy.

There are very few obstetrician-gynecologists in the oblast – 10.1 per 1,000 births (the national average is 13.1). Moreover, there are few specialists with high qualifications.

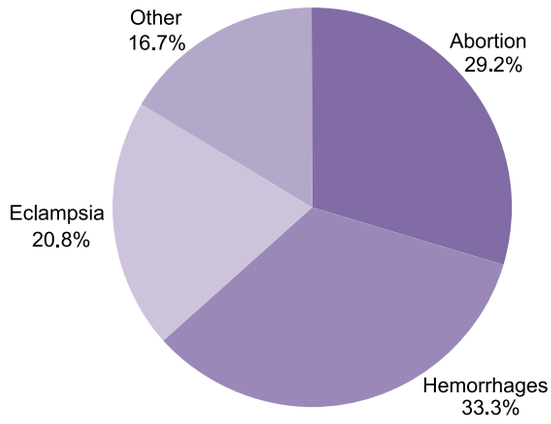
It is necessary to conduct full examinations of women periodically and improve their health. It is also essential to address the issues of adequate family planning and the availability of obstetrician-gynecologists. If these problems are solved, the Goal is likely to be achieved.

PAVLODAR OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – hemorrhages (33.3%),

Second leading cause – abortions (29.2%),

Third leading cause – eclampsia (16.7%).

Hemorrhages are the leading cause of mortality due to pregnancy complications accompanied by kidney disorders, and in two cases massive blood losses occurred during deliveries at home. Deaths from abortions are the second most frequent in the oblast. The direct causes of death were sepsis during miscarriages and medically prescribed terminations of pregnancy. The underlying causes of mortality in the oblast were unsatisfactory antenatal care, lack of family planning, low access to modern contraception, and delayed surgical treatment in cases of hemorrhages and sepsis.

Every third maternal death in the oblast was caused by **abortion** – the termination of pregnancy before 28 weeks of gestation.

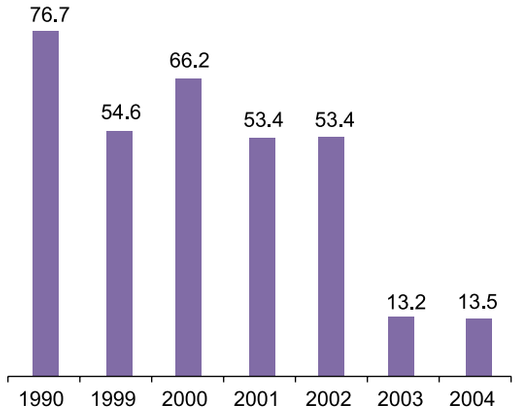
All women died in the oblast and city clinics. Underlying causes of death were sepsis and, in one case, extragenital pathology.

Sepsis as a cause of maternal mortality in cases of miscarriage indicates that women were not prepared for pregnancy, that inflammation centers are not detected and cleansed, and that the health of women with extra genital pathologies is not being improved. The main causes of deaths before 28 weeks of gestation were the lack of systematic work done with women of reproductive age on preventing undesired pregnancies and low access to information on modern contraception technologies.

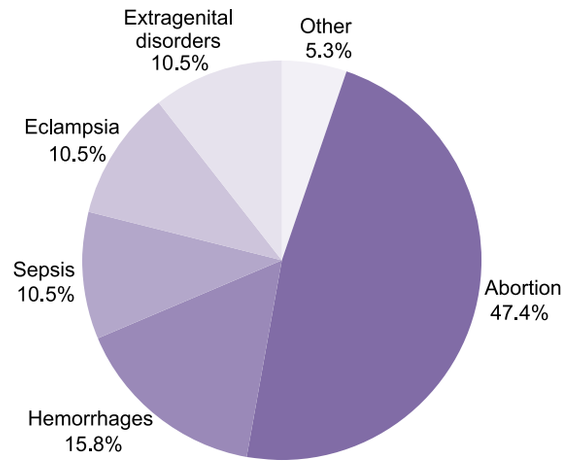
In Pavlodar oblast, it is necessary to conduct full examinations of women of reproductive age periodically. It is also necessary to work on preventing miscarriages, to provide appropriate treatment for women with extragenital and infectious pathologies, to provide family planning services, to prevent counter-indicative pregnancies among women with extragenital disorders (leucosis), to make available the information on modern contraception technologies, and to ensure that timely decisions on pregnancy termination are made before 28 weeks of gestation. Achievement of the Goal is likely should the above measures be implemented.

NORTH-KAZAKHSTAN OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – abortions (47.4%),

Second leading cause – hemorrhages (15.8%),

Third leading cause – extragenital disorders, sepsis and eclampsia (10.5% each).

The leading cause of maternal mortality in the oblast is the termination of pregnancy before 28 weeks of gestation. In 55% of cases, death was caused by sepsis during the termination of pregnancy for social reasons and criminal abortions. This indicates that primary healthcare services do not pay sufficient attention to family planning, and systematic work on preventing undesired pregnancies is not carried out; there is a lack of information on modern contraception, and decisions on termination of pregnancy during the late term are made with delay.

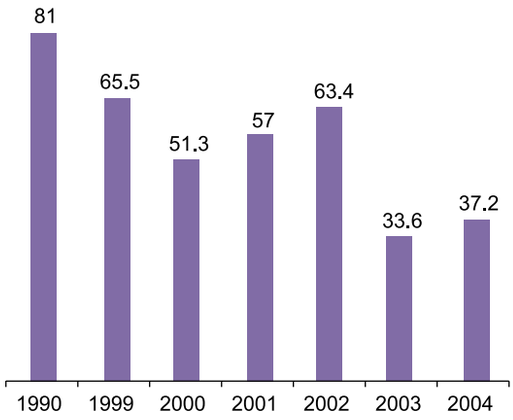
There were 36.8 abortions per 1,000 women of reproductive age in the oblast (2003) against the national average of 29.5, or 92.5 abortions per 100 births against the national average of 51.1; that is, there were 93 abortions per 100 childbirths in the oblast. The birth rate was 12.8 (in 2003) per 1,000 population, and the natural increase had a negative value (-1.2).

Ambulatory (and polyclinic) departments of obstetric facilities do not properly carry out activities to prepare women for pregnancy, eliminate the chronic inflammation centers, and prevent the further spread of infection (inflammation). The preparedness of obstetric departments to provide emergency help in case of hemorrhages and septic complications during pregnancy interruptions at the late term is not up to the mark either.

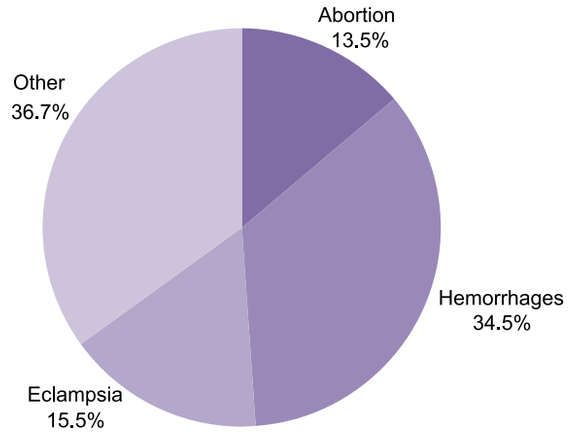
Thus, it is necessary to enhance the family planning services in North-Kazakhstan oblast, to introduce modern contraception technologies, to improve the health of women with extragenital disorders, to reorganize the work of gynecologic departments in obstetric services for better provision of emergency help in cases of hemorrhages and septic complications, and to enhance professional skills of obstetrician-gynecologists. Provided that a complex approach to solving the problem is taken, the Goal will possibly be achieved.

SOUTH-KAZAKHSTAN OBLAST

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – hemorrhages (34.5%),

Second leading cause – eclampsia (15.5%),

Third leading cause – abortion (13.5%).

Every third maternal death in the oblast was caused by **hemorrhage**. The direct causes of hemorrhages were uterus atonia in the postnatal and post-surgery period accompanied by the severe extragenital pathology of the kidneys and liver. Almost all women had severe anemia – 2-2.5 times below the norm, and 57% of women who died from hemorrhages had had children before.

All cases of **eclampsia** were accompanied by severe kidney pathologies, while most abortions were carried out because of extragenital disorders.

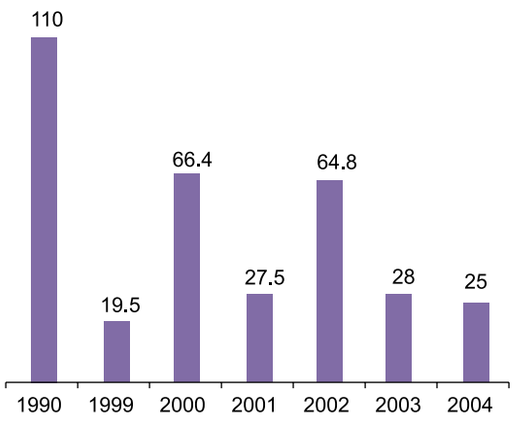
It follows then, that the health index of pregnant women in the oblast is very low; there is a high prevalence of anemia and extragenital disorders, and the work on family planning and improving women's health is of unsatisfactory quality. The large proportion of multiparae women among those who died indicates that the intergenetic interval between pregnancies is not observed.

The analysis of pregnancy interruptions due to medical reasons has revealed that in half of the cases pregnancy was counter-indicative in the first place.

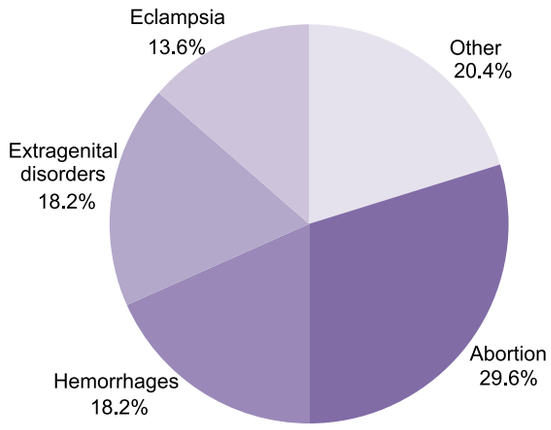
Maternal healthcare should become a priority in this oblast. It is necessary to address a number of social issues to raise the living standard of women and to solve the problems of balanced nutrition, health improvement, antenatal care, and the provision of contraceptives, which are needed in order for the intergenetic interval between pregnancies to be observed. Furthermore, it is necessary to enhance the professional skills of doctors in rayon clinics and to ensure the availability of emergency consultations for patients with severe diseases. If possible, a helicopter should be acquired for the oblast perinatal center for air medical service. Achievement of the Goal is unlikely due to the prevalence of extragenital diseases, but it is quite possible to reduce maternal mortality in the oblast by more than 60%.

ALMATY CITY

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – abortions (29.6%),

Second leading cause – hemorrhages, extragenital disorders (18.2% each),

Third leading cause – eclampsia (13.6%).

Every third maternal death in Almaty was due to **pregnancy interruption** at the late term. The main causes of mortality were **obstetric hemorrhages** and **extragenital pathologies** (infectious hepatitis, kidney leucosis, and cerebral-vascular diseases). In 50% of cases, pregnancies were terminated for medical or social reasons.

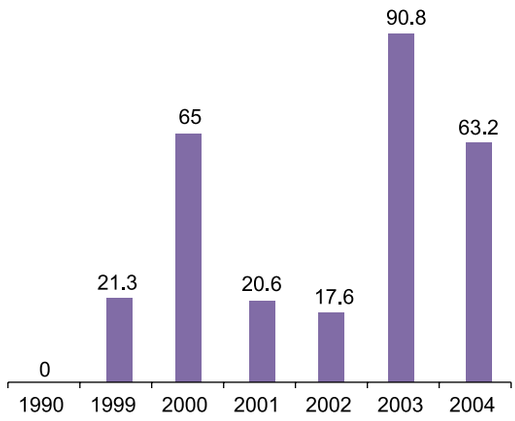
The underlying cause of maternal mortality was inadequate care provided by antenatal clinics (gynecological consultations) to women of reproductive age suffering from extragenital diseases both before and during pregnancy. This insufficient care has led to terminations of pregnancy. Women's health is not being improved before pregnancy, especially in cases of blood, kidney, and liver diseases, which lead to eclampsia and pregnancy termination.

Women of reproductive age in Almaty should periodically pass full examinations before and during pregnancies. It is necessary to provide proper treatment for women with extragenital pathologies. It is also essential to provide family planning services, to introduce modern contraception practices and make them available to the general population, and to prepare gynecological clinics to render emergency help in cases of massive obstetric hemorrhages.

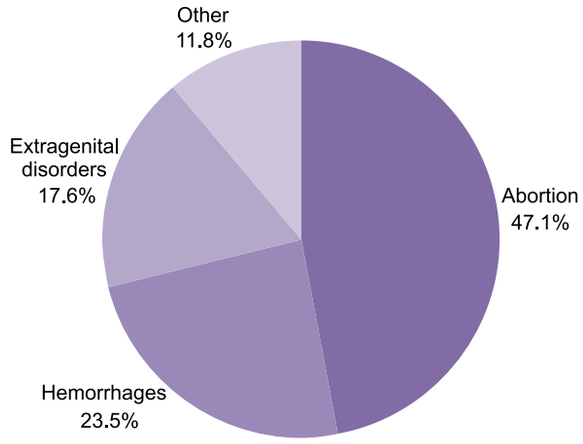
If all of the above-listed conditions are fulfilled, the Goal is likely to be achieved even when unmanageable factors prevail.

ASTANA CITY

Maternal mortality dynamics



Main causes of maternal mortality



Leading cause – abortions (47.1%),

Second leading cause – hemorrhages (23.5%),

Third leading cause – extragenital disorders (17.6%).

The direct causes of maternal deaths from abortions in Astana were sepsis resulting from criminal interruption and hemorrhages during the medically prescribed abortions. The main causes of deaths from abortions in the city were the lack of family planning activities, the limited access to safe abortions, and the low awareness of modern contraception technologies. Taking into account the high prevalence of **abortions** in Astana, it is necessary to carry out information and education campaigns on abortion complications and modern contraceptives, improve the work of family planning offices, and purchase contraceptives for free distribution among the socially vulnerable groups.

The second leading cause of maternal mortality in Astana in 1999-2004 was **hemorrhages** (23.5%). In 50% of cases, deaths were caused by postnatal uterus atonia among women who previously had had children, and the other 50% of deaths were due to pre-eclampsia and eclampsia accompanied by kidney disorders and moderate anemia.

The third leading cause of maternal mortality was **extragenital diseases** – 17.6% (3 cases). There were two cases of digestive organ disorders (infectious hepatitis), and there was one case of a respiratory disorder (pneumonia).

Because of the insufficient availability of obstetrician-gynecologists, which in turn resulted from the sharp increase in the population, in all cases of death there had been neither dynamic antenatal observation nor access to antenatal care. For every case, there was a late diagnosis of pathologies and delayed enrollment to the obstetric facilities. To reduce maternal mortality, it is necessary to open additional gynecological/antenatal consultations and a maternity home, ensure access to antenatal and inpatient services, ensure the continuity of work of obstetrician-gynecologists and physicians for the early detection and appropriate treatment of extragenital disorders, and carry out a large-scale campaign on family planning. Should all of the above be implemented, it will be possible to achieve the Goal.

Main factors influencing the progress of MDG 5

The large number of abortions (over 170,000 annually) indicates the lack of effective state policy on reproductive health. Rather than increasing access to free abortions, government efforts should be directed at the development of healthcare and social services such as family planning, which will help some people prevent undesired pregnancies, allow others to have longed-for children, and permit others to postpone pregnancy till their overall health status is improved.

The key activities for achieving this target will primarily be directed at the protection and improvement of health, especially reproductive health. To this end, it is necessary to ensure access to consultations, education, and family planning services. Another needed step is to develop and implement a policy on reducing the number of abortions. Taking precautions to prevent undesirable pregnancy would form a part of this policy. Women should be provided with the means of regulating their fertility through the following:

- ensuring, through legislation, that all women and girls have access to high quality sanitary education on sexual life and childbirth, safe motherhood and breastfeeding, nutrition, abuse of psychoactive substances, and adverse environmental conditions that can have a life-long effect on their health and well-being. The provision of such an education should not depend on commercial interests;
- state support for such measures as: a) the development and introduction of reproductive function restoration methods and conducting research in this sphere; b) maternal mortality research, auditing and monitoring; c) the study of biomedical, epidemiological and sanitary aspects of diseases that have a strong and specific impact on women's health, such as breast cancer, genital infections, STIs, and HIV/AIDS.

State expenditures on maternal and child healthcare

As a result of the economic recession in 1992-1996, state expenditures on healthcare decreased by more than half. Analysis of the state budget expenditures shows that healthcare spending remains low in spite of the economic growth of recent years. According to the Agency on Statistics, GDP expenditures on healthcare in the past several years were as follows:

Table 5.2. State expenditures on healthcare in the Republic of Kazakhstan

	1998	1999	2000	2001	2002	2003
Billion tenge	26.0	44.8	54.3	62.3	71.1	89.78
% of GDP	1.5	2.2	2.1	1.9	1.9	2.0

Source: Agency on Statistics of the Republic of Kazakhstan

Restructuring and optimization of the healthcare system were conducted at the early stage of transition because of the economic recession and budget deficit. This has negatively affected the quality of and access to health care, especially for women and children

Primary healthcare (PHC) is the main force in achieving a good health status and ensuring access to healthcare in the society. However, the number of PHC facilities in 2002 was almost half as much as it was in 1990 (1,005 vs. 1,805). In 1990, there were 641 full-scale gynecological (antenatal) consultations throughout the country, while by 2003, only those in Almaty remained. The number of hospital beds per 10,000 people decreased from 140 in 1991 to 75 in 2003, and the number of beds for pregnant women decreased from 53.4 (in 1991) to 37.0 (in 2003) per 1,000 births.

Similar trends can be observed in the numbers of doctors and middle healthcare personnel. During 1991-2002, the number of doctors of all specializations decreased from 39.6 to 36.1 per 10,000 population, and the number of middle healthcare personnel – from 121 to 76 per 10,000 population. Because of low wages, many skilled healthcare specialists have either moved to private clinics and facilities or changed their occupations altogether. According to the Agency on Statistics, the average monthly salary of people employed in healthcare in 2003 was 11,526 tenge (US$76). Such a low salary forces them to work double shifts and take on a heavy workload.

Access to and quality of healthcare services

Maternal mortality undoubtedly depends on the access to healthcare and its quality. According to RSRCMCHP, among those who died in 2001, the proportion of patients (pregnant women?) enrolled in the hospitals in severe condition was 83.1%.

It was found that in 55.2% of cases, **the delayed hospitalization** of women with pregnancy complications was due to the lack of transportation, its high cost, and the remoteness of healthcare facilities. The Study of the Accessibility and Quality of Healthcare[98], conducted by UNICEF and UNFPA in 2003, revealed that average expenses on transportation to PHC facilities in rural areas are 4.5 times higher than in the cities and amount to 330 tenge. Transportation to maternal (obstetric) departments of central rayon clinics or oblast clinics is three times as expensive or more.

Unfortunately, women in Kazakhstan are not accustomed to and do not have a continuous **demand for reproductive health services of a prophylactic kind**. As the survey revealed, women seek medical help only in cases of urgent need and severe pathologies. Among the surveyed women, 62.9% consult gynecological clinics, 18.4% consult family doctors, and 11.8% apply to feldsher posts, which shows that women do not practice safe (self-preserving) behavior and do not take their health status seriously.

Access to information also influences the morbidity and mortality rates. The survey showed that doctors had not informed the pregnant women well enough about the signs of pregnancy complications and the measures needed in such cases. Only 58.4% of respondents said they had had consultations on this issue. There is also a significant disparity between rural and urban patients: 49.3% of patients in rural areas had consultations compared to 67.4% in the cities.

Healthcare personnel should conduct awareness raising and preventive measures systematically and not ad hoc – only in this case will it be possible to achieve a positive effect. At present, a gynecologist responsible for one district oversees 3,300 women of reproductive age, and from 100 (Northern region) to 250 (Southern region) of them are pregnant women registered on dispensary books.

About 10,000-12,000 people are registered in the family ambulance stations, which receive per capita **financing**. This should mean that healthcare personnel are interested in having more patients to receive income, yet the quality of work is deteriorating. Moreover, healthcare reform policy has led to the elimination of full-scale gynecological consultations/clinics – only obstetric offices remain, and adequate examinations, preventive measures, and information dissemination are absent.

According to the survey results, over 88% of women said they received **antenatal care during pregnancy**. Of the 64 respondents who did not, 42 (65.6%) said they didn't need it, and 10 (15.6%) claimed they did not know it was necessary. Four women said they had no money for such care, and four more lived too far away from facilities that could provide it.

If there was a threat of pregnancy complication, healthcare personnel advised the patients where they should apply. Recommended facilities were mostly gynecological consultations (48.9%) and maternity homes (39.6%), the latter usually recommended in rural areas (46.5%), as the middle unit, gynecological consultation, is not available there.

Most women received antenatal care from gynecological consultations (58.8%). However, there was a great disparity between urban (89.2%) and rural (29.3%) areas. Rural patients usually attended feldsher posts (30.1%), and from 15% to 20% said they visited family doctors, village (or oblast) clinics, and maternity homes.

A number of survey questions were directed at **the evaluation of the observance of examination and treatment protocols in cases of pregnancy complications.** In most cases of anemia, doctors explained its origin (81.4%) and prescribed ferruginous medications (92.9%). However, only 75.7% of women followed the prescription, and a special diet was recommended only to 47.1% of the pregnant women. In 65.7% of cases of anemia, women were directed to take a blood test, and only 27.1% of respondents received an explanation about the kinds of pregnancy complications that could result from anemia.

National policy

The Mother and Child Health Protection program, developed according to the Kazakhstan-2030 Strategy, provides for the allocation of 27,968,255 thousand tenge, the improvement of the physical condition and equipment of obstetric facilities, and the installation of modern medical equipment and instruments. It also assigns priority to childhood and obstetric care; the financing of child and obstetric facilities is especially underscored in program implementation.

The issues of maternal and child healthcare are highlighted in the State Program Health of the Nation for 2003-2005. Some of the program's key goals are to provide the necessary medication to pregnant women and those who had children recently, to gradually increase the financing of the guaranteed free-of-charge healthcare services, and to examine the pregnant for detection of intrauterine and sexually transmitted infections.

The Plan of Actions on improving the perinatal care in Kazakhstan for 2004-2010, approved in 2003, envisages enhancing the organization and management of perinatal services, improving the physical condition of obstetric facilities, and developing common principles of perinatal care.

The State Healthcare Reform and Development Program for 2005-2010 divides the responsibility for health protection between the state and the citizen, provides for the shift to international healthcare practices with a central role for PHC, and strengthens maternal and child healthcare. Taking into account the low health index of women of reproductive age, regular prophylactic examinations will be conducted starting in 2005; a universal examination of women aged 20-34 years will be carried out in 2005, and of women aged 15-19 and over 35 – in 2006. The gradual implementation of this program will allow improving the state of reproductive health in the country.

[98] UNICEF and UNFPA study on accessibility and quality of healthcare, 2000-2003

Conclusions

The answer to the question above is complex and manifold. The dynamics of maternal mortality ratio has a downward trend: from 75.7 in 1990 to 39.6 per 100,000 live births in 2004. However, achieving the 19.0 ratio, according to the Ministry of Health baseline, or 13.8 ratio, according to the Agency on Statistics by 2015 is **hardly possible** without additional efforts aimed at the development of the healthcare system and raising people's living standard.

Since the maternal mortality ratio is an integral indicator that characterizes the general health status in the society, it is not limited to women of reproductive age. To achieve MDG 5 it is necessary to raise the living standard of all people, reduce poverty, improve the environment, improve women's health status and nutrition, enhance the social protection system, develop rural areas, reduce negative trends in demographic and migration processes and finally, reduce morbidity by improving the quality and access to healthcare and people's attitudes to their own health.

A significant number of maternal deaths can be prevented. Measures needed to prevent deaths from their main causes are well known and may be implemented even with a lack of resources. The key success factors are: providing care and support during pregnancy, delivery, and the postnatal period, paying special attention to adequate care and preparation for the delivery process; providing support to both mother and child after birth; and ensuring the opportunity to receive quality service close to the place of residence.

Services should be provided by health personnel who have obstetric care skills and are able to both detect complications and resort to appropriate specialized help, including stabilizing the condition of mothers and newborns to ensure their safety until they're transferred to the next level of health care. These specialists should also have the sufficient qualifications to work with women and local communities' representatives on main health protection issues, such as healthy lifestyles, nutrition, breastfeeding, and the prevention of infections.

Improving the health of mothers and children is possible even when resources are severely limited, but taking only one of the needed measures is not in itself effective. Maternal and child mortality rates can be significantly reduced through effective measures that do not require large spending. Many countries that suffer from a lack of resources have achieved progress in reducing maternal mortality.

Maternal and child health facilities are the basis of public health services. Healthcare facilities for pregnant women are often the primary point of application for families and local communities, e.g. for the prevention and treatment of STIs, HIV, and malaria; for the introduction of family planning and immunization; for recommendations on nutrition; and for the implementation of other healthcare programs. Strengthening healthcare services will positively influence the health protection of mothers and children as well as other branches of healthcare. This can be achieved through increasing the effectiveness of healthcare facilities that provide basic medications and have stable personnel (such as local facilities, clinics, and hospitals), and through the establishment of an effective system of providing specialized care, transportation, and communication, which would ensure that mothers and children receive the help they need, especially in cases of pregnancy complications.

The data shows that the status of maternal and child health protection cannot be enhanced through the implementation of half-measures, and that progress is mostly achieved through the consistent improvement of complex public health systems that provide care and support to every mother and child.

Key aspects of reducing maternal mortality are:

- Women's health status and nutrition;
- Family planning and maternity services;
- Obstetric emergency help.

Priority measures for reducing maternal mortality should be:

- Implement programs on nutrition, access to drinking water, and improvement of the environment;
- Integrate programs on reproductive health and family planning, including services and information campaigns;
- Improve the condition of rayon clinics and PHC facilities;
- Enhance the professional skills of health personnel;
- Develop staffing standards in accordance with «safe motherhood» technologies, taking into account the growing birth rate and low health index of women of reproductive age, so that prophylactic activities are carried out adequately;
- Increase the number of staff and obstetrician-gynecologists in the family ambulances and central rayon clinics, and take measures on the state level to keep doctors in rural areas through providing benefits and increasing wages;
- Allocate special transportation for obstetric facilities on the level of central rayon clinics and gynecological consultations. This will improve the timely medical attendance of pregnant women in the high risk groups at home;
- Mobilize local communities and authorities to reduce maternal mortality;
- Promote gender equality as a factor that indirectly influences the health of mothers and children.

Connection with other MDGs

As a medical, biological, and social issue, the improvement of maternal health and the reduction of maternal mortality are closely related to other Millennium Development Goals.

Poverty and low household income may be the reasons for inadequate nutrition, development of chronic illnesses, reduction of the reproductive health index, and the lack of opportunity to observe the work and rest balance during pregnancy.

One of the most important millennium goals is to promote gender equality and the empowerment of women, which will ensure women's full participation in the life of society and in decision making related to reproductive health, healthcare, and education. Gender equality will allow reducing psychological stress and emotional tension among women, which should have a positive impact on safe behavior and joint responsibility for health.

Tuberculosis and HIV/AIDS incidences and environmental degradation influence reproductive health and create conditions for pregnancy and delivery complications.

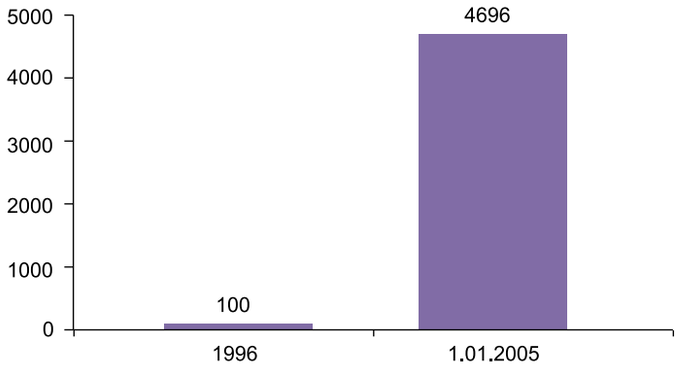
Therefore, improvement of maternal health is closely related to other MDGs and is heavily influenced by them. Solving the problems of poverty, imbalanced nutrition, gender equality, and environmental sustainability will help reduce maternal mortality.

MDG 6 Combat HIV/AIDS and Tuberculosis

Target 7:

Halt, by 2015, and begin to reverse the spread of HIV/AIDS

Cumulative number of reportedly registered HIV/AIDS cases in Kazakhstan



Significance for Kazakhstan

The exceptional character of the HIV/AIDS pandemic is defined by its ever-growing expansion and long-term impact along with social barriers that hamper counteractive measures. According to WHO and UNAIDS estimates, there are about 40 million people living with HIV in the world, and 25 million have already died of AIDS.

In the most affected countries, HIV/AIDS already causes depopulation. The deaths of economically active people of reproductive age exacerbate the problems regarding orphans and the social neglect of elder citizens who are no longer able to work. At the expense of other branches of healthcare as well as the branches of science, education, culture, social protection, and security, state budgets are being redistributed to provide assistance to people living with HIV/AIDS (PLWHA). HIV/AIDS aggravates existing poverty and creates new poverty, which is caused by the disability of the breadwinner, expenses on treatment and care, and funerals. The HIV/AIDS epidemic slows down economic growth and in a number of affected countries has already caused stagnation. The cause of a new global crisis, this epidemic has transcended the boundaries of medical problems and become a human development problem[99].

Kazakhstan is still a country with relatively low HIV prevalence, with an estimated 0.2% of the population aged 15-49 living with HIV/AIDS. However, the history of Sub-Saharan African countries proves that within 20 years HIV prevalence among adults and adolescents could increase from less than 1% to 20-30%[100]. Essential preconditions for the rapid spread of HIV, with wide scale drug injection and unsafe sexual behaviours among them, are in place in the country.

Kazakhstan understands the significance of HIV/AIDS as a development problem. The country has signed the Declaration of Commitment on HIV/AIDS, adopted by the UN General Assembly in 2001. In 2002, Kazakhstan signed the CIS Program on Immediate Measures to Counteract HIV/AIDS. HIV/AIDS counteractive measures are integrated in the social policy section of the Strategic Plan of Development of Kazakhstan till 2010. Combating HIV/AIDS is an important part of the State Program of Healthcare Reform and Development for 2005-2010.

[99] 2004 Report on the Global AIDS epidemic, UNAIDS, Geneva, 2004.

[100] AIDS in Africa: Three scenarios to 2025, UNAIDS, Geneva, 2005.

Target 7 status in Kazakhstan

The first case of HIV was registered in Kazakhstan in 1987. According to data based on case reporting[101], the cumulative number of HIV cases registered in Kazakhstan by January 1, 2005 was 4,696 persons, including 231 people with AIDS, 187 of whom have died[102]. The growth of cumulatively registered HIV cases since 2000 has been as follows: year 2000–100, 2001 – 187, 2002–245, 2003–297, and 2004–349. During 2004, 699 new cases of HIV were registered in Kazakhstan.

According to the data on applications to healthcare facilities, HIV/AIDS prevalence in Kazakhstan as of January 1, 2005 was 31 per 100,000 population. The number of people who are HIV-positive varied widely from region to region. The highest prevalence rates were registered in Pavlodar (118 per 100,000 population, 882 cases in total) and Karaganda (108 per 100,000 population, 1,431 cases in total) oblasts and in the city of Almaty (48 per 100,000 population, 569 cases in total). The smallest number of HIV cases was reported in the oblasts of Kyzylorda (2 per 100,000 population, 10 cases in total), Atyrau (6 per 100,000 population, 29 cases in total) and Mangistau (8 per 100,000 population, 28 cases in total). The place of highest concentration of HIV cases in Kazakhstan is the town of Temirtau in Karaganda oblast (689 per 100,000 people, 1,167 cases in total).

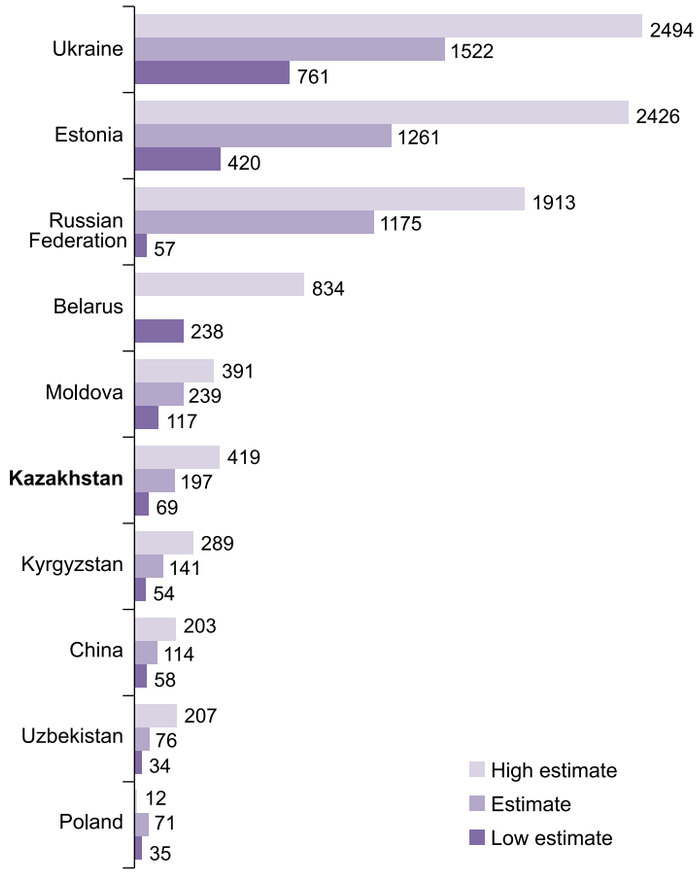
Among the number of people registered as HIV-positive in the country, 77% are injecting drug users (IDU), 76% are men, 72% are unemployed, and 64% are people of 15-29 years of age. Twelve children contracted HIV from their mothers during pregnancy or delivery. In the past years, the proportion of HIV cases reportedly due to sexual contact has been steadily increasing, reaching 29% in 2004 (compared to 5% in 2001). At the same time, the proportion of women among the people registered as HIV-positive has grown, too, from 19% in 2000 to 32% in 2004.

The system of HIV cases reporting cannot provide a full picture of the epidemiological situation as it is based on the detection rate, which, in its turn, depends on applications to medical facilities. At the early stage of infection, most people with HIV have no reason to seek healthcare services during the provision of which they could be tested for HIV. Moreover, the case-reporting system is oriented towards the general and easily accessible population, while the rate of HIV reaches highest figures among the isolated and marginalized groups that are not easily accessible for testing. These groups include IDU, commercial sex workers (SW) and men who have sex with men (MSM), or precisely those sub-populations whose sexual and injecting behavior is conducive to HIV transmission. Fearing roll-call registration and possible prosecution and/or social isolation due to both group affiliation and the detection of an HIV-positive status, these groups prefer not to be tested for HIV if this involves personal visits to healthcare facilities. So, HIV cases are obviously underreported, with deviance among regions. Year by year deviance largely depends on local policies and the practices of detection of HIV cases.

In this regard, special attention should be paid to the results of sentinel surveillance. Results were obtained among the sentinel groups in 2004 by the Republican AIDS Center with the technical assistance of the CDC. The groups include those mentioned above and also pregnant women, the data on whom can be extrapolated to the general population[103],[104].

The results of sentinel surveillance have confirmed that HIV prevalence is highest among IDU, which with a 95% probability, lies in the interval between 3.6% and 6.0% (Table 6.1). The relative risk of HIV infection is 50 times higher for IDU than for pregnant women (i.e. the general population). HIV is also

Graph 6.1. Estimated HIV prevalence per 100,000 population aged 15-49 in several former Soviet and neighboring countries[105]



[101] All data on registered cases of HIV presented hereafter is provided by the Republican AIDS Center.

[102] The relatively small number of registered AIDS cases is due to the difference in national and internationally- accepted definitions of AIDS. For example, according to national definition, the combination of HIV and tuberculosis is considered AIDS only when there are less than 200 lymphocytes with CD 4 receptors in 1 micro-liter. According to the CDC, the combination of HIV and tuberculosis is enough to diagnose AIDS, regardless of whether the patient contracted HIV before or after tuberculosis. Since the start of registration in Kazakhstan, about 500 people who were HIV-positive died from various causes (including tuberculosis and malignant neoplasms, which are the consequence of immunodeficiency).

[103] Sentinel surveillance should ideally be based on the survey of random representative samples of the target groups, the results of which are extrapolated to the general population.

[104] Guidelines for second generation HIV surveillance, WHO, UNAIDS, Geneva, 2000

[105] Calculated from the estimated numbers of PLWHA aged 15-49 placed in the 2004 UNAIDS Report on the Global AIDS Epidemic, UNAIDS, Geneva, 2004 and most recent data on the numbers of the population of 15-49 years of age placed in UNFPA country profiles

Table 6.1. Estimation of the number of people who lived with HIV/AIDS in Kazakhstan in 2004

Groups of people	Number of people in the group	HIV prevalence			Number of people with HIV: estimated, min. and max.
		In surveyed samples	In the general number, 95% probability interval		
			Min	Max	
Injecting drug users	140,000	4.7%	3.6%	6.0%	6,600,(5,750...8,400)
Commercial sex workers (excluding IDU)	15,000	1.7%	0.5%	2.9%	250,(50...450)
Men who have sex with men	100,000	0	0	3.6%	0,(0...3,600)
Prisoners	50,000	1.3%	0.8%	2.0%	650,(400...1,000)
Other adults and teenagers aged 15-49	7 000,000	0.1%	0	0.4%	7,000,(0...28,000)
				Total:	**14,500, (5,850...41,400)**

concentrated among SW: in the surveyed sample, prevalence was 3.7%. Such high rates for SW are due to the widespread injection of drugs in this group, the frequency of which in the surveyed sample was 16.5%. Among the SW who did not inject drugs, HIV prevalence was 1.7%, which is still 20 times higher than the prevalence among the general population. The failure to detect people who are HIV-positive among MSM was probably due to the fact that the surveyed sample was too small, as the group is hard to access. However, a number of HIV cases have been registered in this group in Kazakhstan before. The relatively high prevalence of HIV among the incarcerated population (1.3%) is probably due to the large proportion of IDU in this group.

Sentinel surveillance has shown that the epidemic among IDU is still the main driving force of HIV expansion in Kazakhstan, although sexual transmission also plays an important part. Upon extrapolating the data obtained during the survey of sample aggregates from the general aggregate of adults and teenagers, the number of people living with HIV in Kazakhstan was estimated as shown in Table 6.1.

At present, the country is in the concentrated state of the epidemic, when HIV is mostly spread among certain groups (IDU, SW, prisoners, and possibly MSM) and has relatively small prevalence rates in other sub-populations. A disturbing sign indicating the threat of HIV spreading among the general population is its high prevalence among commercial sex workers who potentially transmit HIV to the general population through sexual contact. Another sign of the approaching shift to sexual transmission is the increasing prevalence of HIV among people with typical sexually transmitted infections. The rate grew from 0.01% in 2000 to 0.4% in 2004.

Compared to other countries in the region, especially to neighboring Russia and several post-Soviet countries, HIV prevalence among people 15-49 years of age in Kazakhstan is not so high. However, it is obviously higher than in other Central-Asian countries, such as Kyrgyzstan and Tajikistan[106] (Graph 6.1).

Since 2002, the HIV sentinel epidemiological surveillance supported by UNAIDS and CDC has been accompanied by behavioral and biological surveillance (the so-called second-generation epidemiological surveillance), which, along with detecting the prevalence of HIV, also observes risk behavior and its change over time. The surveillance includes both the surveying of target groups and the measuring of the prevalence of other sexually and blood-transmitted infections associated with unsafe injection (like hepatitis C) and sexual behaviors (like syphilis). These infections are more contagious than HIV and occur earlier in risky behavioral groups.

While in the concentrated state of the HIV/AIDS epidemic, it is important to conduct surveys in sub-populations where HIV is actually spreading at the moment, that is, in the most vulnerable groups. This allows the planning of a targeted response. Halting the spread of HIV among vulnerable groups also means preventing its spread among the general population.

[106] 2004 Report on the Global AIDS epidemic, UNAIDS, Geneva, 2004.

[107] Unless stated otherwise, the data in sub-sections from Injecting Drug Users to Youth is drawn from the «Results of HIV epidemiological sentinel surveillance in Kazakhstan», Republican AIDS Center, CDC, USAID, Almaty, 2005.

Potential of HIV spread in vulnerable groups

Since HIV is transmitted sexually and through injections, the relative risk of infection is by default and is higher among people who use non-sterile syringes, needles and solutions for injections, and/or are sexually active and often change partners. These groups include IDU, SW, and MSM. The probability of HIV transmission is defined by the opportunity to protect oneself from infection rather than by rates of sexual intercourse, changing partners, and injecting drugs. Therefore, although risk groups coincide with vulnerable groups, the risk of and vulnerability to HIV are not synonymous.

Vulnerability to HIV is a result of social conditions that limit or eliminate access to information on HIV/AIDS, healthcare, and means of protection (such as condoms). These conditions include inequality, discrimination, isolation and criminalization, low social status, poverty, etc. To measure the potential of the spread of HIV and to plan an appropriate response, an assessment of awareness and behavioral risks of target groups was conducted during the second-generation epidemiological surveillance[107].

Injecting drug users

The level of awareness of HIV transmission routes among IDU is still insufficient. Of 1,242 IDU surveyed in Karaganda, Pavlodar, Uralsk and Shymkent in 2004, only 47% gave correct answers about HIV prevention, and 59% distinguished between real and false HIV transmission routes.

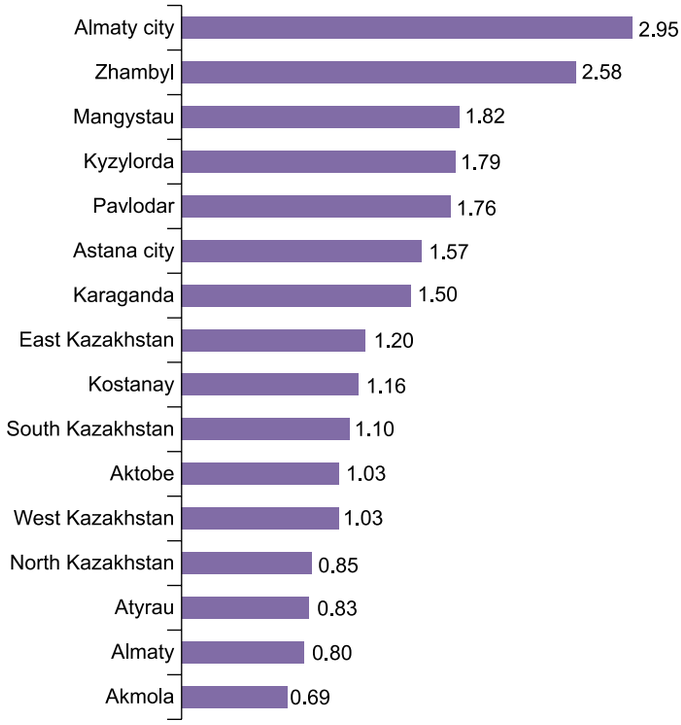
The low level of awareness of IDU is compatible with their unsafe behavior in terms of HIV transmission. According to above-mentioned survey, over the last month, 59% of IDU reported taking drug solutions by their personal syringes from common vials, 21% transferred drug solutions from one syringe of unknown origin to their own, 19% injected drug solutions that were serviced by somebody else without their previous boiling, 17% used other people's syringes for injections, and 9% shared syringes and needles by injecting drugs in a group one after another. Risky behavior among IDU is confirmed by the high prevalence of hepatitis C infection, which was 47% among people who had been injecting drugs for less than a year and reached 68% among those who had been using drugs for eight years.

Only 53.2% of IDU used a condom during their latest sexual contact with an irregular partner, and 5.1% had noticed STI symptoms in the past 12 months. The prevalence of syphilis among IDU was 5.9%, which is quite a high rate and points to unsafe sexual behavior. In addition to this, 15% of women and 9% of men among respondents provided commercial sex services, which, coupled with unsafe sexual behavior, is a major factor of HIV transmission to other groups of the population.

The significance of IDU in the spread of HIV/AIDS is obviously determined by the numbers and growth rate of the group. According to official data based on applications for health services starting from 1991, the number of patients with mental and behavioral disorders due to drug abuse in Kazakhstan increased until 2001 (from 3.6 to 84.2 per 100,000 population). After 2001, there was a decreasing trend of reportedly registered patients of that type (to 61.0 in 2003)[108]. However, the reason for the observed phenomenon could be referred to expansion of the non-governmental health sector, where not all patients are registered. Acceptability, affordability, quality, effectiveness of medical aid, self-assessment of a person as a patient suffering from drug addiction, and simply a person's intention to get aid influence the healthy service-seeking behavior of IDU. That is why the number of reportedly registered cases of drug use does not coincide with the group's real number.

According to a demographic survey conducted upon the request of the Ministry of Healthcare in 2001, the number of people with the inclination to use drugs is estimated at 254,000, or 1.7% of the population[109]. Similar data was obtained during a different survey, led by the National Center for Problems of Healthy Lifestyle Development in 2004[110]. The total number of people who use drugs consistently is estimated at 200,000.

Graph 6.2. Proportion of injecting drug users in the general population in regions of Kazakhstan, %[111]



[108] Living standards and poverty in Kazakhstan. Statistical monitoring, Agency on Statistics of the Republic of Kazakhstan, Expanded UN Theme Group on Poverty Alleviation, Employment and Social Safety, 2004.

[109] Multilevel research on the drug addiction problem in the Republic of Kazakhstan, Agency of social and marketing research «BRIF, Central Asia», Kazakhstan 2001.

[110] Results of the survey on the real situation of drug use in the Republic of Kazakhstan, the Ministry of Healthcare, National Center for Problems Threatening Healthy Lifestyle Development, Republican Research Practical Center for medical and social problems of narcotism, Republican Research Practical Center for psychiatry, psychotherapy and narcology, Republican AIDS Center, Almaty, 2004.

[111] Calculated from the data of the actual numbers of drug users placed in the report «Results of the survey on the real situation of drug use in the Republic of Kazakhstan», (Ministry of Healthcare, National Center for Healthy Lifestyle Development, Republican Research Practical Center for medical and social problems of narcotism, Republican Research Practical Center for psychiatry, psychotherapy and narcology, Republican AIDS Center, Almaty, 2004,) with approximation that 70 percent of drug users inject drugs based on the same report and numbers of the population aged 15-49 in each region.

It is safe to assume that the potential of the HIV epidemic's transition to the general population in each region will be proportionate to the share of IDU there. Graph 6.2 demonstrates the proportion of IDU among the general population (aged 15-49) in regions of Kazakhstan. The highest proportions of IDU among people aged 15-49 are in the city of Almaty city, and Zhambyl and Mangystau oblasts, while the lowest are in Akmola, Almaty, and Atyrau oblasts.

Thus the potential of HIV expansion among IDU in Kazakhstan remains very high. The large size of the IDU group, the stable inflow of new people and, most of all, widespread unsafe injecting and sexual practices make up for a high probability of HIV transition to the general population and a speeding up of the epidemic's transformation from a concentrated to a generalized state.

Sex workers

The level of awareness of HIV prevention measures among SW surveyed in Karaganda, Pavlodar, Uralsk and Shymkent (n=564[112]), was 78%, and of HIV transmission routes – 40%. The frequency of condom use during sexual contacts with commercial partners was 89%. At first sight, these figures seem high enough, yet are not sufficient to draw conclusions on safe sexual behavior among SW, because the prevalence of syphilis in this group was as high as 25.4%. Only 47% and 61% of SW correspondingly use condoms in sexual intercourse with non-commercial regular and irregular partners.

According to a rapid assessment based on a calculation of the number of SW at their gathering points on the streets, in hotels, and saunas, there are 20,000 sex workers in Kazakhstan[113]. On the average, one sex worker has 600 sexual contacts a year, making it almost 12 million a year for all SW, which is about 4 contacts for every man of reproductive age in the country.

Based on these findings, one could ascertain a high potential for HIV transmission to the general population from SW as soon as the HIV prevalence rate among them becomes significant. Widespread unsafe drug injecting among SW accelerates that process.

Men who have sex with men

According to the survey of 100 MSM that was conducted in Karaganda in 2004, only 15% were adequately informed about methods of protection from HIV, and only 50% correctly identified methods of HIV transmission. At the same time, 24% used a condom during sexual contact with a regular partner, 77% during contact with an irregular partner, and 100% during contact with a commercial partner. 7% of MSM in the sample had noticed signs of STI in themselves during the last month. The prevalence of syphilis in the sample was 1%.

The survey of a different MSM sample in Almaty in 2004 (n =325)[114] showed that over 95% of respondents were aware of the methods of HIV transmission. At the same time, only 16% said they always used a condom during penetrating sex, while 32% never used one at all. The average number of sexual partners during the last 6 months was 4 with a variation from 1 to 90. 75% of MSM who answered the appropriate question during that period of time had sexual contacts both with men and women. 10% of MSM in the sample had noticed signs of STI in themselves during the last month, and the prevalence of syphilis was 1%, as in the mentioned sample.

It is necessary to note that MSM are the hardest group to reach, and both above-mentioned samples were non-randomized. However, the surveys show that the sexual behavior of MSM is rather unsafe, and from the epidemiological point of view, this group may play an important part in HIV transmission both within the MSM and to the general population. It is known that the spread of HIV among MSM is the driving force of the epidemic in USA, Canada, and Western Europe[115]. Taking into account the data that about 2-4% of the male population in industrial countries is actively homosexual, the number of MSM in Kazakhstan is estimated at 100,000 people[116].

Prisoners

Of the 1,550 prisoners surveyed in 13 penitentiary institutions in 2004, 35% had antibodies to hepatitis C virus, which is an indicator of unsafe injecting practices. That the prisoners neglected safe sexual practices is confirmed by the high prevalence of syphilis, which, according to the results of serological surveillance, was 9.4%. The proportion of respondents who assessed that at least one-half of all prisoners inject drugs was 39%, and that at least one-half of prisoners practice homosexual contacts with other prisoners, was 24 percent.

The data leaves no doubt that injecting drug use and sexual contacts between men are widely practiced in penitentiary institutions. At the same time, more than 95% of respondents in prisons knew that HIV was transmitted through non-sterile syringes and needles and unprotected sex. Over 85% were aware of HIV prevention means. Transforming this knowledge into practice, however, depends both on the availability of the means of protection and the acceptability of its use under the pressure of the prison sub-culture.

Women

Women, especially young women, are biologically more vulnerable to HIV than men as they run a higher risk of genitalia trauma during sex. The situation is further aggravated by the fact that women become the object of violence and sexual harassment and, due to gender inequality, often cannot negotiate safe sex with their partner. Overall, the risk of contracting HIV during sex is 2.5 times higher for women than for men[117].

An epidemiological survey of pregnant women in October 2004 covered 2,148 women who visited healthcare facilities due to pregnancy or its termination in Karaganda, Pavlodar,

[112] Hereafter, «n» is the number of observations

[113] Organization of preventive measures and treatment of sexually transmitted infections for commercial sex workers and other vulnerable groups in Kazakhstan: Methodological recommendations. Research Institute for Skin and Venereal Diseases, Astana, 2001.

[114] M.A. Kamaliyev, A.P. Deryabina, Medical and Social Aspects of HIV/AIDS and STIs Problem among Men Who Have Sex with Men. Almaty, 2004

[115] 2004 Report on the Global AIDS epidemic, UNAIDS, Geneva, 2004.

[116] Rapid assessment of the population of vulnerable groups (injecting drug users, commercial sex workers and men who have sex with men): Methodological recommendation – Ministry of Healthcare of the Republic of Kazakhstan, Almaty, 2003.

[117] AIDS Epidemic Update: December 2004, UNAIDS, Geneva, 2004.

Uralsk, and Shymkent. Only 46% of women used condoms during sexual contacts with irregular partners. Only 47% of women showed full awareness of HIV transmission routes, and 37% knew about the prevention measures. The prevalence of antibodies to hepatitis C virus (1.5%) among pregnant women did not exceed the population's average threshold, while the prevalence of syphilis, which confirms unsafe sexual behavior, was as high as 2.9%. 17% of respondents noticed STI symptoms in themselves in the past 12 months.

Youth

Young people's vulnerability to HIV is a result of low awareness, lack of experience, and difficulties in confronting peer pressure. The physiological hypersexuality of young men also plays an important part in their vulnerability to HIV.

The study conducted by the National Center of Healthy Lifestyle Development in 2003 among youth aged 11-17 in Almaty, Astana, Ust-Kamenogorsk, Semipalatinsk, and Kyzylorda showed that the average age that young men begin having sex is 14.7% of respondents said their friends sometimes used drugs, and 3% said they used drugs themselves[118]. The survey of people aged 15-24 showed that 64% of young men knew what the HIV transmission routes are, and 34% were aware of HIV prevention measures. At the same time, 82% of respondents reported using condoms during their last sexual contacts with irregular partners, which at least shows that condom use is socially acceptable [119].

However, Sange research center, which studied the situation with the support of the Ministry of Education and UNESCO, gives a very reserved assessment of the effectiveness of educational preventive measures on HIV/AIDS among high school students, pointing to a serious gap between knowledge and behavior[120], which is mostly conditioned by the youth sub-culture.

Incorrect notions regarding HIV transmission among youth not only make this group personally vulnerable but also contribute to the creation of an unfavorable environment for people living with HIV, which strengthens the stigma associated with this and motivates people infected with HIV to conceal their status or not to seek to find it out and, therefore, to use no adequate means of protection.

As indicated before, the registered HIV prevalence has been growing by at least 20% annually in the past several years. According to expert reports prepared in cooperation with oblast AIDS Centers[121], the potential of HIV expansion among IDU and SW is such that the number of people who are HIV-positive in these groups may increase 1.5 times every year. With such growth dynamics, it should be expected that the number of people who are HIV-positive in this group will reach 50,000 by 2010 (compared to the current 7,000), and the prevalence of HIV will reach 1% of the population aged 15-49.

According to a World Bank report[122], with the current state of affairs, the HIV/AIDS crisis in Central Asia and Kazakhstan in particular may break out during the next 20 years. By extrapolating onto Kazakhstan the model used for the Russian Federation, the authors of the report have concluded that in 2010, even in the best-case scenario, the GDP growth will be 1.75% below the expected rate because of the HIV/AIDS epidemic.

National policy

In the Declaration of the 26-th UN General Assembly Special Session (UNGASS), governments of the world, including Kazakhstan's, made the commitment to adhere to 10 key principles of combat against HIV/AIDS, which include (1) strong political leadership and coordination of all sectors, (2) access of the population to preventive programmes, (3) access of people affected by HIV to treatment, care, and support, (4) observation of human rights, (5) measures to reduce vulnerability, (6) support to children orphaned due to the epidemic, (7) alleviation of the socio-economic consequences of HIV/AIDS through the realization of social programs for affected families, (8) activities to prevent infections in sites of conflict and accident, (9) investigations to invent drugs and vaccines, (10) resource mobilization.

The Law on AIDS Disease Prevention was adopted in Kazakhstan on October 5, 1994 and is currently in force. It requires the Government to ensure treatment free of charge to people with HIV/AIDS, to provide social protection, and to inform the population about HIV/AIDS in order to prevent its spread. The Law also forbids people with HIV from engaging in medical, pharmaceutical activities and daily living services. HIV/AIDS issues are reflected in the Law on Health Protection of Citizens in the Republic of Kazakhstan, adopted in May 1997, which defines HIV/AIDS as a socially significant disease, makes it obligatory for people with HIV to be registered with healthcare facilities, and requires the deportation of foreign citizens who are HIV-positive. Along with general articles on health damage, the Criminal Code of the Republic of Kazakhstan has a special article envisaging prosecution both for deliberate HIV transmission and exposure to the risk of contracting the infection. The Criminal Executive Code defines the norms of keeping people who are HIV-positive in penitentiary institutions, which are applied only to the most dangerous criminals. For example, unlike regular prisoners, people with HIV cannot use their right to leave prison in case of an emergency (e.g. the severe disease or death of close relatives, the placement of a child born in prison into an orphanage, etc.).

Thus, current legislation is rather ambiguous. In order to protect people with HIV, it orders restrictions against them, which in no way counteracts HIV transmission and is completely un-

[118] Major Results of The Study on the Level of Knowledge, Attitudes, and Behavioral Practice of Adolescents in Prevention of HIV/AIDS, STIs, Substance Abuse, and Reproductive Health (Data Collected in 2003, Report Drafted in 2004), National Center for Healthy Lifestyle Development and UNICEF.

[119] Report on the results of the sociological survey, Knowledge, Attitude, Practice on HIV/AIDS among Studying Young People in Kazakhstan. Center of Public Opinion Studies upon the request of the Republican AIDS Center within the Global Fund project, 2004.

[120] Assessment of the effectiveness of preventive educational programmes: Report, Sange Research Agency, Almaty, 2002.

[121] Assessment of the situation on the prevalence of injecting drug use and the potential spread of HIV/AIDS in Astana, Aktau, Atyrau, Pavlodar, Petropavlovsk, Taldykorgan, Temirtau, Uralsk, and Shymkent. 2001-2003.

[122] Reversing the Tide: Priorities for HIV/AIDS Prevention in Central Asia/ J. Godinho, A. Rentan, V. Vinogradov et al., World Bank, Washington, 2005.

justified from the public health point of view. Moreover, restrictive practices against people living with HIV only strengthen stigmatization and fuel the spread of HIV.

It is necessary to note that at present the parliament is reviewing suggestions on reforming the current HIV/AIDS legislation towards its softening and the exclusion of regulations that discriminate against people with HIV/AIDS.

The Program on Healthcare Reform and Development for 2005-2010 provides for the support of HIV preventive measures, their integration in primary healthcare, and the financing of antiretroviral treatment for people who need it, from budgets of central and local governments. The Concept Paper of State Policy on Counteracting AIDS and the Program on Counteracting the AIDS Epidemic in Kazakhstan for 2001-2005 are the basic legal governmental acts that outline key strategies in counteracting AIDS. The Program aims to achieve three goals:

- Stabilize the epidemic at the concentrated state and prevent its transition to the generalized state through implementation of preventive programs among vulnerable groups;
- Reduce the vulnerability of young people;
- Provide social and medical services to at least 80% of the people living with HIV.

Central executive bodies, including the Ministries of Internal Affairs, Culture and Information, Healthcare, Defense, Education and Science, Labor and Social Protection and Justice, as well as regional executive bodies, have adopted detailed programs on counteracting AIDS till 2005.

Preventive measures

The HIV/AIDS education of young people at schools is conducted within the framework of the special subject named valeology (from Latin vale + logos – the science of a healthy lifestyle), which is optional in fact. Teachers of valeology are regularly trained in university schools and in institutes for postgraduate courses. However, in many secondary and high schools, HIV/AIDS education is not life skills-based. The training of students in HIV/AIDS is limited to home tasks targeted at developing reports rather than speaking openly of HIV/AIDS, performing interactive exercises, and initiating the training of peer educators[123]. HIV prevention education addressing military personnel since 2002 has become a part of the commitments of defense and interior sectors. However, there is a gap between planning and implementation. A year and a half after the implementation of the HIV preventive program in the armed forces started, a behavioral survey among military servants that was conducted in 2004, which did not identify significant changes in awareness, attitudes, and behaviors compared to the baseline data[124].

Project on preventing HIV/AIDS among IDU in Temirtau

An example of an effective response to HIV/AIDS is the joint Government and UN project on HIV prevention that was implemented in 1997-2001 in Termitau, Karaganda oblast, where an outbreak of HIV among IDU was registered in 1997. The project included a rapid assessment of the HIV situation, defining needed preventive measures; initiation of a broad discussion of the situation and response in the town; resource mobilization among various partners including private sector (the metallurgical plant Ispat Karmet); involvement of public figures and leaders, PLWHA and representatives of the target group; creation of HIV service NGOs; development and dissemination of information materials; procurement of prevention commodities according to the needs of consumers; establishment of trust points for IDU and the provision of IDU with education, information, communication, consultations, condoms, disinfectants, syringes, needle exchange programmes, and STI treatment if necessary; harm reduction services for people who don't want or cannot quit drug use; and implementation of demand reduction strategy among youth.

As a result, in conditions of implementing similar methodology to detect and register HIV, the number of newly-registered HIV cases in 2001 was 8 times less than in 1997. In the whole country in 2001, that index was 8 times higher than in 1997. The successful project implemented in Temirtau was replicated in other cities and towns of Kazakhstan. However, the project didn't prove to be sustainable enough. After the support of external donors was withdrawn, the trend of annual reduction in newly- registered HIV cases disappeared.

The country is implementing preventive programs that cover particularly vulnerable groups such as IDU, SW, MSM, and prisoners. Trust points for IDU (128 in total) function in all oblasts and the cities of Astana and Almaty and provide education, information, counseling, syringe and needle exchange, condoms, and disinfectants. There are 22 friendly clinics that provide SW, MSM, and IDU with syndrome approach-based management of STI .

According to the data provided by the Republican AIDS Center, in 2004, the coverage of IDU by harm reduction services was only 14% of the estimated number of IDU in the country; the coverage of SW and MSM by preventive programs, including information and education components, consultations, condoms promotion, and STI treatment, was 39% and 1%, respectively. The coverage of HIV-positive pregnant women, who delivered children by means of treatment aimed at preventing mother-to-child HIV transmission was only 13% of their estimated number.

Compared to 2003, 2004 showed a start of positive dynamics in awareness level and some of the behavioral aspects (growth in the rates of individual drug use was up to 12%, and in a constant group – up to 65%; there was a decline in the proportion of IDU who have sexual contacts with irregular partners and the number of sexual partners was almost cut in half – down to 2 among men and 7 among women).

Kazakhstan ensures appropriate precautions against HIV transmission in healthcare facilities.

[123] Rapid assessment of implementation of HIV prevention programmes among young people, Almaty, 2005.

[124] Report on behavioral surveillance among staff, Center of Public Opinion Studies, Almaty, 2004.

Treatment, care, and support

People with HIV/AIDS are provided with the treatment of opportunistic diseases and palliative care on the same conditions as other people. In particular, people with HIV and tuberculosis (TB) are treated in the corresponding TB facilities, those who suffer from cancer diseases – in clinics, and those with intestinal disorders – in infection hospitals. Palliative home-based care is provided by governmental healthcare facilities at the place of residence.

In February 2004, the Ministry of Healthcare approved national guidance on antiretroviral therapy (ART) based on the model provided by WHO.[125] However, as of January 1, 2005, according to the Republican AIDS Center, only 39 out of 900 people (or 4%) of those eligible for ART actually received it, which is half as much as the current international average (7%). Low ART coverage is mostly due to problems with commitment to treatment as well as a lack of the needed range of affordable generic antiretroviral drugs.

PLWHA are not eligible for any additional support. According to a sociological survey of a random sample of 100 PLWHA in Temirtau in 2003[126], their average income was 3,050 tenge (while the subsistence minimum was 4,761 tenge and the food basket was 3,333 tenge[127]). While all the respondents were among the economically active population, only half of them had been employed in the month that preceded the survey, and 4% were homeless. At the same time, 47% of respondents had children and other dependent family members.

Observation of human rights and reduction of vulnerability

Syringe and needle exchange for IDU is legalized in Kazakhstan and has become a part of national policy on counteracting AIDS. Earlier criminal laws that forbade certain kinds of sexual contact between mutually consenting adults, including commercial sex and sex between men, were abolished. This helped to increase access to these groups. Starting from 2000, the programs to counteract HIV/AIDS, which include education, information, counseling, and condom and disinfectant supply were incorporated into the everyday activities of penitentiary institutions.

In 2001, the government of Kazakhstan changed the consolidated table for referral drugs, psychotropic substances, and precursors discovered in illicit custody or traffic to small, large, and particularly large portions. The lower limits of small portions of cannabis and opiates were increased so that the actions related to their purchase, custody and transportation without the aim of selling could be referred to administrative but not criminal offences. However, drug dependent opiate injectors still have no access to substitution maintenance treatment.

PLWHA are guaranteed confidentiality and the right to free treatment. HIV testing is voluntary and based on the complete, informed consent of the patient. Only blood, tissue, and organ donors are obliged to be tested for HIV. Compulsory testing may also be carried out for certain individuals upon the officially issued request of a law-enforcement body[128]. However, neither with vulnerable groups nor with pregnant women and people employed in the food industry, etc[129] are these rules observed in a number of regions.

Alleviation of the consequences of the HIV/AIDS epidemic

Several local executive authority bodies take measures to facilitate employment opportunities for PLWHA. However, the country as a whole does not implement major projects targeted at support for PLWHA and helping their families to survive in the case of the death of a breadwinner.

Mobilization of resources

To implement priority strategies, The Program on Counteracting the AIDS epidemic in the Republic of Kazakhstan for 2001-2005 determined the need in resources to be 22.8 billion Kazakh Tenge for five years. Of that amount, 0.4 billion only (or less than 2 percent) was committed by the government, in addition to its regular disbursements, comprising about 0.4 billion Kazakh Tenge annually. In 2002, by developing a successful proposal to the Global Fund to Fight AIDS, TB, and Malaria, the country mobilized an additional US $ 22.4 million (or about 3 billion Kazakh Tenge) for five years.

The grant allowed the country to expand preventive programs among IDU, SW, and MSM by providing them with access to special educational and informational materials, communications, condoms, disinfectants, medicines to treat STI, disposable syringes and needles; the procurement of anti-retroviral drugs, training for teachers, the development and publishing of manuals for teachers and textbooks for students, the payment of fees to volunteers from among NGOs, and the improvement of technical and managerial capacities in monitoring and evaluation.

Other major sources of additional funding include the sub-regional WB project targeted at cross- cutting issues launched in May 2005 and the sub-regional USAID CAPACITY project targeted at building the technical capacities of health professionals and NGOs effective as of 2005. However, over 50% of the determined needs in resources to effectively fight HIV/AIDS are still not covered.

[125] Providing help and treatment in cases of HIV and AIDS: Protocols of CIS countries, version 1, World Health Organization, 2004.

[126] Report on the Survey of Socio-Demographic Profile, Behavior and Needs of People Living with HIV in Temirtau, Republican Center for Study of Public Opinion. Almaty, 2003.

[127] Poverty in Kazakhstan: Causes and Cures, UNDP Kazakhstan, Almaty, 2004.

[128] Ministry of Healthcare Decree #575 on «Approval of Regulations on Medical Examination to Detect Human Immunodeficiency Virus», June 11, 2002.

[129] Information provided by the Republican AIDS Center.

Major problems

A number of factors hamper the progress of efforts on preventing the spread of HIV:

- The very fact of HIV transmission through injection or sexual contact, which is defined by individual practice and requires changing individual behavior to make it safer;
- The sensitivity of issues related to the spread of the epidemic; these issues define certain groups' vulnerability to HIV, such as drug use, commercial sex, homosexuality, gender inequality, and the sexual practices of the younger population;
- The stigma and discrimination of people with HIV, which leads to the unwillingness to know one's HIV status and talk about it openly;
- A long period of time elapses between contraction and the first manifestation of infection symptoms, so that a person with HIV may transmit the infection without even knowing he/she is an infection bearer;
- The impossibility to distinguish, with sufficient probability, the difference between a person with HIV and one without the virus, based on either appearance or lab tests. In the latter case, due to the so-called «serological window», when a person has already contracted HIV but the antibodies have not yet formed, the results of the blood test are negative;
- The absence of vaccines or medicines that can destroy the virus or prevent its transmission to uninfected people.

The coordination of different stakeholders at the national level is insufficient. The multi-sectoral national AIDS council has not clearly taken a leadership role in combating HIV/AIDS through involvement in planning and implementation of national strategies, coordinating inputs by different partners, and facilitating outcome-oriented management.

HIV/AIDS issues in Kazakhstan are mostly handled by the healthcare sector. There is no multi-sector national coordination council on AIDS that would include representatives of civil society, be headed by an official with a status above government minister, be authorized to make political decisions concerning all sectors, and control their implementation. Apparently, this limits the effectiveness of the multi-sector response to the epidemic.

In Kazakhstan, HIV/AIDS education is integrated in the school curriculum, but only as an optional course. The standards of young people's education about HIV/AIDS prevention on the basis of life skills and integration of HIV/AIDS issues in the compulsory study plans are still at the development stage.

Since 2002, when the first interventions on HIV prevention among vulnerable groups were implemented throughout the country, a radical turn in the coverage of target groups with preventive programs has not happened. According to the rapid assessment conducted by international experts, potential beneficiaries explain their unwillingness to participate in preventive programs by the lack of a supportive legal and social environment, so that many beneficiaries feel that potential damage (discrimination and isolation) from participating in such programs exceeds the potential benefit. Moreover, target groups still have very limited access to preventive goods, such as sterile disposable syringes, needles, and condoms[130].

People addicted to drugs, including those who have repeatedly and unsuccessfully gone through therapy aimed at the total rejection of drugs, do not have access to drugs in legal circulation, including when they are in substitution therapy. As they need to inject drugs, these people risk criminal or administrative prosecution for drug purchase and/or storage. This is in accordance with current legislation, which, in experts' opinion[131], leads to massive rejection of contacts with governmental and non-governmental organizations and participation in preventive programs.

Most people with HIV who know their status continue socializing within the IDU and/or SW groups and maintain practices that are unsafe in terms of HIV transmission. Experts say[132] that these people reject preventive injecting and sexual behavior because they are not integrated in the mainstream society and fear losing social connections in their groups should they openly talk about their HIV status.

The issue of voluntary counseling and testing for HIV for pregnant women from vulnerable groups, rural areas, and company towns remains unsolved. Rapid HIV testing, which could help prescribe urgent prophylactic treatment to prevent mother-to-child transmission, is not available in obstetric clinics. Thus, in spite of the formal introduction of antiretroviral prophylaxis of mother-to-child HIV transmission, it is estimated that by 2005 Kazakhstan will not be able to reduce the proportion of HIV-infected infants born to HIV-positive mothers by 20%, as envisaged in the Declaration of the Special UN General Assembly Session on HIV/AIDS (estimated figures are 23% for 2004, and 24% for 2003)[133].

According to the Republican AIDS Center estimates, about 90% of patients eligible for ART are addicted to heroin, and their adherence to treatment cannot be ensured without substitution therapy. If adherence to treatment is below 95%, resistant virus strains develop, and in this case ART may not only fail to help the HIV-positive patient but may expose him/her to the unjustified risk of complications and side effects, and also facilitate increased circulation of medicine-resistant viral strains that may be transmitted to other people.

The provision of methadone substitution therapy to people with HIV addicted to heroin is an important part of WHO-modeled guidance. The issue of introducing methadone maintenance treatment has been discussed by the Government for several years now. Such therapy is not only an effective HIV-prevention strategy, but also a strategy that ensures the provision of antiretroviral treatment, which saves the lives of

[130] Results of the HIV sentinel surveillance in Kazakhstan, Republican AIDS Center with the assistance of UNAIDS, 2005.

[131] HIV/AIDS and Tuberculosis in Central Asia: Country Profiles /J. Godinho, Novotny T., Tadesse H., Vinokur A., World Bank, Washington, 2004

[132] Report on assessing social needs of people living with HIV/AIDS. V. Zhovtiak. Joint UNDP and Government of Kazakhstan project. 99/02.

[133] Kazakhstan's report on fulfilling the provisions of the Declaration on Commitments, adopted by the Special HIV/AIDS Session of the UN General Assembly. Republican AIDS Center, Almaty, 2004.

people with HIV/AIDS[134]. In 2002, the Ministry of Healthcare issued a decree on introducing substitution therapy for people with opiate addiction in Pavlodar and Karagandy oblasts[135]. However, this decree has not been fulfilled yet.

The unresolved issue of access to ART in Kazakhstan undoubtedly contributes to the further spread of the epidemic and the aggravation of its devastating consequences.

Although several friendly clinics for STI treatment have become available to especially vulnerable population groups, the overall STI management is still based on etiological diagnosis, even though it is well known that available laboratory facilities within the public health system in most cases cannot provide reliable data on agent's origin. Conditions to get STI treatment within the public health system are both unacceptable and unaffordable for a large share of the population, particularly young people. Many people with STI refuse to seek health care, which creates the persistence of STI in the population and dramatically increases the population's susceptibility to HIV/AIDS.[136] According to the reported data based on people's applications to public health facilities in 2004, the prevalence of syphilis in Kazakhstan was less than 0.1%, while sentinel surveillance indicator among pregnant women (which is commonly extrapolated to the general population) showed a syphilis prevalence that was 30 times higher. Overwhelming majority of people with STI either do not undergo medical treatment at all, or apply for medical care to alternative structures.

Surveillance systems for STI are also based on outdated screening programs that include practices of compulsory contact tracing, and their data are not reliable. While Kazakhstan is apparently facing a severe epidemic of syphilis, case-reporting-based statistics draws a picture of epidemiological safety.

The system of tracking the HIV/AIDS epidemic and monitoring and evaluating the response needs further strengthening, especially in terms of using the data and increasing their reliability. Access to population groups that are hard to reach, especially access to MSM, which is an essential prerequisite to receive reliable and comparable data for programming and developing relevant strategies, is very limited.

Certain measures on involving people with HIV and civil society in counteracting HIV/AIDS are being implemented. However, NGO involvement in counteracting HIV/AIDS is still limited, and they do not receive financial support from the government.

PLWHA, whom the epidemic concerns most of all, are not properly involved in combatting HIV/AIDS due to their stigmatisation, marginalization, and low social status.

When law enforcement bodies and the general public display violence and hostility against certain population groups including MSM, SW, and IDU these groups' vulnerability to HIV infection is exacerbated.

There are no anti-discrimination and protective laws and legal regulations in the country concerning the most vulnerable groups, and no legal support services that could inform people from vulnerable groups and those living with HIV of their rights, or provide free of charge services to protect them. According to some reports, in the absence of appropriate legislation, law-enforcement practices often put such groups in a situation that fuels rather than counteracts the spread of HIV[137].

Connection with other MDGs

MDG 1

Kazakhstan is still a country with a low HIV/AIDS prevalence and the linkages of the HIV/AIDS epidemic there are not obvious. However, in fact at a global level AIDS is recognized as a cause of poverty or of deepening poverty. In severely affected countries, the HIV/AIDS epidemic has become the main reason for decreased productivity, reduced national income, an increased dependency ratio, and the decreased capacity for households headed by minor orphans and elderly persons to be managed. Households suffer a significant decrease in income and huge rises in medical care spending, which becomes catastrophic. Decreased income leads to fewer purchases and diminished savings.

On the other hand, poverty and income inequalities produce effects on social transactions, including sex, patterns of vulnerability, and patterns of risky behaviour in relation to HIV infection and AIDS. Poverty is commonly considered to be one of the reasons for the involvement of people both in elicit drug traffic and commercial sex service. People living in poverty lack access to preventive interventions and to affordable care, both of which stimulate the growth of the HIV/AIDS epidemic.

MDG 2

It is commonly recognized that a lower educational status reduces access to information on AIDS. Fifteen percent of the people registered as HIV-positive in Kazakhstan have an education below the secondary level[138]. AIDS also threatens the educational system and so undermines the intellectual potential of the country. In high prevalence countries like the Central African Republic and Zambia, it is eroding the supply of teachers and thus increasing class sizes, which is likely to reduce the quality of education.

MDG 3

The HIV/AIDS epidemic is a gender issue. Physiological differences in the uro-genital tract directly contribute to women running a higher risk of acquiring HIV. Women, especially those who belong to vulnerable population groups, are often put into situations of violence and thus they have no abilities

[134] Joint stand of WHO, UNODC, and UNAIDS: Substitution therapy for the treatment of patients with opiate addiction and the prevention of HIV/AIDS.

[135] The Decree of the Ministry of Healthcare #791 «On Introduction of Substitution Therapy», August 21, 2002.

[136] STI other than HIV are important in terms of HIV/AIDS epidemic for two reasons. Firstly, a HIV+ person with STI is likely to transmit HIV sexually, while a HIV- person with STI is more susceptible to acquiring HIV. Secondly, prevalence of STI is a good marker of risky sexual behaviors conducive to the spread of HIV infection.

[137] How Human Rights Abuses are Fueling the Aids Epidemic in Kazakhstan, Human Rights Watch, 2003

[138] Report on the Survey of Socio-Demographic Profiles, Behavior, and Needs of People Living with HIV in Temirtau, Republican Center for Study of Public Opinion, Almaty, 2003.

to take measures to protect themselves. Gender norms often determine what men and women can know about sex. It is commonly accepted that it is inappropriate for women to seek out or have extensive knowledge of sexuality and reproductive health. Gender traditions attribute making the decision to have safe sex to the rights of men, but not to the rights of women, so that women in definite situations cannot even negotiate safe sex. The unavailability of female condoms creates additional difficulties for women to decide for themselves to have safe sex. In many cases women are economically dependent on men, and therefore have limited access to care and treatment. Because of the very different roles and responsibilities assumed by women and men, HIV-related illnesses in the family affect men and women differently. Besides, women bear the majority of the responsibility of caring for the sick, which is one of the many forms of un-paid work that they do.

The CDC-supported studies conducted in Temirtau in 2000 showed a 48 percent HIV prevalence among women who inject drugs, while the HIV prevalence rate among male IDU was 15 percent, which proves that female IDU are more vulnerable to HIV than male IDU. This difference was attributed to the fact that women have less access to HIV prevention technologies[139]. Women with HIV/AIDS are subject to double or triple the discrimination men face: (1) as PLWHA, (2) as IDU and (3) as women. The rapid assessment performed in Temirtau[140] showed that women with HIV face more difficulties in getting employment and bear the burden of bringing up children in families where the woman is the single source of support. Taking care of family members with HIV-related illnesses is also becoming the responsibility of women, who have to refuse education and paid work to fulfil that function.

MDGs 4, 5

Addressing HIV/AIDS is a way to control child mortality. Because Kazakhstan is a country with a low prevalence of HIV/AIDS, the impact of HIV/AIDS on under-five child mortality is not visible. However, the estimates made in countries with a high HIV/AIDS prevalence (namely Botswana, Uganda, Kenya, Malawi and Zimbabwe) showed that by 2010, HIV/AIDS will increase the mortality 2-7 times[141]. That's why the prevention of mother-to-child transmission of HIV in Kazakhstan is am issue equally related to MDG 6 and MDG-4.

There are a host of scientific, practical, and ethical reasons for acknowledging the relationship between maternal mortality and HIV/AIDS. The management of pregnancy of HIV+ women should be seen as a part of the holistic and long-term care for women. However, there is still much to be gained from an improved understanding of the synergy between maternal mortality and HIV/AIDS.

MDG 6: HIV/AIDS and TB

HIV and TB are closely connected to each other. HIV affects the immune system and increases the likelihood that people will acquire new TB infection. It also promotes both a progression of latent TB infection to the disease and a relapse of the TB disease in previously treated patients. TB is one of the leading causes of death in people infected with HIV worldwide. An estimated one-third of the 40 million people with HIV/AIDS worldwide is co-infected with TB. According to the data of the Republican Centre for AIDS Control and Prevention in Kazakhstan, up to 60 percent of people infected with HIV develop TB. TB is a leading killer of people with HIV. TB in people who are HIV+ is almost certain to be fatal if undiagnosed or left untreated. However, with effective treatment, TB can be cured, HIV managed, and lives saved. The AIDS Epidemic and TB are locked in a vicious circle of mutual reinforcement. The implementation of a dual strategy that will work towards both TB and HIV/AIDS control and prevention is the tool that will break this vicious circle.

[139] HIV among drug users in Kazakhstan – Pilot analysis of risk factors, Almaty 2000.

[140] Report on assessing social needs of people living with HIV/AIDS. V. Zhovtiak. Joint UNDP and Government of Kazakhstan project. 99/02, Almaty, 2003..

[141] Estimated impact of AIDS on under-5 child mortality rates in selected African countries by 2010, UNAIDS, WHO, 2002.

Conclusions

There is still insufficient data to model the situation and make a forecast of the spread of HIV. This is due to limited access to vulnerable groups and the incompatibility of epidemiological surveillance data obtained with the use of different methodologies. Up to now, it has been impossible to assess the HIV prevalence among MSM. The potential of HIV to spread among the general population has not been assessed either.

It is necessary to find a way to ensure the highest possible level of political leadership in counteracting HIV, which is an exceptional social phenomenon. At the present level of technological development, at which there are no medicines to eliminate HIV from an infected body, nor a vaccine to create an artificial immunity, the issue of counteracting HIV/AIDS moves into the sphere of socio-cultural problems, the solution to which depends on people's behavior, interpersonal relationships, and non-discrimination by affiliation with certain groups and by HIV status. The burden of the responsibility for preventive measures should be shifted from the healthcare sector to a higher government level, which is authorized to coordinate all social sectors.

It is necessary to strengthen the partnership of government and NGOs, taking into account that the non-governmental sector is able to influence unsafe behavioral practices that are the main factor of the spread of HIV in Kazakhstan. Civil society, including formal and informal communities of vulnerable groups, forms the environment that defines the acceptability and tolerance of certain practices that may fuel or hinder the spread of HIV. At the same time, the non-governmental sector enjoys a higher level of trust among vulnerable groups. It is necessary to ensure better involvement of people living with HIV in counteracting HIV/AIDS, as they have learnt the implications of infection and know better than others what is needed to counteract it and mitigate the consequences.

The total number of IDU, SW, MSM, and prisoners in Kazakhstan is estimated at 300,000 people, and they are in need of specific interventions aimed at halting the spread of HIV/AIDS.

Legislation needs to be improved. Existing legal practices do not fully assist the counteraction of HIV/AIDS. While the state and society are interested in people knowing their HIV status, which is an important pre-condition for HIV prevention measures, existing legislation places an additional burden on people living with HIV, making it disadvantageous to know one's HIV status.

Preventive measures on counteracting AIDS appropriate for the concentrated state of epidemics, when effective measures on preventing HIV among vulnerable groups become the main factor precluding the spread of HIV to the general population, are still not legally formalized. Related legislation does not in any way support such measures and often even inhibits them.

It is necessary to enhance the capacity of politicians, lawmakers, healthcare managers, and NGOs to collect and use strategic information and practice management aimed at the end rather than the intermediate result. Analysis shows that various activities are carried out in the country under the banner of counteracting HIV, including the registration of people with HIV and unproductive efforts to control their personal behavior to prevent further virus transmission. In the end, however, these activities damage people's trust in preventive programs and have nothing to do with counteracting the epidemic.

People living with HIV should have real access to treatment, including antiretroviral therapy. Access to this kind of treatment is the main cause of people's willingness to know their HIV status. At present, there is practically no such access, due to the unavailability on the internal market of affordable antiretroviral medicines, the lack of preparation of healthcare facilities and specialists to conduct ART, and the lack of commitment to receiving treatment on the part of patients themselves. A critical factor of ensuring commitment to antiretroviral treatment among people with HIV addicted to drugs is the introduction of substitution therapy, which eliminates the abstinence syndrome and allows the intake of antiretroviral medicines.

People who are HIV-negative, including vulnerable groups, should have a wide access to educational programs and preventive goods and services, particularly condoms and STI treatment, on acceptable terms. Providing people with the means of HIV prevention should be integrated in the national policy. An important factor of AIDS prevention is integration of preventive measures on HIV and tuberculosis transmission, especially among such marginalized groups as IDU and prisoners.

It is necessary to take effective measures on counteracting the stigmatization of and discrimination against people living with HIV, including guaranteeing the protection of their rights and creating acceptable employment conditions that would allow poor people with HIV to receive treatment and participate in social programs, including those aimed at household strengthening. Marginalized and not always aware of their rights, people with HIV and their families need social consultations and special support, including social welfare and training on care at home.

When a huge amount of resources are available in the country it is necessary to allow them to work. Measures to counteract HIV/AIDS can be effective only if the government leads counteraction against the epidemic. To envisage the effectiveness of HIV/AIDS' counteraction in 2004, major international organizations and donor communities agreed to support the following Three Ones:

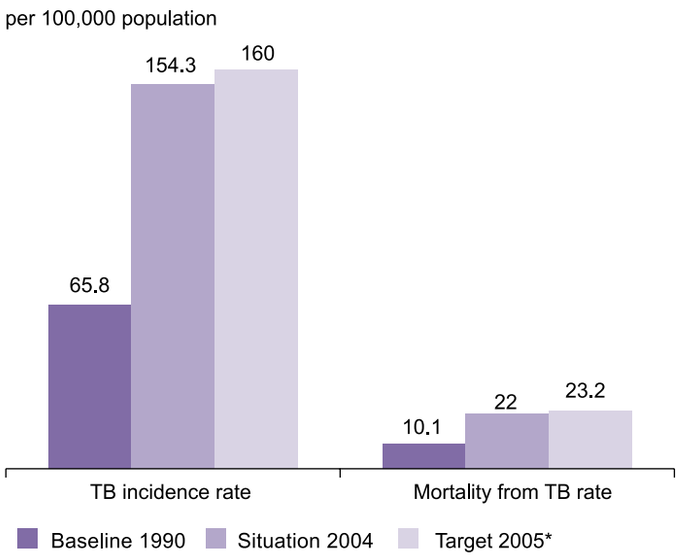
- One strategic country framework to fight HIV/AIDS;
- One empowered coordination body with a broad-based multi-sectoral mandate and
- One monitoring and evaluation system.

Government-led focus on the implementation of the Three Ones is a prerequisite for successful joint actions against HIV/AIDS to occur.

Fulfillment of the opportunities that have been missed so far will contribute to halting and reversing of the spread of HIV epidemic.

Target 8:

Halt, by 2015, and begin to reverse the incidence of tuberculosis



**According to the State Program for Poverty Reduction (2003-2005).*

Tuberculosis is caused by a group of mycobacterium that form the so-called Mycobacterium Tuberculosis Complex. Infection occurs through the inhaling or, less frequently, swallowing of the agent and very rarely through placenta in cases of casuistic placenta lesion. However, the leading contamination mode is inhalation of droplet nuclei of the bronchial aerosol that contains mycobacterium tuberculosis discharged by the consumptive patient. A person with lung TB discharges the agent through coughing, sneezing, or speaking. In poorly ventilated spaces, droplets of aerosol remain suspended in the air for 14-16 hours. Infection with mycobacterium tuberculosis does not always lead to the disease. In 90% of cases, mycobacterium tuberculosis remains in the body as a latent infection and does not cause TB. Only 10% of infected people become sick: 5% in the first five years after infection, and the remaining 5% – at any time during the rest of their lives.

Significance for Kazakhstan

Tuberculosis has been known to people since antiquity and for a long time was considered incurable. The introduction of anti-tuberculosis medications in the 1950-60s lead to a considerable decrease in TB incidence and mortality in many countries of the world. The sustainable downward trend of TB prevalence in Kazakhstan was established in the 1980s when the average TB incidence rate was about 70, and mortality from TB was about 10 cases per 100,000 population.

However, mortality from TB in Kazakhstan has been on the rise since the beginning of the 1990s, and registered TB incidence has been rising since 1995. These changes were caused by various socio-economic factors: the disintegration of the USSR and the old system, migration, the spread of HIV infection, a reduction in spending on healthcare, and worsened financing of TB services. A serious problem for Kazakhstan is the high incidence of TB among prisoners, which is 10-15 times higher than the incidence among the general population. Another serious issue is the growing spread of multi-drug resistant TB (MDR). A high TB prevalence can negatively affect the socio-economic development of the country, cause a reduction in labor productivity and investor appeal of certain regions, and increase poverty. On the other hand, adverse socio-economic conditions facilitate the spread of tuberculosis.

Malnutrition and poor housing conditions due to low income weaken the body's defense mechanisms and create a favorable environment for the development of TB. Late application for medical aid, which complicates further treatment, is often explained by illiteracy and the marginalization of certain groups. Thus, the importance of TB prevention and incidence reduction in the country is obvious. In this regard, it is necessary to expand effective TB counteraction programs and mobilize all possible partners and resources to achieve sustainable and effective results in the TB response. It is also necessary to strengthen the financial and political support of the state both for counteracting the TB epidemic and for the further promotion of DOTS.

The Government defined TB counteraction as one of the key healthcare priorities. The country's main policy document, Kazakhstan-2030. Prosperity, Security, and Ever-Growing Welfare of All Kazakhstanis, defines the health and well-being of citizens as one of the long-term development priorities.

To implement the long-term strategy, the Strategic Development Plan of Kazakhstan until 2010 was approved in 2000. In this plan, the strategy of healthcare reform is one of the priorities. The strategy is aimed at creating an effective healthcare system that improves the population's health status through expanded access to quality healthcare among the general population and strengthened focus on preventive measures in health protection and promotion.

The Strategy of Healthcare Reform pursues the following goals:

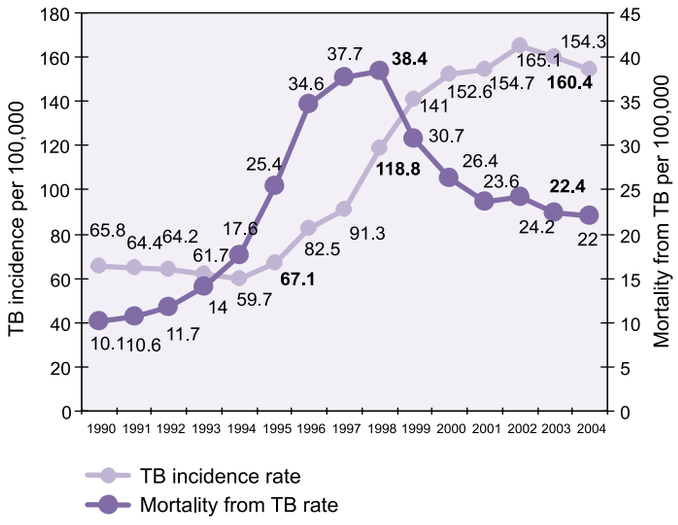
- strengthen the prevention of socially significant diseases and diseases that are contagious;
- strengthen the healthy lifestyle formulation service;
- improve healthcare services and strengthen primary healthcare (PHC), develop the practices of family doctors;
- improve the supply of medications and create conditions for the development of pharmaceutical and medical industries in Kazakhstan;
- improve medical treatment management through the introduction of new, internationally acknowledged and WHO-recommended treatment methods;
- establish a financing system that ensures the provision of quality healthcare to the population;
- improve healthcare system management.

The State Program on Healthcare Reform and Development for 2005-2010 was approved in 2004[142]. Its goal is to create an effective healthcare system based on the principles of joint responsibility of the government and citizens and priority development of PHC. One of the Program's key goals is stable reduction of the incidence of socially significant diseases, including TB. According to the program, special attention will be paid to intensifying the combat of TB, reducing its incidence, and decreasing the number of deaths it causes. PHC facilities will be largely involved in treatment and prophylactic activities at all stages of TB management. The national roster of TB patients will be improved, and control over the observance of common disease management protocols and the effectiveness of TB counteraction activities will be ensured. Special departments for treating chronic TB patients with constant bacilli discharge will be opened in oblast TB clinics, as well as departments for the forced treatment of patients who avoid treatment and have contagious forms of TB. Diagnostics and treatment activities will include the further implementation of DOTS Plus and the introduction of effective antibacterial therapy schemes for multi drug-resistant forms of TB. Social assistance to TB patients and TB facilities personnel will also be expanded in future.

Target 8 progress in Kazakhstan

Graph 6.3 presents the dynamics of TB incidence and mortality from TB in Kazakhstan in 1990-2004. As the graph illustrates, the period between 1990 and 2004 can be conditionally divided into three epidemiological periods with distinct combinations of incidence and mortality rates:

Graph 6.3. TB incidence and mortality rates per 100,000 registered in the Republic of Kazakhstan between 1990 and 2004



Source: CDC. Michael O Favorov. TB Epidemiology in Central Asia. Report to the technical working meeting on a Unified Approach to the Problem of Multi-Drug Resistant Tuberculosis. Almaty, January 24-28, 2005. /2004/ – Agency on Statistics of the Republic of Kazakhstan

The first period, 1990-1994, was characterized by a growing TB mortality rate, from 10.1 to 17.6 per 100,000, while the registered TB incidence rate was decreasing. Such a combination of trends in incidence and mortality is a very bad sign, as it points to worsening rates of infection detection during the patients' lifetime while the actual TB prevalence is increasing, as indicated by the growing mortality rate. This period coincides with the collapse of the USSR, economic and social destabilization, a decrease in the public financing of healthcare, and an irregular supply of chemical drugs to anti-TB facilities.

The second period, 1994-1998, was characterized by parallel growth in both incidence and mortality rates, with the mortality rate increasing a little faster (please see graph 6.3). The trend reflected the growing prevalence of TB, late diagnostics, and low quality of treatment. In 1998, the TB mortality rate in Kazakhstan reached its peak at 38.4 cases per 100,000 population.

The third period, 1999-2002, represented a new stage in the development of the TB situation in Kazakhstan, which coincided with the introduction of the DOTS strategy in the country. This period was characterized by a clear decrease in mortality and a decelerated growth of the incidence rate. The idea that the mortality reduction was due to the introduction of DOTS speaks of the improved quality of TB treatment and may indicate better disease detection, particularly considering

[142] Approved by the President's Decree #1438 on September 13, 2004.

the reduced number of patients detected at the late stages of disease. The rise of the incidence rate at this stage is logical as disease detection and registration improved.

In 2003, a tendency towards the decrease in TB incidence in Kazakhstan started taking shape. On the average, TB incidence in the country in 2003 was 2.8% lower than it was in 2002. In 2004, according to the Agency on Statistics, reported TB incidence and mortality from TB declined further and were 154.3 and 22 per 100,000 people, respectively.

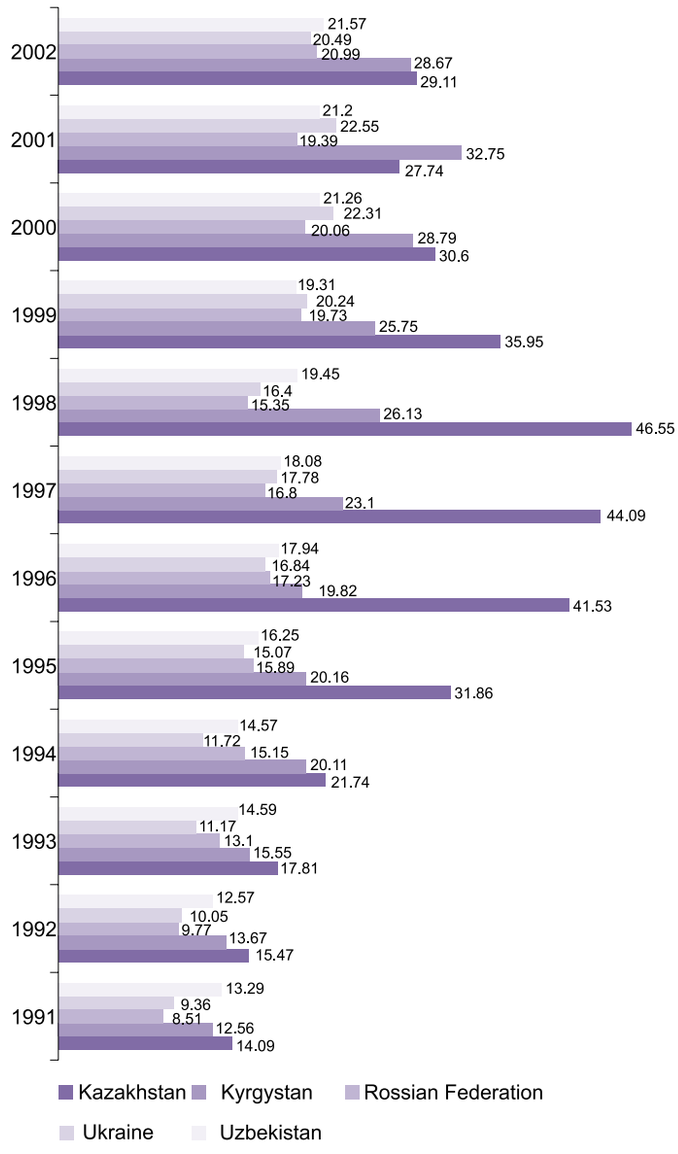
Graph 6.4. presents a comparative analysis of mortality rates in five CIS countries (Russia, Ukraine, Kyrgyzstan, Uzbekistan, and Kazakhstan) in the period between 1991 and 2002.

Such a significant increase in TB mortality as the one that occurred in Kazakhstan from 1994-1998, was not registered in any other post-Soviet country. Among the factors that possibly influenced the situation, are the following socio-economic issues:

- Reduction of healthcare spending and the TB service budget;
- Social crisis (poverty, unemployment, alcoholism, drug addiction).

However, such issues were typical for many former Soviet republics. During the comparative analysis of data on TB mortality in different CIS countries, it is necessary to take into account possible differences in the availability and reliability of statistical data on TB in these countries, such as the completeness of registration of mortality from TB and the correct detection of causes of death.

Graph 6.4. Registered rate of mortality from TB per 100,000, 1991-2002, CIS countries



Source: WHO, Health For All Database (http://hfadb.who.dk/hfa/)

TB incidence by oblast of Kazakhstan

At the end of 1998, before the adoption of the DOTS strategy, the registered TB incidence rate was above the WHO-defined epidemic threshold of 100 new cases per 100,000 population in all oblasts except the city of Almaty and South-Kazakhstan and Almaty oblasts. The highest figures per 100,000 population were registered in Kyzyl-Orda (233.8), Mangystau (180.0), Atyrau (258.5), and West-Kazakhstan (144.1) oblasts.

In the next four years, from 1999 to 2002, all oblasts experienced a rise of TB incidence, especially the Western Kazakhstan region and Kostanay, Akmola, and Pavlodar oblasts.

Compared to 1998 figures, TB incidence per 100,000 population in the oblasts was from 21% (North-Kazakhstan oblast) to 93% (Aktobe oblast) higher in 2002.

As noted earlier, in 1999, Kazakhstan started implementing the DOTS strategy and intensified work on bacterioscopy methods of TB detection. All PHC facilities with patient reception hours received binocular microscopes. With the technical assistance of international organizations, lab personnel of PHC and anti-TB facilities received training on the methods of bacterioscopic analysis of sputum for TB detection; a list of symptoms that indicate when sputum bacterioscopy is required was developed, and monitoring was carried out in the oblasts at least once every two months. All of these factors contributed to the increase in the number of registered TB cases and, consequently, to the increase in the registered TB incidence rate.

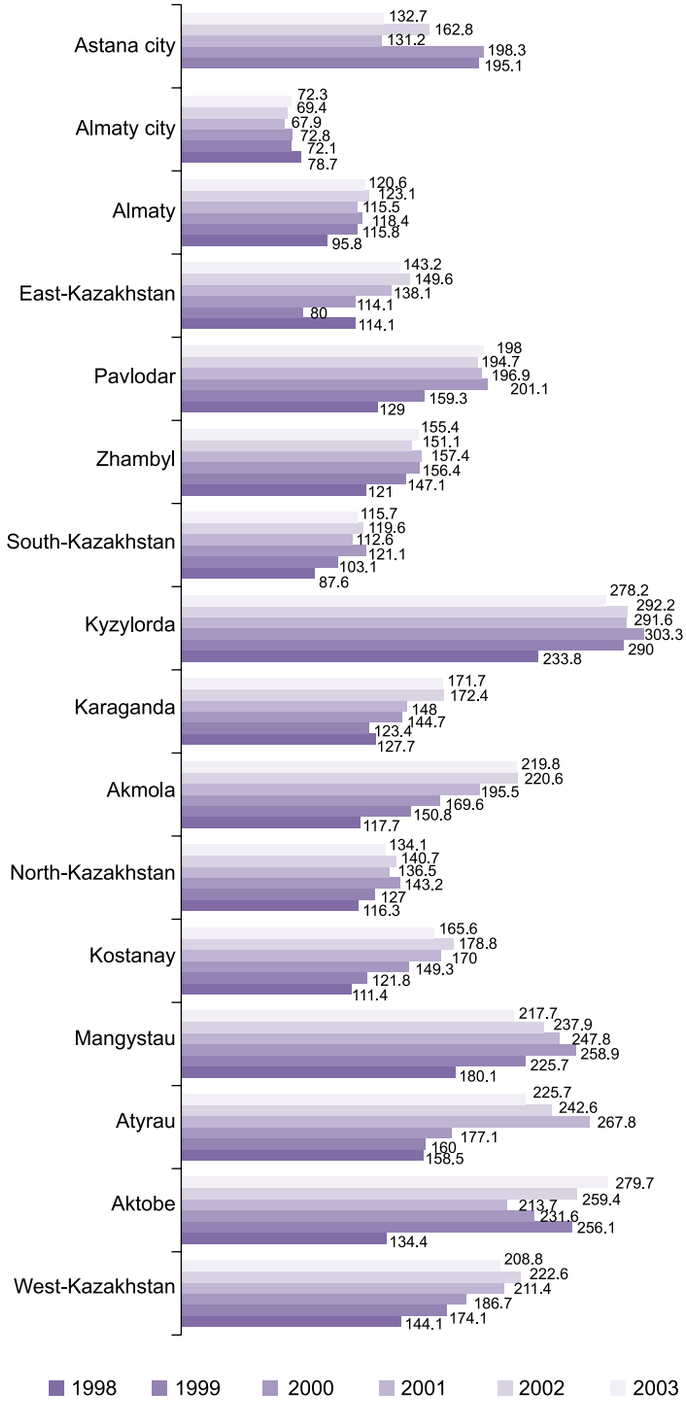
In 2003, for the first time in the past nine years, and four years after the introduction of DOTS, the growth of TB incidence in Kazakhstan stopped and a trend towards its reduction began to show.

Compared to 2002, the registered TB incidence rate decreased in 11 out of 14 oblasts, with the difference ranging from 0.4% to 8.5%, and in Astana city – by 18.5%. At the same time, three oblasts – Aktobe, Zhambyl, and Pavlodar, plus the city of Almaty – experienced a 1.7 to 7.8% rise in the TB incidence from 2002-2003.

Graph 6.5 also shows that in the past five years the incidence rate was relatively low in South-Kazakhstan and Almaty oblasts and Almaty city. Mortality from TB in these regions was also the lowest, probably because of better climatic conditions and the availability of more balanced nutrition. It is worth noting that in spite of economic and social problems, southern regions of Kazakhstan also have better life expectancy rates.

The data on TB incidence in all oblasts of Kazakhstan is available in the Annexes (Table 6.A).

Graph 6.5. Registered TB incidence per 100,000 population by oblast of Kazakhstan (1998 – 2003)

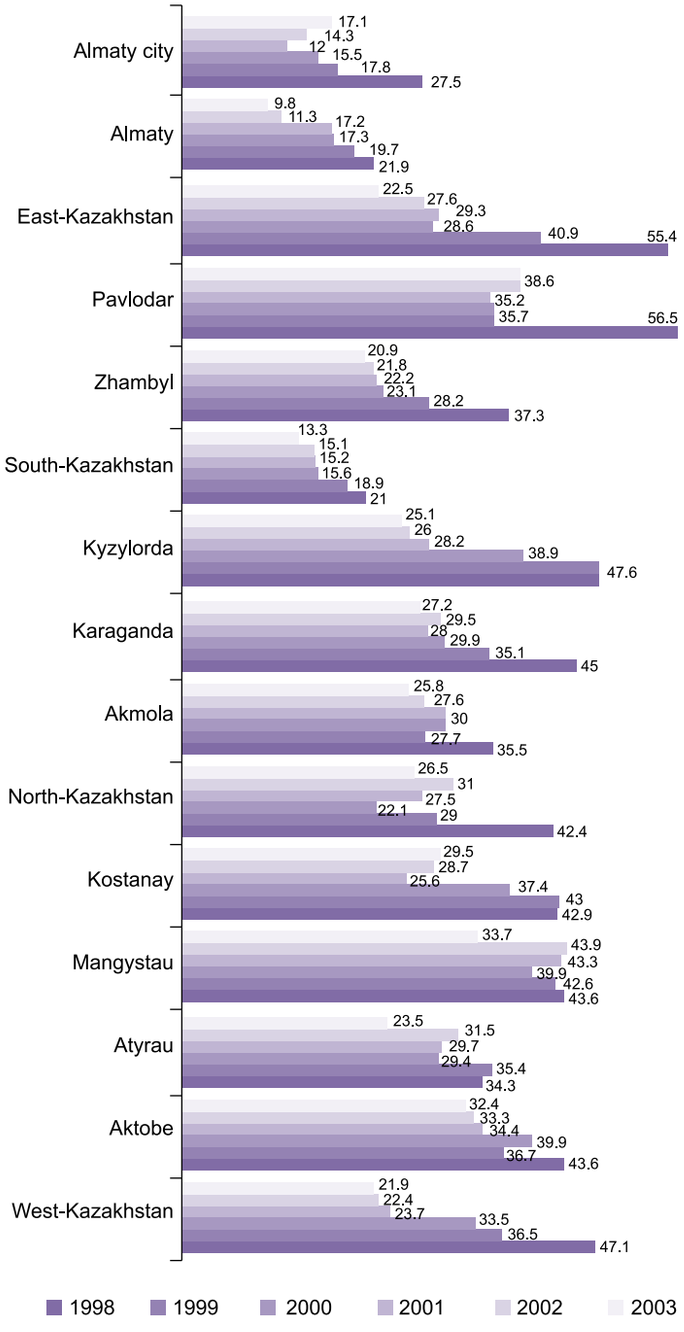


Source: Ministry of Health of the Republic of Kazakhstan. National Tuberculosis Center of the Republic of Kazakhstan. Statistical TB Reviews in Kazakhstan, 1998-2004.

Mortality from TB by oblast of Kazakhstan

In 1998, when the average mortality rate from TB in Kazakhstan reached its peak at 38.4 per 100,000 population, the highest rates, exceeding 50 per 100,000 were registered in Pavlodar and East-Kazakhstan oblasts. In seven oblasts, the rate exceeded 40, and in three oblasts – 30 per 100,000 population. The lowest mortality rates from TB – a little over 20 per 100,000 – were registered in South-Kazakhstan and Almaty oblasts. The data on mortality from TB in all oblasts is presented in the Annexes (Table 6.B).

Graph 6.6 Registered mortality from TB per 100,000 population by oblast of Kazakhstan (1998–2003)



Source: Ministry of Health of the Republic of Kazakhstan. National Tuberculosis Center of the Republic of Kazakhstan. Statistical TB Reviews in Kazakhstan, 1998-2004.

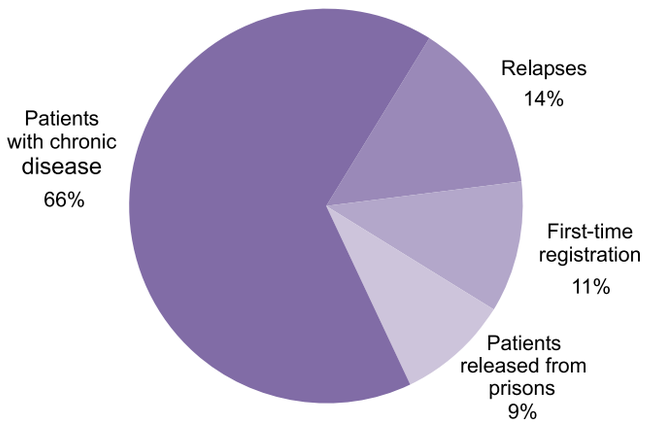
From 1998 to 2003 (Graph 6.6), mortality from TB declined in all oblasts of Kazakhstan by 23-59%. On the average, the rate of mortality from TB decreased by 42%. As this period coincides with the time of intensive implementation of DOTS and the ensuring of a systematic supply of anti-TB drugs in all oblasts, it is safe to assume that the reduction of mortality from TB was primarily due to the lowered mortality among new cases thanks to better access to and quality of treatment and monitoring.

In 2003, the mortality rate from TB exceeded 30 per 100,000 population only in three out of 14 oblasts – Aktobe, Mangystau, and Pavlodar oblasts. In the other nine oblasts, the rates did not differ much from the national average (22.4 per 100,000) and varied from 21.9 in West-Kazakhstan to 29.5 in Kostanay oblasts.

There were no significant regional disparities in the TB mortality rate, except for in South-Kazakhstan and Almaty oblasts where the mortality rate was traditionally lower – 13.3 and 9.8 per 100,000 population, respectively. Again, this was probably due to better climatic conditions in these regions because after the introduction of DOTS the quality of treatment was practically the same throughout the country.

The structure of mortality from TB in Kazakhstan is also of interest. Graph 6.7 shows the pattern of mortality from TB in Kazakhstan for 2002.

Graph 6.7. Structure of the mortality of TB patients in the Republic of Kazakhstan, 2002



Source: Ministry of Health of the Republic of Kazakhstan. National Tuberculosis Center of the Republic of Kazakhstan. Statistical TB Review in Kazakhstan. Almaty, 2003.

Интерес представляет изучение структуры смертности от туберкулёза населения Казахстана. На Диаграмме 6.7. представлена структура смертности от туберкулёза в Казахстане за 2002 год.

It follows that the overwhelming majority of deaths from tuberculosis occurred among chronic patients. At the same time, 11% of patients who died in 2002 were newly registered cases, and 14% – patients with relapses. Supposedly, deaths in the latter two categories were due to late diagnostics and registration of disease. On the other hand, it is possible that in some cases TB hyperdiagnostics was the cause of patients' death, and this would call for an assessment of how well the causes of death of TB patients are ascertained.

Drug-resistant tuberculosis

Drug-resistant TB *merged as a result of mycobacterium mutations followed by the selection of resistant strains, largely due to irregular intake and insufficient dosage of chemical drugs, and frequent interruptions in the course of treatment. Multi-drug resistant TB (MDR TB) poses a considerable threat, as its agent is resistant to at least two basic anti-TB medicines (isoniazid and rifampicin). MDR TB significantly reduces the effectiveness of anti-tuberculosis programs and increases the cost and duration of therapy (up to two years). It requires the use of second-generation medications that are more toxic compared to those of the first generation. As the number of interrupted treatments and uncontrolled medication intakes increases, MDR TB is more and more often registered among the first cases of TB. DOTS effectively prevents the development of multi-drug resistant TB (MDR TB), although its effectiveness is significantly hindered by the inititally high prevalence of MDR TB.*

According to the WHO report on drug-resistant TB[143], its overall frequency of resistance to one or more anti-TB drugs in Kazakhstan is rather high and amounts to 57.1% among new cases and 82.1% among previously treated patients. As stated in the same report, the prevalence of strains resistant to at least isoniazid and rifampicin is 14.2% among new cases and 56.4% among previously treated patients.

Main factors influencing the spread of tuberculosis

The spread of TB is closely related to living conditions in the society. Malnutrition, living in cold and damp buildings, and work in adverse conditions (dust, humidity, and low air temperature) wear out the immune system. This leads to exacerbations of latent TB infection and multiplication of agent, and causes the disease. Overcrowding leads to a fast spread of infection. Such living conditions are typical to the poor population. Moreover, the poor often cannot afford to create appropriate conditions for treatment. Table 6.2 below presents the data on correlation analysis of reported TB incidence and mortality from TB with some socio-economic indicators and the provision of healthcare services in Kazakhstan.

Correlation analysis shows a direct connection between the rate of mortality from TB and such crucial socio-economic indicators as the proportion of people with income below the subsistence minimum, the share of people with income below the food basket, and poverty depth. Other factors that influence mortality from TB include the availability of phthisitricians (TB specialists) and state spending on healthcare, which is closely related to the availability of diagnostic equipment (including laboratories) and medications.

The most important factors that influence the incidence of TB are people's living conditions, assessed by the expenses on food items. State spending on healthcare and availability of TB specialists also play an important part.

Unfortunately, the lack of data from each region makes it impossible to analyze the factors that affect the difference in TB incidence and mortality between oblasts. Nevertheless, the correlation analysis of the factors on the national level presented above may be extrapolated to the regional level, taking into account that the same factors may have a greater or smaller influence in different oblasts.

Table 6.2. Correlation between TB incidence and mortality from TB per 100,000 population and some socio-economic indicators and the provision of healthcare services in Kazakhstan

Indicators	Grade correlation coefficients:	
	with TB incidence	with mortality from TB
Number of doctors-phthisiatricians (TB specialists)	-0.487	-0.936
Number of beds for TB patients	No significant correlation	No significant correlation
Number of PHC facilities	No significant correlation	No significant correlation
State spending on healthcare	-0.569	-0.454
Food item expenditures (monetary)	-0.893	No significant correlation
Proportion of people with income below the subsistence minimum	No significant correlation	0.913
Proportion of people with income below the cost of the food basket	No significant correlation	0.786
Poverty depth	No significant correlation	0.784

[143] WHO, 2004

The above analysis indicates that the TB high-risk groups are the following:

- People placed in penitentiary institutions;
- Homeless people;
- Alcoholics and drug addicts;
- The poor;
- People with weak immune systems, including those that are HIV-positive;
- Migrants.

Unfortunately, due to the lack of data, it is hard to estimate the scale of risk for separate groups of people in Kazakhstan.

Existing statistics show a high TB prevalence in the penitentiary institutions. In 2004, experts estimated that TB incidence in the penitentiary institutions in Kazakhstan was 10 to 15 times higher than among the general population[144]. In 2002, mortality from TB in penitentiary institutions was 9 times higher than the general rate[145]. Malnutrition, low sanitary standards, poor ventilation, overcrowding, and insufficient financing of healthcare in these institutions are the reason for this situation.

One of the risk factors is the HIV infection, which increases the probability of developing TB both through exacerbation of latent infection and as a result of first or repeated contamination. Tuberculosis is the leading cause of death worldwide among people who are HIV-positive. On the average, about 30% of deaths among the HIV-positive are caused by TB[146]. According to the Republican AIDS Center, by January 1, 2005, 507 persons with HIV/AIDS died in Kazakhstan, of these, 187 of causes directly related to AIDS. According to the morphological analysis data, in 131 out of 187 people (70% of cases) various forms of lung and extra-lung tuberculosis were found. Unfortunately, the data on HIV prevalence among people who died from TB in Kazakhstan is not available now.

Migrants often fall prey to tuberculosis. According to the Agency on Statistics, over 300,000 people arrived in the country in 2001. Many of these people come from countries with high TB prevalence, and their vulnerability is further exacerbated by poor living conditions, inadequate nutrition, uncertain legal status, and limited access to social security, including healthcare services. Moreover, it is hard to provide adequate treatment to people who are constantly on the move, as the full course of therapy is at least six months long and must be carried out under the close supervision of health personnel.

Major problems

TB counteraction and the elimination of barriers to the successful implementation of anti-TB programs are strategic priorities for Kazakhstan's development. It is necessary to note the progress achieved through the active efforts of governmental and international agencies. However, a number of problems persist and require solution:

- Belated diagnostics in a number of cases;
- Patients' late application to the PHC facilities;
- Interruptions in the course of treatment (medication intake);
- The insufficient involvement of PHC facilities in the controlled chemotherapy provided to TB patients at the ambulatory stage;
- An unsatisfactory monitoring system;
- The lack of a coordinated holistic approach;
- The spread of combined TB and HIV infection;
- The TB epidemic in prisons, including the multi-drug resistant TB;
- The limited access to healthcare among vulnerable groups (persons released from prisons, homeless people, migrants, people who live far from medical facilities).

Timely detection and diagnostics are two of the components of effective TB counteraction. DOTS envisages the active voluntary application of people with symptoms of respiratory disorders for medical aid. It is very important then, for PHC personnel to be able to detect TB and carry out necessary diagnostic tests in a timely fashion. If test results indicate that the patient might be infected with TB, he/she should be referred to a TB prophylactic center. In case of late diagnostics or the absence thereof, there's a risk of the further spread of infection. Physical resources and the capacity of the PHC facilities also play an important part in primary diagnostics. The lack of professional skills among PHC personnel as well as the lack of equipment in the facilities significantly hinder TB counteraction.

Another precondition for effective TB counteraction is the **continuity of medicine intake throughout the course of treatment.** There are certain problems with ensuring such continuity at the second (out-patient) stage of treatment. The DOTS program presupposes a continuous contact between the patient and healthcare worker from diagnostics till the completion of the chemotherapy course. What hinders effective treatment at this stage is, on the one hand, both the lack of communication skills (ability to listen, use simple terms and specific examples, etc.) and the lack of knowledge about TB among healthcare personnel and, on the other hand, the patient's own unwillingness to establish contact and facilitate treatment. In some cases, patients do not understand treatment specifics; some cannot follow the prescriptions (elderly patients, children from families with problems, patients who abuse alcohol and drugs, etc.), yet others have limited access to healthcare, a bad relationship with medical personnel, or low motivation because of social problems or for other reasons. Some patients (illegal migrants and drug addicts) do not seek medical aid for fear of revealing their status and facing legal complications.

[144] Kazakhstan Today, 23 March 2004

[145] MDGR 2002

[146] P.C. Hopewell, R.E. Chaisson Tuberculosis and Human immunodeficiency Virus Infection.// In: Tuberculosis edited by Le B. Reichman and Earl S. Hershfield. USA. 2000.

Thus, to achieve effectiveness of treatment, it is necessary to create appropriate conditions for ensuring an individual approach to every patient, the goal of which would be to provide patients with the motivation to follow their prescriptions.

Successful implementation of anti-TB policy requires the introduction of **effective data collection mechanisms, the formulation of estimated figures and forecasts** on infection prevalence, and access to information on vulnerable groups and the TB incidence among them. The TB registration system cannot provide a full picture of the epidemiological situation as it is based on voluntary applications. Monitoring the epidemic's progress allows preventive measures to be taken against the further spread of TB. Moreover, it permits the effectiveness of TB counteraction activities to be tracked on the national level.

Apart from specific factors related to diagnostics, continuity of treatment, and monitoring, there are a number of socio-economic issues that contribute to the spread of TB. As mentioned earlier, factors influencing the risk of infection are related to living conditions and standards. Low access to healthcare, especially among marginal groups, also influences the epidemiological situation.

National policy

In 1993, WHO declared tuberculosis a problem of global scale and in 1994 recommended DOTS as an effective tool for global TB control. The strategy's end goal is to reduce the prevalence of TB and to prevent the economic and social damage caused by the disease.

The main elements of DOTS (Directly Observed Therapy Course) are:

1. TB detection through the bacterioscopic sputum analysis and the establishment of bacterioscopy service.
2. The standardization of short-term chemotherapy with supervised medication intake.
3. The systematic (uninterrupted) supply of high quality anti-TB drugs.
4. The establishment of monitoring of the anti-tuberculosis program, and the establishment of a registration and reporting system that allows conducting of an assessment of treatment outcomes and program effectiveness overall.
5. State support of the program.

DOTS' Key priorities include:

- The detection of 70% or more of the estimated number of smear-positive patients.
- The achievement of the Treatment Success Rate in 85% or more of new cases of sputum smear positive lung TB(WHO, 2004).

The realization of key DOTS priorities is the minimum prerequisite for the prevention of the spread of TB and for the effective control over the infection.

Standard DOTS protocols use the so-called first-generation drugs, and treatment takes 6 to 8 months, depending on the patient's therapeutic category.

Counteracting TB is one of the long-term priorities of the Government of Kazakhstan, as outlined in a number of policy documents. These include the Law on Health Protection of the Citizens of Kazakhstan (1997), the President's Decree on Priority Measures on Improving the Health of the Citizens of Kazakhstan (1998), the Government Resolution on Urgent Measures on Protecting the Population of Kazakhstan from Tuberculosis (1998), the State Program on the Health of the Nation (1998), the Law on Compulsory Treatment of People with a Contagious Form of TB who Avoid Treatment (1999), the Government Resolution on the List of Socially Significant Diseases and Diseases that are Dangerous to Other People (2000) and poverty reduction programs.

According to the Law on Health Protection of the Citizens of Kazakhstan, medical and social care should be provided to TB patients (Article 18). Dispensary observation and treatment are obligatory for TB patients, and they are provided with free TB medications and treatment in sanatoriums, as well as social benefits in accordance with the legislation. TB patients who discharge mycobacterium tuberculosis are subject to compulsory hospitalization and are provided with housing, according to the laws of Kazakhstan.

The President's Decree on Priority Measures on Improving the Health of the Citizens of Kazakhstan regulated the introduction, in 1998, of the DOTS strategy recommended by WHO as the simplest, most affordable, and most effective treatment method.

The Government Resolution on Urgent Measures on Protecting the Population of Kazakhstan from Tuberculosis was adopted in response to the growing TB incidence and mortality, which have reached the level of epidemic. The resolution defines the mechanisms for TB counteraction in the country. These mechanisms include creation of a coordination council on counteracting TB under the Government, revision of TB service financing, allocation of funds for the purchase of medical equipment and renovation of TB facilities from regional budgets, budget allocations for centralized procurement of anti-TB drugs and medical equipment, improvement of TB counteraction and prevention measures, treatment of TB patients in prisons and other penitentiary institutions, TB detection among military staff, migrants, prisoners and people under investigation, introduction of early bacterioscopy diagnostics, and short-term supervised chemotherapy in all TB facilities in accordance with WHO methods.

The President's Decree on the State Program on the Health of the Nation envisages the implementation of a set of measures to improve people's health and to reduce TB incidence, as well as mortality and disability caused by TB.

The main priorities of the introduction and implementation of the TB treatment strategy are the following:

1. The introduction of WHO-recommended TB detection and treatment methods under the DOTS program in medical and prophylactic facilities.
2. Awareness-raising activities on sanitary issues.
3. Special scientific research.

Ways to achieve this are by:

1. Training TB facilities personnel on DOTS methods of TB detection and treatment.
2. Training healthcare facilities personnel on DOTS methods of TB detection and treatment, and controlling treatment and chemical prophylaxis in contamination centers.
3. Conducting differentiated fluorographic (X-ray) examinations of people in high TB risk groups.
4. Installing necessary equipment for bacterioscopic TB detection in PHC facilities.
5. Fully providing medications to TB patients.
6. Immunizing children against TB.
7. Raising awareness among the mass media.
8. Conducting scientific research on the effectiveness of DOTS in different regions of the country.

The Law on Compulsory Treatment of People with a Contagious Form of TB who Avoid Treatment was adopted in December 1999. TB was also included in the list of diseases that are contagious, according to the Government Resolution on Approval of the List of Socially Significant Diseases and Diseases that are Dangerous to Other People (2000).

The Healthcare Agency's decrees on Improving TB Care (2001) and on the Status and Measures to Strengthen TB Counteraction in Kazakhstan (2001) contain instructions and regulations on detection and treatment methods according to DOTS and adapted to Kazakhstan's conditions.

The first projects using DOTS in Kazakhstan were implemented in 1997 by Medicines Sans Frontiers, a Luxemburg and Swiss organization, and USAID/Project Hope with WHO consultations. After its adoption on the national level in 1998, the DOTS strategy was successfully expanded and in 2000 covered over 90% of the country's population. According to USAID/CDC calculations, about 13,000 lives were saved in Kazakhstan in 1998-2001 thanks to the implementation of DOTS[147]. Project HOPE has been providing training for healthcare specialists in Kazakhstan since 1997. CDC is providing technical assistance in lab modernization, the training of laboratory personnel, and the establishment of the Electronic Surveillance Case-Management system. WHO provides technical assistance and consultations and coordinates the implementation of DOTS in the country. In Kazakhstan, the cost of one full course of treatment according to DOTS protocols is approximately $50 per patient, which is fully covered by the state.

The Treatment Success Rates for new Sputum Smear Positive TB Cases in Kazakhstan in 2002 and 2003 were 82% and 81.6% (the WHO standard is 85% or more)[148] .

Counteracting TB in prisons

Experience proves the effectiveness of implementing DOTS in prisons. In 1997-2001, thanks to DOTS, TB prevalence in penitentiary institutions in Kazakhstan declined by 61% and mortality from TB – by 85%. In 2002-2004, USAID/Project HOPE and CDC completed the first series of projects on control and prevention of TB in prisons in Karaganda. The projects conducted special training for the prison staff, created a bacteriological service, and introduced a laboratory analysis quality control system. A special social rehabilitation and adjustment course was introduced, preparing the prisoners for life after their release. One of the main training aspects was the explanation of the importance of completing the treatment. This increased the number of completed treatments among prisoners in 2004 (65% compared to the earlier rate of 8-9%). TB incidence and mortality rates in prisons were, respectively, 2.9% and 7.5% lower in 2004 than they were in 2002.

Another feature of Kazakhstan's anti-TB policy is the creation of specialized colonies (TB zones) where prisoners with TB can receive specialized medical aid. At present, there are eight such colonies with 6,000 patients. Further plans include the establishment of four rehabilitation centers for former prisoners with non-bacillary forms of TB in Karaganda, Ust-Kamenogorsk, Dzhezkazgan, and Semipalatinsk.

MDR TB policy

In 1998, to manage MDR TB, the World Health Organization proposed the DOTS-Plus strategy, which stipulates the use of second-order drugs. At the same time, WHO does not recommend introducing DOTS-Plus in countries that have not yet implemented DOTS. DOTS-Plus is required only in states with a moderate and high prevalence of multi-drug resistant TB. At present, DOTS-Plus is implemented in many countries of Latin America, Africa, and South-East Asia, and in several ex-Soviet republics, such as Estonia, Latvia, Kazakhstan, some regions of Uzbekistan, and Russia.

On the national level, the treatment of multi-drug resistant TB started in 2000. The Government of Kazakhstan provided the necessary medications. At the initial stage, four projects were implemented in Northern Kazakhstan, Southern Kazakhstan, the city of Almaty and in the National TB Center, providing treatment to 300 patients with MDR TB. In 2001, the program was expanded to cover Aktobe and Karaganda oblasts. In 2002, the number of MDR TB patients receiving second-order drugs reached 1,300 since the program was expanded to East-Kazakhstan, Zhambyl, West-Kazakhstan, Kyzylorda, Mangystau, and Pavlodar oblasts. It is planned that in future, the program will cover all oblasts of Kazakhstan. However, international organizations are questioning the reasonableness of fast expansion of DOTS-Plus, suggesting that Kazakhstan first focus on providing training and technical assistance to prospective MDR TB treatment centers.

[147] USAID, 2002

[148] Tuberculosis Statistics Reviews, Ministry of Health and National TB Center of the Republic of Kazakhstan, 1998-2004

Connection with other MDGs

Health status directly influences people's well-being and the opportunity to fully participate in the life of society. Tuberculosis is a serious threat to people's health. A fast growth of TB incidence can negatively affect the country's socio-economic development, cause reduction in the labor productivity and investor appeal of certain regions, and increase poverty. On the other hand, adverse socio-economic conditions facilitate the spread of tuberculosis. Malnutrition, imbalanced nutrition, and poor housing conditions due to low income weaken the body's defense mechanisms and create a favorable environment for the development of TB. Late application for medical aid, which complicates further treatment, is often explained by illiteracy and the marginalization of certain groups. Along with aggravating the TB problem, the growing number of HIV cases negatively affects the whole population's health, too.

In the context of the Millennium Development Goals – to eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and women's empowerment, reduce child mortality, improve maternal health, and ensure environmental sustainability – tuberculosis is one of the links in the cause-and-effect chain between the different spheres of human development.

It is necessary to note that among the MDGs, Goal 1 – eradication of extreme poverty and hunger – is the most important in relation to combating TB. It is known that two factors define whether an infected person will develop TB: 1) the size of the dose of infection, i.e. the number of mycobacteria that were received, and 2) the condition of the body's immune system. The latter is very much dependent on the way various physical and social factors affect the human body, on the quality of nutrition, and labor and living conditions, which, in their turn, depend on the economic and social development and condition of different population groups. Socio-economic factors that have a negative impact on people's health and increase the probability of getting TB include the following:

- Low income (wages) and, consequently, lack of adequate nutrition. Malnutrition reduces the body's resistance to infections and makes it more vulnerable to many diseases, including tuberculosis.
- Unsatisfactory living conditions in rural areas and a number of cities. The same goes for penitentiary institutions.
- Stress. It has been proved that stress and depression weaken the immune system and reduce resistance to infections. Stress is caused by a number of factors, including problems in the professional sphere and low socio-economic status. This then creates a favorable environment for the development of TB, especially among the so-called risk groups.

The eradication of extreme poverty and hunger will undoubtedly help reduce TB prevalence and mortality from TB in society.

The achievement of universal primary education (MDG 2) may have an indirect influence on TB incidence and mortality as the population's literacy and awareness of TB symptoms, ways of transmission, and means of receiving quality healthcare can facilitate TB prevention, timely application to healthcare facilities, and informed adherence to doctors' prescriptions.

As noted earlier, counteracting TB is closely related to the HIV/AIDS issue, as people who are HIV-positive are especially prone to develop tuberculosis. Decreasing the prevalence of TB will help reduce maternal and child mortality.

Conclusions

The TB situation in Kazakhstan is complex and multi-dimensional. In 2004, Kazakhstan achieved its mid-term national target on counteracting TB, defined by the State Poverty Reduction Program for 2003-2005.

However, throughout the country, TB incidence exceeds the epidemic threshold set by WHO. South-Kazakhstan and Almaty oblasts show relatively lower incidence and mortality figures. On the rest of the country's territory, incidence and mortality rates are relatively even across the oblasts.

A number of socio-economic problems hinder the achievement of Target 8, «Halt, by 2015, and begin to reverse the incidence of tuberculosis». However, the progress achieved in the implementation of DOTS, strong government support, and the involvement of international organizations all give reasons to count on the successful solution to the TB problem in future.

The introduction of DOTS has helped to improve the access to and quality of treatment and reduce mortality from TB in the country by almost a half (1.7 times). In 2003, the growth of the incidence rate was halted, and a reverse tendency started taking shape. The implementation of DOTS in penitentiary institutions helped to significantly reduce TB incidence and mortality rates there.

The Treatment Success Rate for new sputum smear positive TB cases in Kazakhstan is 82-81.6%, which is considerably close to the WHO norm (>85%).

The following data and factors still need clarification:

- reasons for regional disparities in epidemiological and treatment effectiveness indicators;
- data on TB prevalence among certain social groups;
- MDR TB prevalence by region and in the country overall. It is also necessary to calculate the MDR TB incidence per 100,000 population on both the national and regional levels.

There are several flaws in the way TB detection and treatment are managed in Kazakhstan:

- Late application of the patients to PHC;
- Organizational difficulties in sputum collection, storage, and timely delivery to bacterioscopy laboratories and, consequently, belated diagnosis;
- Insufficient participation of PHC facilities in providing controlled chemotherapy to TB patients at the ambulatory stage, which often disrupts treatment continuity;
- Limited access to healthcare services among socially vulnerable groups (people released from prisons, homeless people, migrants, people who live in remote rayons);
- Not sufficiently frequent monitoring of anti-TB program in regions.

Taking into account the progress already achieved in DOTS implementation, and if the discussed barriers are overcome, it is possible to expect that the target of halting by 2015 the spread of tuberculosis and ensuring sustainable reduction of mortality from TB will be achieved. However, a number of socio-economic problems hamper the achievement of the other part of the target, the stabilization of TB incidence. Achieving this goal simultaneously in the whole territory of Kazakhstan by 2015 will hardly be possible.

MDG 7 | Ensure Environmental Sustainability

Significance for Kazakhstan

All the goals outlined in the Millennium Declaration are aimed at achieving the main human development goal: to create a political, economic, cultural, and ecological environment conducive to leading a healthy and productive life.

The problem of using technologies that damage ecosystems and people's health and undermine the resource potential is especially acute in Kazakhstan, a country that has undergone significant transformation in the past ten years with its transition from central planning to a market economy and democracy. Kazakhstan possesses all the resources – natural, human, intellectual, industrial, financial, etc. – needed for the country's sustainable development. However, it has not yet adopted a balanced and harmonized approach to resource use, (an approach in which different elements of the management system work towards a common result).

As is the case with other Goals, a set of Targets and indicators was developed to evaluate the progress of MDG 7, and it looks as follows:

Target 9. Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

Indicators

- ***Proportion of land area covered by forest***
- ***Land area protected to maintain biological diversity***
- ***GDP per unit of energy use (as proxy for energy efficiency)***
- ***Carbon dioxide emissions (per capita), and Consumption of ozone-depleting substances (t)***

Target 10. Halve, by 2015, the proportion of people without sustainable access to safe drinking water

Indicators

- ***Proportion of people with sustainable access to improved water source, urban and rural***

Target 11. Achieve, by 2020, a significant improvement in the lives of at least 100 million slum dwellers

Indicators

- ***Proportion of households with real estate, own or rented***
- ***Proportion of people with access to improved sanitation***

Goal 7 is focused on ensuring the appropriate environmental conditions for achieving sustainable development. The above system of indicators is by no means a stable and exhaustive system for the assessment of sustainable development. Each country has its own priority development spheres. The above indicators serve as a basis to guide the process of ensuring environmental sustainability, and to monitor trends and make assessments on both national and international levels.

To see the progress, 1999 was taken as the baseline year, although Kazakhstan started pursuing the sustainable development course earlier, three years after the concept's emergence at the Rio conference in 1992.

Target 9:

Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

Table 7.1.

Type of Environmental Damage	Estimated Annual Cost (billion tenge/ year)
Land degraded by agriculture (179.9 mln ha (66% of total land area)	24.6
Land pollution with solid wastes	13.7
Aral Sea catastrophe	139.5
Loss of biodiversity	44.0
Caspian Sea transgression	31.4
Water pollution and depletion	12.2
Total	265.4

Source: Review of the effectiveness of environmental activity in the Republic of Kazakhstan. www.nature.kz

Target 9 status in Kazakhstan

According to Target 9, Kazakhstan should, by 2015, integrate the principles and elements of sustainable development in its programmes and plans on the national and oblast level, which will, in its turn, help reverse the loss of environmental resources. As for reversing the loss of resources, experts say that the target is very hard to achieve. It is also necessary to note that Kazakhstan is experiencing dynamic and technology-intensive economic growth, which should be taken into consideration in the discussion of barriers to achieving the target.

Environmental sustainability goals were set globally and envisage, first of all, halting the loss of forests, land fertility, and water resources (in particular, to solve the problems of water pollution and re-distribution). It means that countries should focus their efforts on addressing global priority issues, such as climate change, biodiversity conservation, effective forest and water resources management, and reducing the negative anthropogenic impact on the environment.

Kazakhstan continues to suffer from the effects of inappropriate environmental management practices and the use of depreciated production equipment inherited from Soviet times. This means that an extremely heavy technological burden is being placed on the environment.

One example is the intensive land degradation and landscape depletion caused by extensive agricultural practices and the poor management of irrigation systems. This leads to the loss of fertile land, degradation of pastures and arable lands, and deterioration of the yield and quality of agricultural produce. Ignoring the environment and continuing unsustainable practices also have economic costs. The following table presents several examples as an illustration:

Vast territories have suffered from the work of military testing sites and space launches. Four hundred and seventy nuclear explosions were carried out at the Semipalatinsk test site, with half a million people exposed to radiation. As a result of nuclear tests at the Semipalatinsk polygon, over a million hectares of land have been put out of use for years to come, as was announced by President Nazarbayev during his visit to the National Nuclear Center[149].

The problem of recycling industrial and municipal wastes persists as the country does not have a national waste management system. There are over 20 bln tons of wastes accumulated on the territory of Kazakhstan, including 6.7 bln tons of toxic wastes, and the figures are rising. The bulk of unsorted solid waste is accumulated in open dumps, 97% of which do not comply with sanitary and environmental norms. Only 5% of municipal wastes in the country are recycled or burnt. This is mostly due to the use of obsolete technologies, the poor quality of raw materials and fuel, the unwillingness on the part of enterprises to invest in recycling and disposal of industrial wastes[150], and inadequate legislation to force the industries to do so.

Water polluted with both industrial and municipal waste is also a serious problem. The most polluted rivers are the Irtysh, Nura, Syrdarya and the Ili, plus Balkhash Lake. Groundwater,

[149] Kazakhstanskaya Pravda newspaper, 4 December 2003.

[150] Concept of Environmental Safety of the Republic of Kazakhstan for 2004-2015. Approved by the President's Decree #1241on December 3, 2003.

Three zones representing priority environmental problems

Zone	Oblasts	Environmental priority
A (Caspian)	Atyrau Mangystau	Oil pollution: - water pollution - air pollution - desertification - loss of biodiversity
B (Eastern)	East-Kazakhstan Pavlodar Karaganda Akmola	Industrial pollution: - water pollution - air pollution - degradation of forests (deforestation) - waste management (including toxic wastes)
C (Southern)	Almaty South-Kazakhstan Zhambyl Kyzylorda	Impractical water management: - water pollution - desertification - water deficit

which is the primary source of drinking water in many areas, is also being polluted. Inefficient irrigation practices and incorrect control of river flows lead to shortages of water in rivers and other water reservoirs. The shortages are not caused so much by the overall water deficit in the country, but rather by the poor management of water resources. The Aral Sea problem is well known, and its root causes are also observed in other water objects of Kazakhstan. There is now real concern that should these negative tendencies persist, Balkhash Lake may face a similar fate to that of the Aral Sea.

Industrial and oil-and-gas enterprises and transport, especially in large cities where the number of vehicles is drastically increasing, are the main sources of air and soil pollution.

While examining the geographic distribution of environmental problems across the oblasts, it is necessary to consider that the situation in a region is influenced by several factors, including the availability of environmental resources, the main economic activities (industry, oil-and-gas, agriculture), the number of industrial enterprises, the availability and amount of water resources, etc. Analyses carried out for the National Environmental Action Plan (NEAP) identified six of the 14 oblasts as the most problematic in terms of environment. These are Atyrau, Kyzylorda, South-Kazakhstan, Karaganda, East-Kazakhstan, and Pavlodar oblasts. More specifically, three zones representing priority environmental problems were identified.

Target 9 is measured by five basic indicators related to the sustainable development and rational use of environmental resources: the sustainable management of forests, the preservation of biological diversity and genetic resources, efficient energy use, the reduction of the greenhouse effect (which causes global warming), and control over the consumption of ozone-depleting substances.

Forests

The forests indicator is used to observe the change in the area of forests and is defined by the ratio of total land area to the area covered by forests.

While the country's total area is vast (272.5 mln ha), the area of forest fund is 26.5 mln ha, of which the **land area covered by forests is only 12.3 mln ha**. This amounts to only 4.5% of the country's territory (excluding saxaul and shrubs, 2.3% or 5.75 mln ha)[151]. Nevertheless, in terms of the total area of forests, Kazakhstan is third in Eastern Europe and Central Asia, after Russia and Turkey. According to the traditional measure of forest abundance (the total growing stock of timber), equal to 383.7 mln m^3, Kazakhstan is lagging behind a number of countries in Eastern Europe. The limited productivity of forests on most of Kazakhstan's territory is due to the desert climate and shortage of rainfall[152].

Because of its landscape diversity, Kazakhstan can be regarded as several forest regions geographically separated by large portions of bare area, which are central and western deserts and semi-deserts. About 70% of forests are situated in the south and southeast parts of the country. They are mostly composed of saxaul shrubs, which stabilize vegetation, are a valuable source of firewood, and provide shade for cattle.

Mountain forests in the south-east and south of Kazakhstan (about 20% of the country's forest land) are highly valuable for rich biodiversity and recreational functions. Birch and coniferous copses, scattered among highly productive agricultural lands in the north, serve as the main sources of firewood and have a significant environmental and recreational value. Due to extreme aridity, there are practically no forests in the western and central parts of the country.

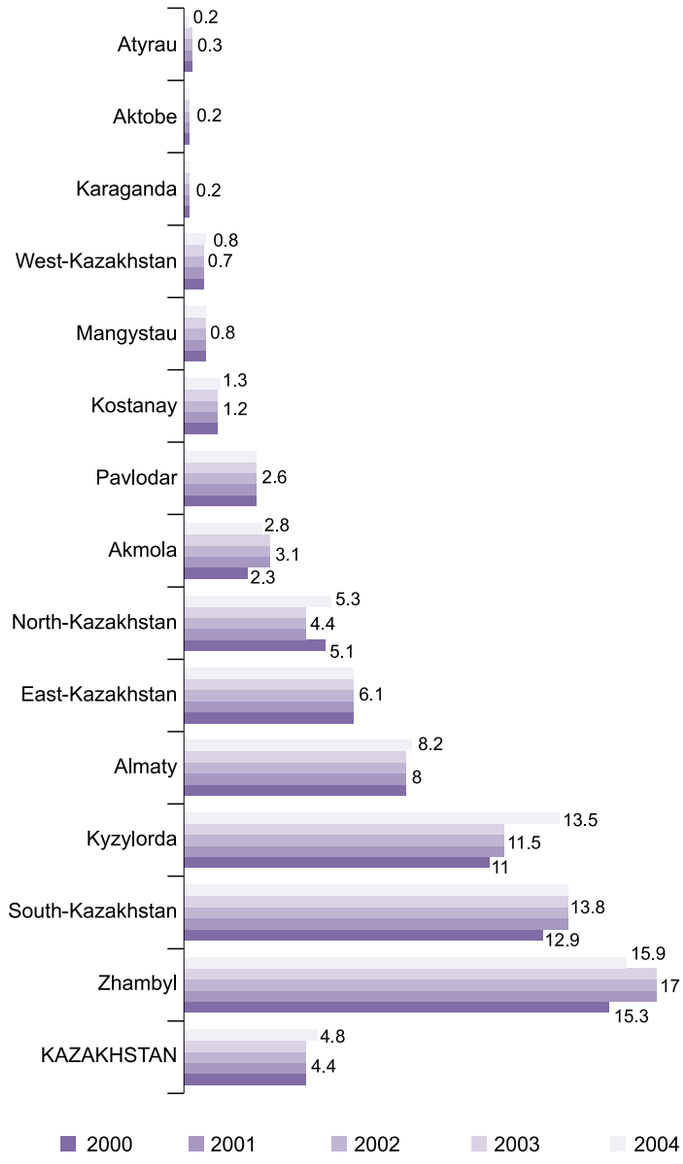
About 80% of Kazakhstan's forests are concentrated in the northern and north-eastern regions. Half of the standing volume is comprised of coniferous woods of East-Kazakhstan oblast where the main industrial-scale lumbering operations are carried out. The proportion of land covered by forest varies from oblast to oblast, ranging from 0.1% to 15.9%.

Unfortunately, in the past several years, this valuable environmental resource has been strenuously depleted. Forest reserves are significantly damaged by the following:

- forest fires, the number and scale of which increase every year;
- illegal felling;
- excessive pasture;
- falling groundwater levels;
- development of agricultural lands;
- shrinkage of flood-plain forests, and
- pests and diseases.

According to the recent analysis presented in the State Program «Forests of Kazakhstan», the condition of forests has drastically deteriorated during the reform and reorganization

Graph 7.1.Change in percentage of forest land by oblasts, 2000–2004



Source: Data of the Agency on Statistics of the Republic of Kazakhstan

period due to the failure to implement forestry measures in a planned and consistent manner. One of the reasons was intensive exploitation of coniferous wood and large fires in 1996-2002 in East-Kazakhstan, Kostanay, Akmola and Almaty oblasts, which decreased the standing volumes of forests. This in turn led to the loss of the protective and water conservation functions of forests, and then to the drastic deterioration of their sanitary condition.

Coniferous forest belts of the Irtysh area have been assigned to the «particularly valuable forests» category, which envisages a ban on major harvesting. On 23 April 2004, to strengthen the protection of forests from illegal felling, the Government issued a resolution prohibiting major harvests in coniferous and saxaul lands of the state forest reserves for the next ten years.

[151] Data of the Agency on Statistics of the Republic of Kazakhstan. Almaty, 2005, and the Programme of Environmental Protection of the Republic of Kazakhstan for 2005-2007, approved by the Government Resolution #1278 on December 6, 2004.

[152] Kazakhstan. Forest Sector in the Transition Period: Resources, User, and Sustainable Use. Andrey Kushlin and others. World Bank technical document (a paper for public discussion). Series of documents on environmentally and socially sustainable development, Europe and Central Asia.

Specially protected areas

The Specially Protected Areas (SPA) indicator points to progress in biodiversity conservation measured by the existence (and/or increase in the area) of protected nature territories. Sustainable development is impossible without the conservation of biodiversity. In this regard, SPAs allow the conservation of flora and fauna habitats and genetic resources.

At present, there are a total of 106 SPAs in Kazakhstan, of which there are 57 reserves, 26 nature monuments, 10 national nature reserves, 8 national parks, 4 reserved zones of national significance, 3 state zoological parks, 5 state botanical gardens, 3 globally significant wetlands included in the Ramsar Convention list, and 2 state forest reserves. Kazakhstan boasts a large variety of natural habitats populated by a very rich diversity of flora and fauna. Over 400 species of plants are currently under the threat of extinction, 56 species of birds, 40 species of mammals, 17 species of fish, and 13 amphibia are included in the Red Book.

According to the 2004 data of the Committee on Forestry and Hunting, the total area of SPAs in Kazakhstan is 14.1 million hectares[153], or 5.1% of the country's territory, which is insufficient to preserve an ecological biodiversity balance and is below the 10% standard recommended by the World Conservation Union (IUCN). The «Concept of development and allocation of SPA till 2030», includes a plan to increase the total area of SPAs to 17.5 million hectares. This constitutes 6.4% of Kazakhstan's territory, including national nature reserve areas (1.6%), national parks (1.4%) and state nature monuments and reserves (3.4%).

Out of all types of SPAs, national nature reserves and national parks play the leading role in conserving biodiversity as no economic activity can be carried out on their territories. Such national reserves and national parks have a two-kilometer buffer zone, which reduces the negative impact of economic activities on the nature of reserves and parks. According to various estimates, 70% of the country's biodiversity is concentrated in national reserves and parks.

The Tables 7.2-7.4 show the number and sizes of the national nature reserves and parks as well as their locations across the oblasts.

SPAs are present in practically all oblasts but, unfortunately, the sub-zone of desert-steppes does not have an SPA regime. Southern (moderate-warm) deserts are partially covered by the Usturt reserve, but the typical communities of rare saltworts and other plants, and rare and disappearing animal species are left outside of the protected areas. The unique vegetation and animal species of Saur-Tarbagatay and Jungar Alatau, the flood lands of the Irtysh and Irgiz, and the flood lands and deltas of the Ural and Ili rivers are not protected either.

The reasons for the loss of biodiversity are: destruction and degradation of natural habitats, destruction of forests, soil erosion, water pollution, excessive gathering of various plants and animals, introduction of alien plants and animal species, etc. Also, the deeper the socio-economic development of the territories, the more the SPA network turns into a system of isolated islands that do not provide for sustainable conservation of ecosystems. On the other hand, a significant increase in the area of SPAs conflicts with the socio-economic development of the country because the land designated for the creation of SPA is put out of economic use. Therefore, enlargement of the SPA network should take into account environmental, social, and economic components for the balanced development of the country.

Table 7.2. National nature reserves

#	Oblast	Year of creation	Title	Area (thousand ha)	Protected landscape
1.	South-Kazakhstan	1926	Aksu-Dzhabagly	85.7	Mountains, forests
2.	Kostanay	1931	Naurzum	87.6	Steppe, lakes
3.	Almaty	1960	Almaty	71.7	Mountains, forests
4.	Kyzylorda	1960	Barsa-Kelmes	71.7	Desert
5.	Akmola	1968	Kurgaldzhino	252.3	Wetlands
6.	East-Kazakhstan	1976	Markakol	75.0	Mountains, forests, lakes
7.	Mangystau	1984	Ustyurt	223.3	Desert
8.	East-Kazakhstan	1992	West-Altay	56.1	Mountains, forests
9.	Almaty	1998	Alakol	12.5	Wetlands
10.	South-Kazakhstan	2004	Karatau	34.3	Mountains, valleys, rivers
	Total:			**928.5**	

Source: Environment and Development Nexus in Kazakhstan. UNDP Kazakhstan. Almaty, 2004.

[153] According to the 2005 data of the Agency on Statistics, the total area is 2.89 million ha. Such a discrepancy in numbers is due to the fact that the Agency on Statistics does not account for the area of reserved zones, which were created and ascribed to SPAs of national significance in 2000-2004, and state nature reserves (zakaznik) of national significance.

Table 7.3. National parks

#	Oblast	Year of creation	Title	Area (thousand ha)	Protected landscape
1.	Pavlodar	1985	Bayanaul	50.7	Lakes, pinery
2.	Almaty	1996	Ile-Alatau	165.4	Mountains (fir woods, Alpine meadows)
3.	Akmola	1996	Kokshetau	135.8	Forest-steppe (pineries, rivers, steppe)
4.	Almaty	1996	Altyn-Emel	209.6	Desert (sandy and rocky)
5.	Karaganda	1998	Karkaraly	90.3	Steppe (pineries, lakes, steppes)
6.	Akmola	2000	Burabay	84.1	Mountains and steppes (pineries, lakes, steppes)
7.	East-Kazakhstan	2001	Katon-Karagay	643.4	Mountains and forests
8.	Almaty	2004	Charyn	93.5	Steppe, mountains, rivers, valleys
	Total:			**1461.8**	

Source: Environment and Development Nexus in Kazakhstan. UNDP Kazakhstan. Almaty, 2004.

Table 7.4. Change in the total area of SPAs over the years (thousand km²)

1999	2000	2001	2002	2003	2004
–	1,247.1	1,246.1*	1,378.1	2,659.9**	14,102[154]

Source: Environmental Protection and Sustainable Development, statistical collection. Agency on Statistics of the Republic of Kazakhstan. Almaty, 2004. (Based on the data of the Agency on Land Management of the Republic of Kazakhstan).

** According to the Committee on Forestry and Hunting, in 2001, the area of SPAs was 1,646 thousand km²*

*** According to the Committee on Forestry and Hunting, in 2003, the area of SPAs was 3,414 thousand km²*

Energy efficiency

The current period of development is sometimes characterized by three «Es» – energy, economy, and environment. Energy holds a special place in this group, as it defines a country's economic potential and the well-being of its citizens. It also has the greatest impact on the environment, ecosystems, and biosphere overall. The most acute environmental problems (climate change, ozone layer depletion, acid rains, etc) are in one way or another related to energy production or consumption. Therefore, the solution of environmental problems depends on the possibility of solving energy-related problems.

The ratio of energy consumption to GDP unit PPP (purchase power parity) is the indicator of the economy's power consumption and energy efficiency. The structure of energy supply and efficient use of energy in the country are key factors that define the environmental condition and sustainable development of the economy.

Kazakhstan is lagging far behind several industrially developed countries (by a factor of 7-10 times) in terms of energy use per GDP. One of the reasons is the deterioration of the basic operating assets of industrial enterprises. By 2001, the average proportion of deterioration of the basic assets was 29.7%. In several branches of the industrial sector, physical deterioration

Table 7.5. Industrial use of electric power in different countries (kWh per $1 of GDP)

Country	1995	1999	2000
Great Britain	0.30	0.25	0.23
Turkey	0.51	0.59	0.56
USA	0.42	0.66	0.58
China	1.44	1.21	1.22
Kazakhstan	4.01	2.82	2.81
Russia	2.55	4.37	3.38
Kyrgyzstan	8.24	10.56	--

Sources: 1) Materials of the CIS Intergovernmental Statistics Committee, 2000-2002; 2) IMF statistical compilations, International Financial Statistics, 2002

[154] Data of the Committee on Forestry and Hunting.

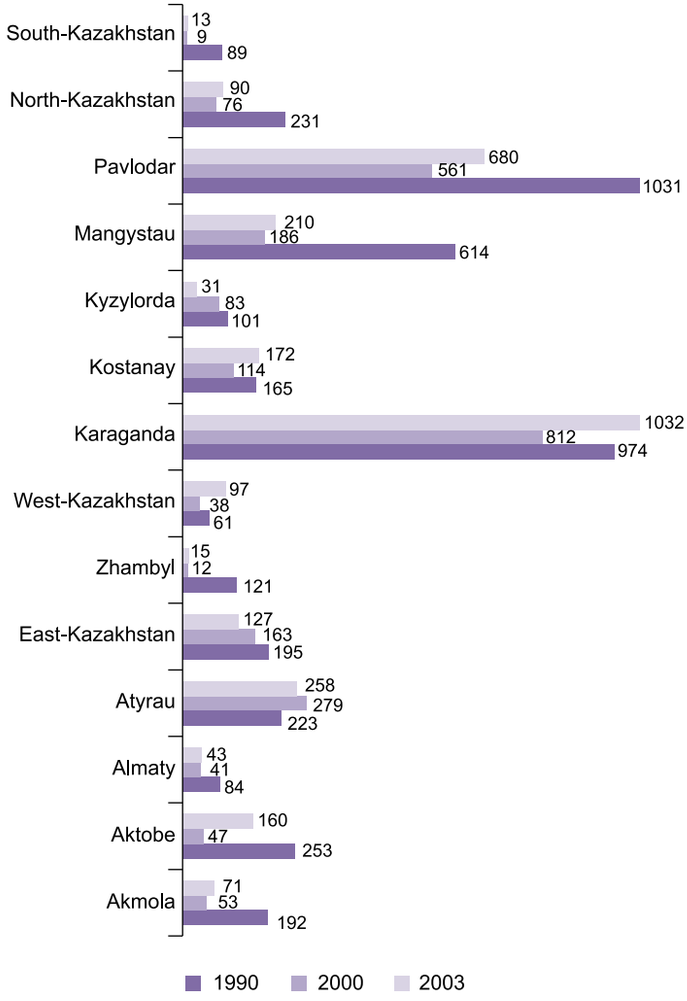
is approaching or exceeding 50%, leading to a reduction of the economy's competitive capacity. Deterioration of basic assets also affects the overuse of fuel and the feasibility and reliability of energy saving, thus hindering the socio-economic development of the country.

Kazakhstan uses almost 2.8 kWh per $1 GDP, while such countries as Great Britain, Germany, Italy, and Japan use 0.22-0.3 kWh, and the USA, France, Turkey, and Korea spend 0.4-0.6 kWh; Canada and China spend 0.8-1.2 kWh. Kazakhstan's industrial policy should ideally strive to achieve such levels as mentioned above and use these indicators as a reference point.

Greenhouse gases

The greenhouse gases emissions indicator measures the control over carbon dioxide emissions, mostly as a by-product of energy production and consumption. The global warming effect is the result of increasing emissions of pollutants into the atmosphere (greenhouse gases) due to the growing use of energy resources around the world. Carbon dioxide constitutes the greatest part of greenhouse gases. Climate change may intensify desertification and land degradation processes, reduce agricultural productivity, and increase water resource deficits. It is important to stabilize the concentration of greenhouse gases in the atmosphere at a level that will not allow the exertion of a dangerous anthropogenic impact on the climate system.

Graph 7.2. Per capita air pollutant emissions from stationary sources, by oblast (kg)



Source: Environment Protection and Sustainable Development in Kazakhstan, Agency on Statistics of the Republic of Kazakhstan. Almaty, 2004.

The analysis of per capita emissions from stationary sources shows that in 2003, the greatest emissions occurred in Karaganda, Pavlodar, Atyrau, Mangystau, Kostanay, and West-Kazakhstan oblasts, where most of the mining and processing industrial enterprises are located. Ten cities were classified as the most polluted, including Ust-Kamenogorsk, Shymkent, Aktobe, Ridder, and Almaty. The level of air pollution in these cities exceeds both the international and national standards. Exact data on per capita carbon dioxide emissions by oblast is not available.

Throughout the country, the amount of polluting emissions from stationary sources is increasing, and this trend will most probably persist given the current production growth rate.

Table 7.6. Per capita air polluting emissions from stationary sources in Kazakhstan (t)

	1999	2000	2001	2002	2003	2004
Emissions from stationary sources	0.155	0.163	0.174	0.170	0.193	0.200

Source: Agency on statistics of the Republic of Kazakhstan, 2005.

According to the 2003 report on the condition of the environment in the Republic of Kazakhstan prepared by the Ministry of Environmental Protection, there are five main sources (economic sectors) of greenhouse gas emissions: energy, industrial processes, agriculture, changes in land tenure and forestry, and wastes. Kazakhstan is the largest producer of anthropogenic greenhouse gas in Central Asia and is third among former Soviet republics, after Russia and Ukraine.

According to the 2002 greenhouse gas inventory, net emissions in Kazakhstan, accounting for CO_2 absorption by forests, were 178.6 mln t of CO_2 equivalent. In 2003, net emissions reached 180.5 mln t of CO2 equivalent. As the table below illustrates, the share of carbon dioxide, one of the most important gases with a direct greenhouse effect, is the most significant and amounted to 79.4% of the total greenhouse gas emissions in 2003.

Table 7.7. Per capita carbon dioxide emissions (tons per year)

	1999	2001	2002	2003
Net per capita carbon dioxide emissions, tons	8.0	8.1	9.6	10
Net per capita greenhouse gas emissions, tons of CO_2 equivalent	10.2	10.1	12.6	12.6

Source: Data of the KazRIEC and Coordination Center on Climate Change (public foundation)

Compared to 1996, when per capita carbon dioxide emissions in Kazakhstan were 12.2 t, which is 10% more than the average emissions in the OECD countries, this figure decreased by 18% by 2003. However, compared to 1999, per capita emissions grew by 25%, and compared to 2001, by 4%. Remarkably, the amount of per capita emissions in 2003 was the same as in 2002, but the share of carbon dioxide in them increased. This means that Kazakhstan's economy becomes more energy intensive when heat and electricity production are accompanied by high rates of consumption of mineral fuels and significant air pollution by toxic emissions and greenhouse gases.

The energy sector continues to contribute the greatest share to the national emissions (80.4%); the second largest source is agriculture (9.2%), followed by industrial processes (7.7%).

Consumption of ozone-depleting substances

Phasing out ozone-depleting substances (ODS), substituting them with less harmful substances, and using more advanced technological processes are actions aimed at restoring the Earth's ozone layer. There is some progress in this sphere, achieved through the decrease of global consumption of chlorofluorocarbons. According to the World Meteorological Organization, ozone layer depletion in the past 25 years amounted to 10%. Above the territory of Kazakhstan, where ozone layer observation has been conducted at five stations since 1973, ozone layer thickness has decreased by 5-7%. On some days, the proportion of ozone in the atmosphere may be even lower, increasing the level of dangerous exposure to UV radiation[155].

Kazakhstan does not produce substances controlled by the Montreal Protocol but only consumes them. In 1998, Kazakhstan consumed about 1,304.7 tons of ozone-depleting substances. Per capita consumption of Annex A and B substances of the Montreal protocol in Kazakhstan is 0.077 kg. The biggest consumer of ozone-depleting substances in the country is refrigerator maintenance service, the needs of which amounted to 663.76 tons of ODS in 1998.

Table 7.8. Distribution of ozone-depleting substances by Annexes to the Montreal Protocol

Annex, group	Tons of ODS, (%)
A, 1 (chloroflourine carbon – CFC)	1,079.9 (83)
A, II (gallons)	169.5 (13)
B (carbon tetrachloride, methyl chloroform)	19.47 (1.5)
C (hexachlor fluorine carbon)	5.99 (0.5)
E (methyl bromide)	30.0 (2.3)

Source: Data of the Coordination Center on Climate Change (public foundation)

By becoming a party to the Vienna Convention and Montreal Protocol, Kazakhstan has agreed with the necessity of reducing and, in future, completely phasing out the use of ozone-depleting substances, as well as replacing them with substances that have lesser ozone-depletion capacity. Towards this end, the country has a National Program on Phasing out Ozone-Depleting Substances.

Inventory of the ozone-depleting substances was carried out in Kazakhstan from March to November 1998. Inventory collected data on ODS consumers and importers in Kazakhstan. Ministries, government departments, institutions, and organizations were informed about the necessity to conduct inventory and provide data on ODS consumption and the capacity to develop and implement projects on phasing out ozone-depleting substances[156].

Major problems

Through the 1990s, state financing of forestry and environmental protection in Kazakhstan decreased drastically, and by end of the1990s, all work in reforestation, and forest management and protection was practically stopped. By the end of the 90s, forest management structures were reorganized with a view to divide economic and supervision functions. Following the recent restoration of the budget system, state financing of forestry has been gradually increasing.

The data on forest resources and its analysis are obsolete, making it impossible to conduct appropriate planning of forestry activities at this time. Increases in the proportion of forestland are insignificant, and the sector is suffering from high personnel turnover. The strategic management system suffers because of a lack of public participation in the decision-making process. Also, there is still no assessment of the forest's true economic value, which leads to numerous management mistakes. While asserting its true national value, we continue to assess the forest in terms of cubic meters of firewood.

The incompatibility of environmental legislation with other branches of law and international standards and the low level of financing for SPA regulation are also among the factors that hamper the conservation of flora and fauna.

The main consumer of primary energy resources in Kazakhstan is the electricity and heat production sector (by about 50% of the total consumed fuel); it is therefore the main source of emissions that pollute the atmosphere: ashes, serum and nitric oxides, carbon oxide, and other chemical substances. The basic mineral resources of the country's fuel and energy complex are coal, oil, and natural gas, the reserves of which amount to approximately 45.4 billion tons of fuel equivalent.

Significant air pollution caused by the energy sector is partly due to the use of low quality coals and partly to the lack of emissions-cleaning equipment at the thermoelectric power stations and boiler-houses. In the 1990s, due to a decline in energy and heat production, emissions of polluting substances by the energy sector decreased by almost 50%. Nevertheless, the problem of air pollution by the energy sector remains topical, especially taking into account the recent growth in energy production.

An expert forecast on the consumption of ODS in all sectors of economy till January 2004 laid out two options. First, in case

[155] Environmental Protection in the Republic of Kazakhstan in 2005-2007 Program, approved by the Government Resolution #1278 on December 6, 2004.

[156] http://www.climate.kz/ozone/main_prog.ht

measures on implementing the Montreal Protocol provisions are rejected, ODS will be purchased at current prices from existing suppliers. Development of the demand for ODS will lead to growth in their consumption, and by 2010 the rate of ODS consumption in Kazakhstan will exceed the 1998 rate 1.8 times. If, however, ODS phasing-out projects are implemented, ozone-depleting substances should be completely withdrawn from all sectors of economy by the end of 2004[157].

There are a number of methodological problems with developing certain indicators and other technical difficulties, and there is no unified environmental monitoring system, which makes it difficult to see the real picture. There is reason for hope that these obstacles will be overcome with the help of the Government-approved Program of Improving National Statistics for 1999-2005, which envisages introduction of an internationally compatible system of sustainable development indicators.

The work of various monitoring systems so far does not provide a full picture of the condition of the environment. Monitoring systems, services, and networks mostly register environmental pollution. They report to various departments and are disconnected in terms of methodology, program, and organization. Coordination is practically absent, which allows neither thematic environmental problems to be addressed nor informed and efficient management decisions to be made.

The practical implementation of environmental protection measures is hindered by many problems related to the incomplete formulation of environmental management systems. One of the main problems is inadequate or insufficient environmental legislation even though there are about 30 laws and 200 standard legal regulations in the legislation. A lack of effective mechanisms for implementing environmental legislation is observed everywhere. There is also no coordination system for fulfilling the commitments of the international environmental conventions and agreements.

National policy

Concerning the goal of environmental sustainability, it is necessary to note that Kazakhstan has taken a number of commitments upon itself by signing such international environmental conventions as the Convention on Biological Diversity, Convention on Climate Change and the Kyoto Protocol (not yet ratified), Convention on Combating Desertification, Vienna Convention on preserving the ozone layer and the Montreal Protocol, and others. One of the main commitments under these conventions is the development and implementation of national plans and strategies.

In the past several years, the Ministry of Environmental Protection adopted the National Environmental Action Plan for Sustainable Development (NEAPSD), the National Strategy and Action Plan for Balanced Use and Conservation of Biodiversity, National Strategies and Action Plans for combating desertification and climate change, and the National Program on Phasing Out Ozone-Depleting Substances. Although these documents are not Government-approved programs or legislative acts adopted by the Parliament (excluding the Program on Combating Desertification for 2005-2015, approved by the Government in January 2005), it is necessary to appreciate their significance. The NEAPSD, for example, has laid a good basis for long-term programs on both national and regional levels.

Since independence, Kazakhstan's environmental legislation has formed into a separate branch of law. The Law on Environmental Protection (1997) has played an important part in its formation, as it laid the foundations for complex regulation of the interaction between society and the environment. Environmental and resource legislation was codified, and the Land, Water, and Forest Codes were adopted in 2003. The legal regulation of environmental management goes beyond environmental protection, which, however, still requires «ecologization» of nature management. The Laws on Air Protection (2002), on Energy Conservation (1997), on Power Industry (2004), on Specially Protected Areas (1997) and on Protection, Reproduction, and Use of Fauna (2004) are the ones most conducive to implementing alternative technologies and reducing environmental pollution, consumption of energy resources, and generation of wastes.

The Ministry of Environmental Protection adopts special programs aimed at achieving one of the Government's priority targets – environmental stabilization through the reduction of impact of the economic activity. In this regard, it is important to note that the Government, in order to implement the programs approved by the Ministry of Environmental Protection, determines priority measures for a certain period of time (one-year, five-year period, etc) on the oblast level.

At the sector level, the Government has approved a number of programs related to basic indicators of sustainable development that should be implemented in all oblasts of Kazakhstan. These programs include the Drinking Water program for 2002-2010, the Forests of Kazakhstan program for 2004-2006, the Concept of Development and Allocation of SPAs till 2030, the Program on Development of Rural Territories for 2004-2010, and others. The Concept of further development and allocation of SPAs is aimed at the conservation and restoration of

[157] http://www.climate.kz/ozone/main_prog.htm

ecosystems on the territory of Kazakhstan, the maintenance of environmental balance, and the detection of development patterns of natural complexes and their components. The Forests of Kazakhstan program is aimed at stabilizing the situation with the conservation, protection, and reproduction of forests and their sustainable use, and by building capacity for further enhancement of the forest management efficiency.

The development of Agenda 21 for Kazakhstan is in progress. Agenda 21 is a new model of inter-sector integration of the economy, environment, and social spheres. «Local Agendas 21» can become components of Kazakhstan's national Agenda 21, i.e. these may be the plans of economic and social development, based on SD principles, for oblasts, cities, and regions. In addition to this, the Agenda 21 concept accounts for interrelated environmental, economic, and social development goals through the use of a special SD-indicators system that allows for the achievement of sustainability at the national and regional levels and for monitoring the progress in comparison to other countries.

Planning for ensuring environmental sustainability is a complex and multi-faceted task, which should involve various governmental bodies and agencies and other interested parties (the private sector, local communities). It is an iterative process, which means that after the term of program or plan implementation is complete, the National Strategy or concept should be revised and, based on the identified priorities, new programs and plans should be adopted.

Conclusions

It is still early to talk about reversing the loss of environmental resources because current economic development trends hinder the process.

Human activity causes degradation of natural resources and environmental pollution. However, there appears to be a gradual improvement in the understanding that economic domination of decision making over development needs to be reduced and greater emphasis needs to be placed on social and environmental considerations. The concept of sustainable development is to protect resources and ecosystems and leave them undamaged for future generations.

Kazakhstan is implementing measures on integrating the principles of sustainable development in its national policies, but there is no official program specifically aimed at the conservation and rational use of resources and the achievement of sustainable development.

The Government should create better policy foundations to differentiate the forestry management system by region, gradually delegate well-defined functions to the oblast and rayon levels, and create a basis for delegating certain forestry management responsibilities to the local population, farmers, and the private sector.

The country needs to evaluate the condition of biodiversity and conduct its inventory. Possibly, a complex assessment and decision on expanding or reducing the territory of SPAs will be included in the next long-term Program on nature reserve activities and SPAs network, which is expected to be developed by the Government in the near future.

The stabilization of the amount of emissions during the gradual industrial development can be achieved through the introduction of clean and energy-efficient technologies in power engineering, the change from solid fuels to the more environmentally friendly gaseous ones, the use of alternative sources of energy (wind, solar, falling, and thermal water), and the utilization of oil-well gas and mine methane.

The weak environmental management system, the lack of financing, and the use of obsolete technologies in the industry allow the supposition that the anthropogenic impact on the environment will not be reduced in the near future. It is necessary to reduce emissions in total and per unit of GDP. Therefore, the development of any branch programs of industrial development, town-planning, and other large-scale programs should include the assessment of the possible impact on the environment.

Target 10:

Halve, by 2015, the proportion of people without sustainable access to safe drinking water

Significance for Kazakhstan

Ensuring access to safe drinking water and sanitation is one of the most urgent and complex goals of Kazakhstan's national policy due to pollution of water sources and the unsatisfactory technical condition of water supply systems. Water supply problems became especially acute in the 1990s because of the economic recession in the country. Many water pipes no longer complied with the sanitary and technical norms due to the emergency state of treatment and disinfectant plants and standpipes, and the poor state of distribution networks. This has particularly affected rural areas, where group water pipes were often replaced with less reliable sources of drinking water.

Therefore, the issue of improving the water supply is included in several strategic and policy documents, including the Kazakhstan-2030, Concept of Environmental Safety for 2004-2015, the Government Program for 2003-2006, the Health of the Nation State Program, and the State Program on Development of Rural Territories for 2004-2010. Also, on January 23, 2002, the Government approved the special branch program, Drinking Water, for 2002-2010.

Target 10 status in Kazakhstan

Access to water is one of the main poverty indicators. The population's morbidity is closely related to the worsening of drinking-water supply. In Kazakhstan, the safety of a water source is determined on the basis of sanitary safety, that is, compliance with sanitary norms, quality standards, and technical reliability requirements (ensuring the appropriate regime of water supply to consumers). Standard quality requirements are defined by the Sanitary Epidemiological requirements on the quality of water in centralized water supply systems. In addition, the Government Resolution of January 23, 2004 determines the procedure for water object to be classified as a source of drinking water, taking into account its sanitary safety and the possibility of creating zones of sanitary guard.

However, while discussing the access to drinking water and sewerage, it is necessary to note that at present, there is no methodology in Kazakhstan for quantitative measurement of modern access to drinking water and sewerage. Through a joint project with the Government of Norway and the Global Water

Table 7.9. Proportion of people with access to piped water (%)

Administrative unit	1999	2000	2001	2002	2003
Kazakhstan	**75.1**	**73**	**74**	**73.7**	**75.1**
North-Kazakhstan oblast	49	48.3	51.2	52.3	55.5
South-Kazakhstan oblast	71.7	67.4	61.1	62.5	63.7
West-Kazakhstan oblast	56.9	58.2	56.8	61.2	63.8
Kostanay oblast	69.2	59.6	57.1	62.9	64.4
Zhambyl oblast	65.7	57.7	60.6	61.4	64.7
Atyrau oblast	66.1	62.7	61.9	63.8	65.6
East-Kazakhstan oblast	68.9	67.6	68.7	68.4	70.2
Mangystau oblast	71.7	69.2	70.1	70.3	70.6
Aktobe oblast	70.9	73.6	75.8	76.2	71.3
Pavlodar oblast	74.1	74.7	75.4	76.8	73.9
Akmola oblast	70	78	77	77.7	74.4
Almaty oblast	77.1	72.3	77.6	75.9	79.5
Kyzylorda oblast	75.5	74.1	74.4	76.5	82.4
Karaganda oblast	95.1	88	88	88.8	86.7

Source: Environmental Protection and Sustainable Development, statistical collection. Agency on Statistics of the Republic of Kazakhstan. Almaty, 2004.

Table 7.10. Proportion of people with access to non-centralized water sources (wells, springs, artesian wells without distribution networks), %

Administrative unit	1999	2000	2001	2002	2003
Kazakhstan	**19**	**20.9**	**21.3**	**20.6**	**20.2**
Mangystau oblast	0.9	1.1	1.1	1.0	1.0
Atyrau oblast	5.0	5.5	4.9	4.7	4.2
Kyzylorda oblast	17.6	19.3	19.8	18.1	10.9
Karaganda oblast	4.9	11	10.8	10.5	12.2
Almaty oblast	18.8	19.6	19.3	19.1	18.0
Akmola oblast	25.2	18.8	18.7	19.6	22.4
Pavlodar oblast	15	18.3	20	21.2	25.4
East-Kazakhstan oblast	28.6	30	28.8	29.1	27.8
Aktobe oblast	28.1	26.1	23.9	23.4	28.2
South-Kazakhstan oblast	19.2	22.8	29.6	28.9	28.6
Kostanay oblast	25	32.6	34.4	29	29
West-Kazakhstan oblast	31.4	30.8	33.8	33.7	32.3
Zhambyl oblast	32.4	39.7	37	35.6	34.3
North-Kazakhstan oblast	36.2	40	38.9	37.8	35.8

Source: Environmental Protection and Sustainable Development, statistical collection. Agency on Statistics of the Republic of Kazakhstan. Almaty, 2004.

Partnership, the National Plan on Integrated Water Resources Management, UNDP is providing technical assistance to the Government of Kazakhstan in this area. Project objectives include the preparation of national strategy on achieving the MDG Target on access to drinking water and sanitation.

As a part of preparing the National Strategy, with the support of UNDP, a large-scale survey is being carried out to determine the existing level of access to water supply and sanitation. The sociological survey is also accompanied by a technical survey that covers over 281 urban and 7,000 rural settlements in Kazakhstan. It looks primarily at infrastructure, identifying what is in place, if it provides access to water effectively, efficiently, and sustainably, and if the quality of water is adequate. It also assesses the plans, programs, and projects that each Oblast and Vodokanal may already have for improving water supply and sanitation in their region.

These surveys, which should be complete by the end of September 2005, will help define the actual access to water supply and sanitation by urban/rural divide, hydrographic basins, and oblasts of Kazakhstan.

The Millennium Development Goals in Kazakhstan Report (2002) assessed the likelihood of achieving Target 10 as «potential», which means that the target may be achieved through appropriate additional efforts and adequate financial and organizational support. For that report, statistics were obtained from the Sanitary and Epidemiological Services department of the Ministry of Health. The statistics indicated that 75% of people had access to water pipes and about 20% had access to drinking water from decentralized sources. The rest of the population used water from open sources and water brought in tankers.

This data suggests that essentially 95% of the population have access to drinking water. However, the Republican SES report made no reference to sanitation. Also, there was no data on the quality of water available to the people. As a result, the quoted data cannot present a realistic picture, as it does not account for two important indicators of achieving Target 10: sanitation and quality of water.

The two tables below show the statistics developed by the Sanitary and Epidemiology Services (SES, Ministry of Health) on access to water across oblasts between 1999 and 2003. The first table is for piped water supply systems, the second for private sources without distribution. Looking at the first line of each table, which is for Kazakhstan as a whole, the tables indicate that there has been no change in piped water supply systems and only a small increase in decentralized systems. Indeed, the increase in decentralized access is a direct result of reduced access to centralized or piped water and shows that people are taking matters into their own hands in response to deteriorating central water supply systems.

Major problems

Despite the above statistics, it is well known by the water supply and sanitation professionals in Kazakhstan that the data does not provide a correct picture. This is mainly due to a misunderstanding of the purpose of the data, as reported by each of the oblasts in Kazakhstan.

In general, the definition of a rural village or area of a city 'having access' to water supply is defined by whether a pipe network was built at some point. As referred to above, due to the neglect of maintenance of infrastructure through the 90s and up to now, many of the pipelines are now inoperable. Overall, 13.3% of water pipes in the country are inoperable and 23.4% do not meet sanitary and technical requirements. This forces many people to resort to unclean and unreliable sources of water.

Far from all functioning water pipes can be considered reliable sources of drinking water, and many of them do not meet sanitary requirements due to long operation terms and obsolete water-treatment technology. This is a reason for the frequent breakdowns that lead to repeated pollution, lengthy interruptions in water supply, and leakages in the pipelines. The problem is especially acute in rural settlements where people cannot economically support the construction and normal use of group water pipes. The Drinking Water program has pointed to the serious problem of water supply to the rural population in 7,845 settlements.

The following table compares access to water supply between 1991 and 2002, so it cannot be compared directly to the tables above. However, it does present a very different picture from the tables above. Between 1991 and 2002, the level of access to centralized or piped systems in rural areas declined by almost 44.5%. In other words, almost half of the people that previously had access no longer do. Centralized or piped systems of water supply have been replaced by two typical methods of people taking matters into their own hands – digging wells (the so called 'local sources'), and bringing in tanker trucks from distant sources. Neither of these methods can be considered 'improved supply' as defined by the MDGs.

Piped water provided by water channels (vodokanal) often is not up to the standards either. However, according to statistics, there has been considerable progress in this area in the past several years. Below is the 2000-2003 data of the Republican Sanitary and Epidemiological Service on the national level.

Table 7.11. Water supply in rural areas

Water source	2002		1991		2002 data as % of 1991
	Number of settlements	% of total number	Number of settlements	% of total number	
Centralized water sources	2,116	27.6	3878	49.4	-44.5%
Local sources	4,862	63.5	3633	46.3	+37%
Tankered water	682	8.9	334	4.2	+114.5%

Source: Environment Protection and Sustainable Development in Kazakhstan, Agency on Statistics of the Republic of Kazakhstan. Almaty, 2004.

Table 7.12. Quality of drinking water from centralized sources

Share of piped water samples that do not meet the requirements, %							
Sanitary and chemical				Microbiological			
2000	**2001**	**2002**	**2003**	**2000**	**2001**	**2002**	**2003**
9.0	8.5	7.2	4.7	4.1	3.9	3.2	2.8

Source: Environment Protection and Sustainable Development in Kazakhstan, Agency on Statistics of the Republic of Kazakhstan. Almaty, 2004.

National policy

Several programs that include measures on drinking water supply were recently adopted on national and regional levels. The Drinking Water branch program for 2002-2010, the State Program on Development of Rural Territories for 2004-2010, and a number of regional programs that envisage construction and repair of water supply structures (e.g. in the city of Almaty, in Aktobe, and East-Kazakhstan oblasts, etc) have been developed.

Institutional activities within the Drinking Water program include the reorganization of water extraction and the supply management and annual development of coordinated plans of the most important actions on ensuring the access to drinking water and improving its quality. Effective program realization requires the creation of a coordination mechanism for implementing the planned activities with participation of government agencies, representatives of waterworks facilities and water users, and interested environmental NGOs. Such an institutional basis at the level of hydrographic basins can be provided through the implementation of the National Plan on Integrated Water Resources Management (IWRM), which is currently being developed, and by the Basin Councils, the creation of which has been progressing very slowly so far.

Implementation of the technical measures outlined in the Program envisages the introduction of new technologies and solutions that allow the improvement of the functioning of water supply systems and constructions and reduce water delivery expenses. These measures may include the construction of polyethylene and glass-fiber-reinforced plastic pipes, the use of desalination equipment for low and highly salty water, and decreasing the hardness of water.

Along with other activities, the State Program on Development of Rural Territories for 2004-2010 envisages the construction and repair of water supply infrastructure in rural settlements and subsidizing the cost of water supply from the large pipeline networks and other very expensive systems for which there are no alternatives. The improvement of access to domestic water supply in rural areas is regarded as the best means to create favorable conditions for the development of agriculture, processing, and small businesses in rural areas. The program envisages the construction of a new water supply infrastructure in 565 rural settlements and the reconstruction and technical refurbishment of existing water supply infrastructures in 1,777 rural settlements.

Conclusions

According to the Poverty Reduction Program for 2003-2005, in 2003, 14% of urban residents and 27% of rural residents had no access to quality drinking water, and 4% of the population used water brought in tankers. Compared to the data presented in the first MDGR for Kazakhstan in 2002, the situation has not changed much.

In recent years, investments in construction and repair of water supply systems have increased over those of the 1990s, with rural areas being specifically targeted. However, the current levels of real investment are inadequate to meet the MDG target. There is at present no apparent move to address the problem of ownership of infrastructure or for budget allocations to local administration for meeting the recurring costs necessary to ensure the sustainability of access to water supply and sanitation.

Kazakhstan also needs to significantly modernize its approach to sanitation, mainly by setting up centralized sewerage systems, both in urban and rural areas. Globally, the view has moved to explicitly linking centralized sanitation with piped water supply. Programmes up to now in Kazakhstan do not indicate that this view has yet been adopted. Such an approach has the additional advantage of contributing to the achievement of Target 10, as in many regions, the untreated or poorly treated drainage waters are the main source of pollution of surface and ground waters.

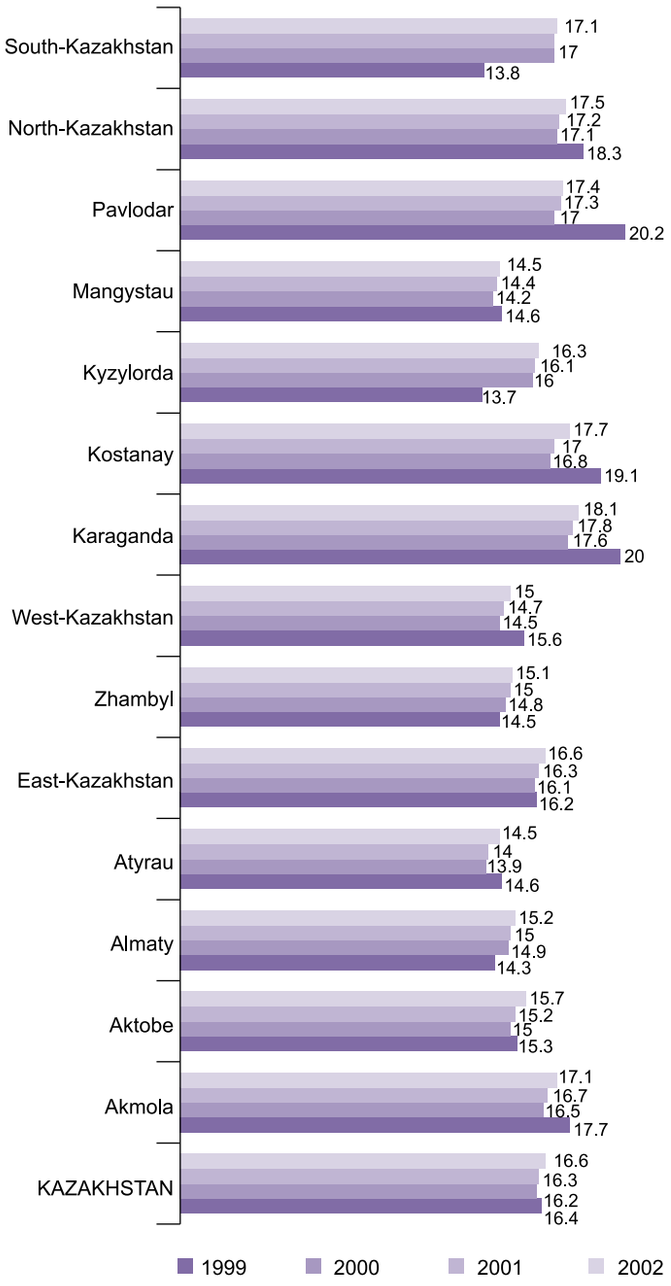
The Strategy for the Achievement of the MDG on water and sanitation, developed by the Committee on Water Resources with UNDP technical support[158], will address these issues along with presenting a detailed plan for achieving Target 10, including infrastructure, institutions, law and other forms of governance, finance, and logistics.

[158] The Strategy is planned to be completed by the end of 2006

Target 11:

Ensure, by 2020, a significant improvement in the lives of at least 100 million slum dwellers

Graph 7.3. Average housing supply by oblast, square meters per capita



Source: Statistical collections of the Agency on Statistics of the Republic of Kazakhstan

Significance for Kazakhstan

Target 11 is aimed at the significant improvement, by 2020, of the lives of at least 100 million slum dwellers. It is hard to collect data specifically on slum dwellers on the national level, and even more so on the international. According to the UN standards, the concepts of «slum» and «slum dwellers» and, consequently, the existence and number of slums and people who live there are evaluated on the basis of improvement of their condition, guarantees of property rights, access to drinking water and sewerage system, the overcrowding factor, and dwellings' conformity to the structural integrity requirements.

In terms of achieving Target 11 in Kazakhstan, the emphasis is on the rural areas where 43% of the population lives, and where about one-fourth of the population, according to data, has income below the subsistence minimum. Further persistence of such a state will deepen the gap in the standard of living between urban and rural areas and negatively affect the socio-political environment of the country. Therefore, as outlined in 2002 MDGR, the target for Kazakhstan is as follows: «achieve, by 2020, significant improvement in the lives of the rural population.»

Target 11 status in Kazakhstan

According to data on housing conditions, on the average, there were about 17.3 sq m of housing per capita at the end of 2004, while the accepted social norm is 18 sq m. In the cities, this indicator was 18.4 sq m, and in rural areas – 15.9 sq m[159].

According to the Poverty Reduction program for 2003-2005, there is a problem of uneven distribution of housing across the regions of Kazakhstan. More housing is available in Karaganda and Pavlodar oblasts (17.8 and 17.3 sq m per capita), where an outflow of population occurred, while in Atyrau and Mangystau oblasts there are 14.0 and 14.4 sq m of housing per capita. 89% of households have individual housing, but only 44% of them have all the necessary utilities. Housing conditions in rural areas are worse than in cities.

As for another Target 11 indicator, the proportion of people with access to improved sewerage system, only 48.4% of people in Kazakhstan had access to sewerage in 2004, including 73.7% in the cities and 4.3% in rural areas[160]. Compared to 1999 (73.9% and 10.4%, respectively), the situation seems to be worsening, especially in rural areas.

The table 7.13 shows Agency on Statistics data on the supply of in-house utilities in rural and urban areas from 1999 to 2004.

[159] Data of the Agency on Statistics of the Republic of Kazakhstan

[160] Data of the Agency on Statistics of the Republic of Kazakhstan

Table 7.13. Supply of in-house utilities (%)

Indicator	1999	2000	2001	2002	2003	2004
Water pipes	57,8	…	52,9	53,3	53,7	54,1
Urban	81,0	…	79,5	79,3	79,9	81,0
Rural	17,0	…	7,7	8,9	9,0	8,3
Central heating	45,4	…	43,8	42,4	43,5	43,9
Urban	69,0	…	68,4	66,2	67,8	68,6
Rural	35,9	…	1,9	1,8	2,0	1,9
Gas	87,3	…	37,2	35,9	35,0	35,4
Urban	84,2	…	53,8	51,4	50,5	50,7
Rural	92,8	…	8,9	9,4	8,6	9,3
Electricity	100,0	…	99,7	99,9	100,0	100,0
Urban	100,0	…	99,8	99,9	100,0	100,0
Rural	99,9	…	99,6	99,8	99,9	99,9
Hot water supply	43,0	…	34,8	34,2	35,2	35,6
Urban	63,4	…	54,5	53,8	55,3	56,1
Rural	7,2	…	1,2	0,9	0,9	0,8
Improved sewerage systems	50,9	…	45,1	44,2	48,0	48,1
Urban	73,9	…	69,9	68,3	73,2	73,7
Rural	10,4	…	2,9	3,2	5,0	4,3

Source: Agency on Statistics of the Republic of Kazakhstan. Almaty, 2004.

Major problems

As noted above, in Kazakhstan, the emphasis in achieving this Target is on improving the living conditions of the rural population. It is advisable to expand the focus of the target, as a lot of people in the cities live in private houses, and a certain share of people live in houses that need urgent repair or in buildings that are not suitable for living at all (e.g. abandoned buildings), or in conditions that do not meet housing requirements.

Therefore, concerning Target 11, there are at least two problems that require data collection and analysis. At present, there is an issue of slums appearing around large cities, especially Almaty, due to the inflow of migrants from rural territories. Such migrants often occupy uninhabited territories in the outskirts of Almaty and start housing construction that does not conform to construction regulations. They use unsafe construction materials and have no access to water supply and sewerage systems. There is no official data on the number of people who live in such slums. In the lack of regulation, the process may turn into a massive one.

There is also an issue of housing deterioration that has not yet been properly addressed in the national programs. Judging by quantitative indicators, the housing situation in Kazakhstan seems to be adequate: with a population of 15 million people, the total area of housing in the country is 253 million sq m, or about 17 sq m per capita[161]. However, at a closer examination, several serious drawbacks become obvious. To provide housing to 264,000 families in need of better housing conditions and registered with the concerned akimat agencies, and to resettle people from over 2 mln sq m of wrecked and dilapidated dwellings, it is necessary to build at least 3-3.5 mln sq m of housing a year. There is a serious disparity between the minimum required and the actual rates of construction, which will increase given the prospective population growth and people's need to have more comfortable and spacious homes.

[161] Data of the Agency on Statistics of the Republic of Kazakhstan.

National policy

The State Program on Development of Rural Territories for 2004-2010[162] should play a very important part in achieving Target 11, as it is aimed at creating adequate living conditions for the rural population through the optimization of rural settlements. It is expected that as a result of Program implementation, migration from rural to urban areas will be abated. According to the Program's Action Plan for 2004-2006[136], regional rural development programs should be prepared, as well as action plans on their implementation and such measures on engineering infrastructure development as construction, repair, and technical refurbishment of water supply and sewerage systems.

The new housing construction policy, announced by the President in his Address for 2005, will also be aimed at achieving Target 11. It will allow about half a million citizens of Kazakhstan to move into new comfortable houses. The State Program on Housing Construction Development for 2005-2007[164] is aimed at a complex solution to the housing problem and should ensure the access to housing for large strata of society. The Program pays special attention to providing housing to middle class and socially vulnerable groups.

The Program envisages the annual construction of one 100-apartment block in each oblast and the cities of Almaty and Astana for further provision to socially protected citizens without the right for privatization. The Program on Long-Term Financing of Housing Construction and Development of Mortgage System[165] was approved for the development of long-term financing and promotion of housing construction. It is expected that through Program implementation, over 12 mln sq m of housing will be built during 2005-2007, over 45,000 new jobs will be created, and housing safety and reliability will be enhanced.

Conclusions

In spite of its critical importance, since the beginning of economic reforms in Kazakhstan the housing reform has been taking place at a very slow pace.

In addressing the housing issue in the country, it is necessary to avoid a one-sided approach, concentrating only on improving the living conditions of rural people. It shouldn't go without notice that a lot of people in big cities live in private houses, and a certain share of people live in houses that need urgent repair or in buildings that are not suitable to live in at all (e.g. abandoned buildings), or in conditions that do not meet housing requirements.

The issue of housing deterioration, which has not yet been properly addressed in the national programs, also implies certain risks and may undermine the possibility of achieving Target 11 in Kazakhstan.

Connection with other MDGs

The concept of sustainable development, applied primarily to the environmental sphere, means the development that takes place when people are able to satisfy their current needs without compromising future generations' opportunity to satisfy theirs. The concept's foundation lies in the understanding that environment and socio-economic development should not be regarded as spheres isolated from each other. It follows then, that a socially and economically developed world may have a healthy environment.

The concept of sustainable development is closely related to other Millennium Development Goals. There are numerous examples of the inter-relation of environmental, economic, and social factors. Below are some of the best-known examples of how environmental degradation influences other spheres of life.

Poverty reduction is one of the main priorities of sustainable environmental development:

- Desertification processes drastically worsen the state of agriculture. They lead to the loss of agricultural lands, the decrease of crops' capacity and livestock population and productivity, a decrease in the amounts of produce, the drastic decline of tax revenues from production, processing and sale of produce, unemployment growth, and a reduction of the population's income.
- Land degradation leads to a drastic worsening of living conditions, as demonstrated by the experience of the Aral Sea region and parts of Atyrau, Mangystau, Kyzylorda, Almaty, and South-Kazakhstan oblasts. The degradation of the population's health status then negatively influences the socio-economic situation in these regions and causes internal migration.

[162] President's Decree #1149 of July 10, 2003, on the Program of Development of Rural Territories for 2004-2010. www.zakon.kz

[163] Government Resolution #838 of August 20, 2003, on the Action Plan for 2004-2006 for the Implementation of the State Program of Development of Rural Territories for 2004-2010 (with amendments adopted by the Government Resolution #272 of March 4).

[164] President's Decree # 1388 of June 11, 2004, on the State Program on Housing Construction Development for 2005-2007.

[165] Government Resolution #1774 of November 28, 2000, on the approval of the Program on Long-Term Financing of Housing Construction and Development of Mortgage System (with amendments introduced by the Government Resolution #1369 of October 28, 2001).

- The worsening of environmental conditions in all regions may provoke mass migration and/or the forced relocation of whole villages, which leads to large financial expenses.

Sustainable development is impossible without improving people's health and ensuring a healthy environment. The well-known factors that influence people's health are the following:

- Quality of air. Many cities and industrial centers in Kazakhstan suffer from air pollution. Numerous complex studies have shown that the incidences of respiratory diseases, neoplasms, kidney diseases, and cardiac infarction depend on the level of air pollution.
- Achievement of the target on sustainable access to sanitation and drinking water will help achieve all other MDGs. The problem of safe drinking water supply in the context of technical and anthropogenic pollution of main water sources is one of the most urgent for Kazakhstan. Microbe, viral, chemical, radioactive, and toxic pollution of surface and ground waters are some of the main causes of morbidity in the country, as many of the infectious diseases are water-borne.

Slum dwellers belong to the poorest group of the population. Slums are often located in the polluted parts of the cities or desolate rural areas without access to drinking water. Anti-sanitary conditions and living standards lead to high morbidity rates and other negative social phenomena. Improvement of the lives of these people should include such aspects as poverty reduction, access to primary education, and guaranteed employment, which will help raise the living standard with or without the physical improvement of housing conditions.

Education, especially environmental education, plays an important part in the development process. Human development and the implementation of a sustainable development concept are impossible to achieve without knowledge of fundamental sciences and natural patterns, a conscious and solicitous attitude about the environment, and the ability to use natural resources and modern technologies without damaging the environment.

Finally, ensuring environmental sustainability should take into account gender issues. Economic factors and poverty level, especially in the regions with adverse environmental conditions, may significantly influence morbidity rates. As women run a higher risk of becoming poor, this negatively influences their health and may lead to increased morbidity among them.

Kazakhstan has developed national strategies and action plans for protecting the main environmental components and biological resources. The Government is implementing a number of programs and projects aimed at achieving concrete targets in various regions and in the country as a whole.

One of the main barriers to implementation of the principles of sustainable development is the lack of understanding of the importance of environmental, along with economic and social, aspects of the country's development. Three SD components – environmental sustainability, society, and economics – are often reviewed separately merely for the sake of convenience. However, it is necessary to keep in mind that these are not separate phenomena but a single whole, and problems in any one component will inevitably affect the others. Therefore, the decision-making process, be it national or local, should take into account all components of sustainable development and their inter-relation.

There is low public awareness of the sustainable development issues, and people are practically left out of the decision-making process at the early stages of projects that are planned or being implemented already. Likewise, they're not involved in environmental management, expertise, and decision making on the use of environmental resources.

MDG 8 Develop global partnership for development

Introduction

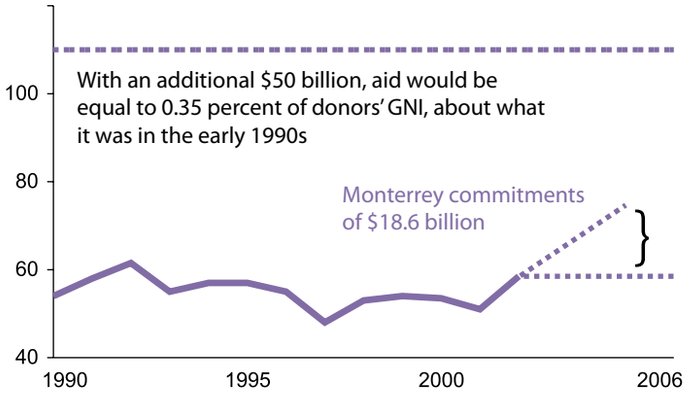
The Millennium Development Goals commit the international community to an expanded vision of development: one that promotes human development as the key to sustaining social and economic progress in all countries, and recognizes the importance of creating a global partnership for development. The goals have been commonly accepted as a framework for measuring development progress.

While MDGs 1-7 establish yardsticks for measuring progress in the attainment of specific goals concerning poverty reduction for developing countries, donor countries, and multilateral institutions, MDG 8 – Global Partnership for Development – is about the means to achieve the first seven.

MDG 8 calls for an open, rule-based trading and financial system, more generous aid to countries committed to poverty reduction, and relief for the debt problems of developing countries. It draws attention to the problems of the least developed countries and of landlocked countries and smallisland developing states, which have greater difficulty competing in the global economy. It also calls for cooperation with the private sector to address youth unemployment, ensure access to affordable, essential drugs, and make available the benefits of new technologies.

What will it take to achieve the Millennium Development Goals? Economies need to grow to provide jobs and higher incomes for poor people. Health and education systems must deliver services to everyone, men and women, rich and poor alike. And policies need to empower people to participate in the development process. While success depends on the actions of developing countries, which must direct their own development, there is also much that rich countries must do to help.

Graph 8.1. Net official development assistance ($ billions)



Source: Organisation for Economic Co-operation and Development, Development Assistance Committee, and World Bank staff estimates

The 2002 International Conference on Financing for Development adopted the Monterey Consensus, which includes commitment to good governance, development, and poverty reduction – both nationally and internationally. As part of the global partnership for development, it addresses official development assistance (ODA) among other areas. High-income countries made commitments to increase the real level of ODA by 18.6 billion USD more in 2006. In the framework of the Monterey Consensus, donor countries also committed themselves to attain the target of 0.7 per cent of GNI spent on foreign assistance.

Two estimates of the resource gap to attain MDGs have been developed: one, by estimating the additional resources necessary to increase economic growth so as to reduce income poverty, the other, by estimating the costs of meeting specific goals in health, education, and the environment. Both estimates yield a figure in the range of 40-60 billion USD in additional assistance per year, which would roughly represent a doubling of official aid flows over 2000 levels.[166]

For high-income countries, development assistance is a way to transfer much-needed resources to developing countries. A significant amount of aid is targeted for poverty reduction or at least welfare and the improvement of living conditions for the poor, for securing access to public services (including healthcare, education, and environmental protection), and for the support of good governance. Aid can take many different forms, and the official development assistance is only one of them. In fact, it is not even the largest source: globally, more than half the total aid flow comes from private sources as a foreign direct investment (FDI). However, FDI to developing countries has fallen significantly in recent years. Global FDI inflows, down by 41 per cent in 2001, fell by another fifth in 2002 – to $651 billion.[167] Their decline has not been offset by an increase in official flows, including ODA.

According to a 2003 UNCTAD survey of 106 national investment promotion agencies worldwide[168], global FDI flows will remain sluggish in the short term and gain new steam in the medium term. The survey also suggests that among industries, tourism and telecoms will lead the recovery. Developing countries are gaining importance in outward FDI. The United States, the

[166] Goals for Development: History, Prospects and Costs. Shantayanan Devarajan, et al, World Bank. 2002.

[167] World Investment Report 2003: FDI Policies for Development: National and International Perspectives. UNCTAD, New York and Geneva. 2003.

[168] World Investment Report 2003: FDI Policies for Development: National and International Perspectives. UNCTAD, New York and Geneva. 2003.

United Kingdom, and Germany remain the main sources of FDI, but China, India, and Saudi Arabia are emerging as important investors, with a strong presence in developing economies.

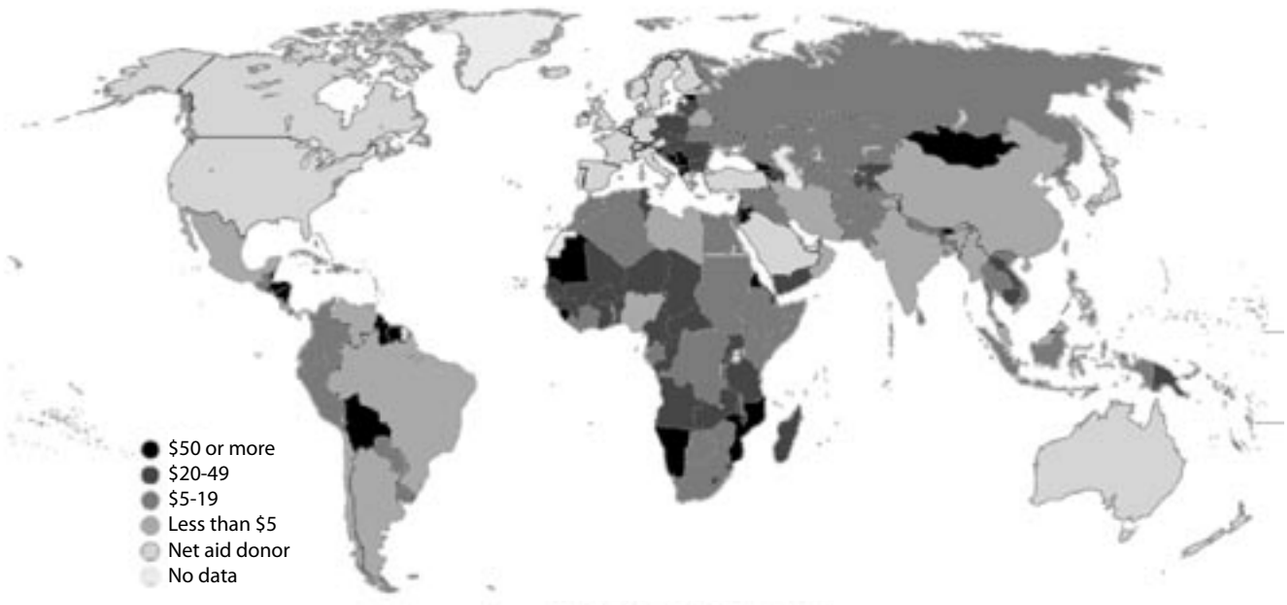
Private flows, which account for the major share in external aid, nevertheless depend on a number of factors, such as macroeconomic and political stability, investment climate and the economic development of a particular region. Private flows to a particular region are driven by economic determinants, thus contributing to the attainment of MDGs only through economic growth. In this regard, the major focus of this publication is on official development assistance, which includes actual international transfer by the donor of financial resources or of goods or services, grants by development agencies and loans with a grant element of at least 25 per cent, and technical cooperation and assistance.

The aid picture gets worrisome when the ODA effort is measured against the gross national income (GNI) of developed countries. The ODA/GNI ratio fell from an average 0.33 per cent in 1990-1991 to an average of 0.22 per cent in 2000-2001; before increasing slightly to 0.23 per cent in 2002. Most notable is the low and falling ODA/GNI ratio among G-7 members: from 0.31 per cent in 1990 to 0.18 per cent in 2002. This is considerably lower than the 0.7 per cent reaffirmed by the Monterrey Consensus. Only five countries have attained or surpassed the 0.7 per cent target: Denmark, Luxemburg, the Netherlands, Norway, and Sweden. None of these «G-0.7 countries» belong to the G-7. Italy and the United States had the lowest ratio among the 23 DAC countries[169] in 2002 – 0.20 per cent and 0.12 per cent, respectively.[170]

Increasing the level of aid is required to help finance progress towards MDGs. However, financing development goals alone is unlikely to bring the aspired results. The following factors should be considered when assessing the likelihood of attaining MDGs:

- Increasing external finance needs have to be considered alongside making better use of existing finance for the benefit of target groups in need of assistance. The most effective and sustainable way to improve the use of funds is to further strengthen a partnership between developing countries, donor countries, and international organisations around national policy plans and poverty reduction strategies.
- The capacity of developing countries to absorb additional finance is limited. Additional aid beyond the volume that the recipient country can absorb under the existing institutional and legal environment will not bring about the desired effect. Similarly, the ability of donors to manage and disburse the additional funds at least as effectively as their current assistance is definitive, too. A doubling of development aid is unlikely to be possible without the coordination and better pooling of donor funds and the harmonisation of donors' reporting requirements to recipient countries.
- MDGs targets are undoubtedly important for measuring progress in the attainment of MDGs. But the assessment based entirely on qualitative indicators reviles the limited coverage of the MDGs. In this regard, it is important to pursue the «spirit» of the targets, rather than focus sim-

Graph 8.2. Aid per capita, 2001



Official development assistance and net official aid record the actual international transfer by the donor of financial resources or of goods or services valued at the cost to the donor, less any repayments of loan principal during the same period. Grants by official agencies of the members of the Development Assistance Committee are included, as are loans with a grant element of at least 25 percent, and technical cooperation and assistance. Aid per capita includes both ODA and official aid, and is calculated by dividing total aid by the midyear population estimate.

Source: http://www.developmentgoals.org/

[169] Donor Assistance Committee of Organisation for Economic Co-operation and Development was established in 1961, as a forum for consultations among aid donors on assistance to less-developed countries. 23 countries are members of DAC, including the USA, Great Britain, the European Union, Japan, Germany, France, Denmark, and Finland, among others. For the full list of DAC members, please refer to Annex.

[170] Is MDG 8 on Track as a Global Deal for Human Development? JanVandemoortele, et al, UNDP/BDP, NY. 2003.

ply on sometimes rather narrow indicators. For example, it is possible that the most cost effective way of halving poverty may be to focus resources on eliminating poverty in some key countries. Even methodologies for costing the universal targets can be contentious. The MDG 2 «Universal Primary Education» target includes every child in the country, but making progress towards this goal also leads to raising follow-on costs to provide more secondary education in later years.

- Achieving the MDGs is not merely about increased flow of external aid to developing countries. Making progress towards the MDGs requires stable, safe, participatory, and just societies. The success of MDGs in developing countries depends on continued progress in such areas as improving accountability and governance, protecting human rights, and rule of law.

Brief overview of ODA status in Kazakhstan

Kazakhstan started to receive external assistance in 1992. It was a time when the initial steps in the radical market transformation and economic downturn overwhelmed the country with the need to launch economic reforms sequenced with the development of appropriate institutions fitting new market conditions and to address the social impacts of transition simultaneously. Provided that Kazakhstan's own resources were scarce, substantial external assistance was required to sustain the reform process and help identify and implement appropriate structural changes. Kazakhstan's integration into the world community, as well as commitments made at the Donor Consultative Group meetings for Kazakhstan during 1992-1996, opened the country's access to external resources in the form of Official Development Assistance (ODA) (concessional loans, export credits, and grants).

ODA disbursements for this period were most often targeted to directly support the balance of payments and to finance critical imports. In addition to financial assistance, Kazakhstan gained access to a broad range of technical assistance, both in the forms of loans and grants. Most of the technical assistance focused on the institutional support of newly created governmental agencies through international consultancy services, policy advice, the procurement of office hardware, and training/study tours.

Grant assistance from multilateral and bilateral donor organizations, including UNDP, IBRD, USAID, EU, UK, Germany, and Japan, covered legal reform, environmental issues, financial sector reform, social sector improvements, privatisation, restructuring of enterprises, and private sector development.

At this time, the first steps were undertaken to improve the country's absorptive capacity for financial assistance and technical assistance through IBRD and UNDP projects. In general, the interim strategy of the Government of RK and donors to facilitate transition to market economy during 1992-1995 was successful. In 1996, the economy showed the first signs of growth. Achievements in macro-economic stabilization were obvious. Thus, the focus of the Government's strategy of external assistance utilisation had shifted from direct budget support and institutional capacity building to social and physical infrastructure development and mobilization of investment in productive sectors.

With the development and adoption in 1997 of Long-term development strategy «Kazakhstan-2030», seven national strategic priorities were set: national security; domestic political stability; equitable economic growth; health, education and prosperity of the people of Kazakhstan; energy resources; infrastructure development; and professional government. This document set out strategic spheres where external assistance could supplement national efforts. At this time, the leading development agencies had developed their country cooperation programs based on Kazakhstan's long-term development goals. This marked the beginning of coordination and strengthened partnership between the government of Kazakhstan and the donor countries and development agencies.

The country's wealth of mineral resources significantly increased GNI per capita, the indicator based on which lending terms and conditions are defined. By 1997, Kazakhstan had al-

Table 8.1

Receipts	2000	2001	2002	2003
Net ODA (USD million)	189	148	188	268
Bilateral share (gross ODA)	92%	89%	90%	95%
Net ODA / GNI	1.1%	0.7%	0.8%	1.0%
Net private flows (USD million)	472	1,594	1,383	528
For reference				
Population (million.)	15.1	14.9	14.9	14.9
GNI per capita (Atlas USD)	1,250	1,350	1,520	1,780

Source: Organisation for Economic Co-operaton and Development (OECD), www.oecd.org

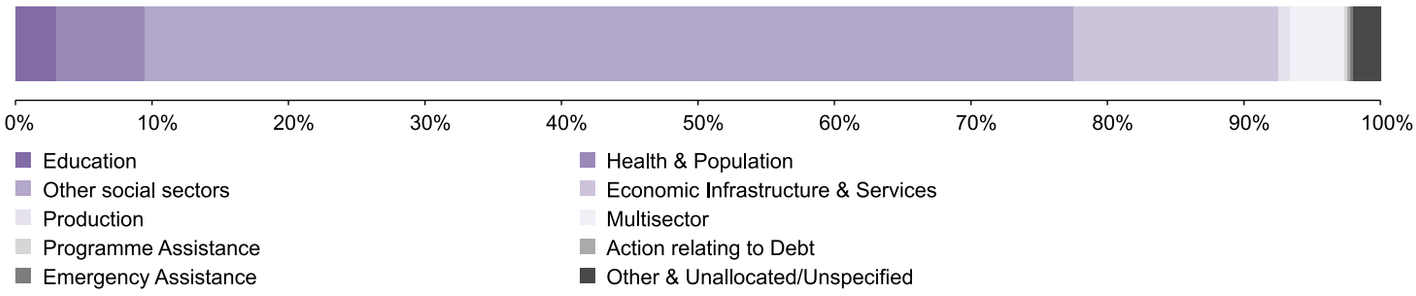
Top 10 Donors of gross ODA (2002-2003 average)

Country	USD million
1. Japan	86
2. United States	61
3. Spain	17
4. Germany	15
5. Arab Countries	11
6. Korea	7
7. EC	6
8. Israel	4
9. EBRD	3
10. Netherlands	2

Source: OECD, www.oecd.org

[171] Kazakhstan: Development Cooperation Report, 1998-1999. UNDP. Almaty. 2000.

Graph 8.3. Bilateral ODA by sector (2002-03)



Source: OECD, World Bank

ready been borrowing on harder conditions than low-income countries with GNI per capita under USD 745. Before the year 2000, loans for the support of the balance of payments prevailed in the total volume of ODA. For example, the total borrowing under this component in 1998 was USD 492.1 million or 66.6 per cent of the total ODA.[171]

In 2001, the OECD Development Assistance Committee (DAC) put Kazakhstan in Part I: Developing Countries and Territories (GNI per capita USD 746–2,975) of the DAC List of Aid Recipients.[172] The next revision of this list is due in the second half of 2005.

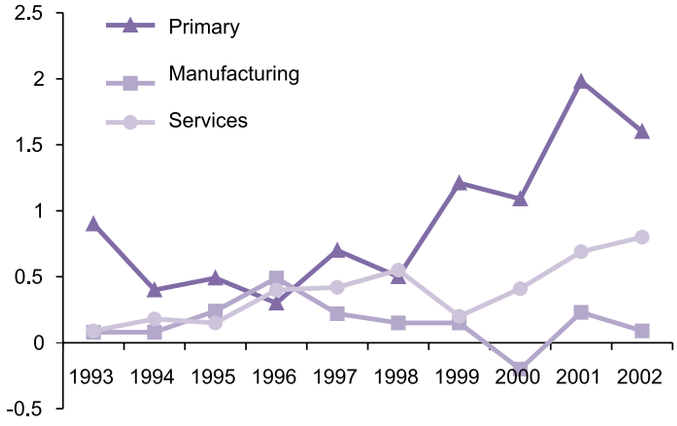
According to OECD data, ODA to Kazakhstan by year, by donor, and by sector looks as follows[173] (see Table 8.1).

Kazakhstan's economy offered opportunities for investments and growth in terms of access to resources, untapped markets, and relatively low-cost production capacity. FDI flows to Kazakhstan have increased every year since 1994, with the exception of 1998, 2000, and 2002. FDI flows grew by 166 per cent, from $964 million in 1995 to $2,561 in 2002. FDI in Kazakhstan were dominated by investors from developed countries, primarily from the US, the UK, the Netherlands, and Italy. Among the developing economies, the Russian Federation and China dominated in the FDI situation in Kazakhstan.[174] The largest share of the FDI flows since 1998 was dominated by investment in the primary industry.

Rapid economic growth recorded in recent years, along with inflow of foreign investments, discovery of new oil fields, growing prices for energy resources and resultant domestic savings and tax revenues all have led to the reduction of new external borrowing by the Government of Kazakhstan. According to official data by the Ministry of Finance of the Republic of Kazakhstan, beginning in 2000, the average total of external loans has remained at approximately the same level (Table 8.2).

At present, the Government of Kazakhstan is increasingly seeking technical assistance in the form of knowledge, technology and know-how transfer, mobilisation of private investments in the real sector of the economy, and infrastructure development.

Graph 8.4. FDI Inflows by Industry, 1993-2002 (billions $)



Source: www.unctad.org/wir

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Table 8.2. Government foreign debt and foreign debt guaranteed by the Government of the Republic of Kazakhstan, $ thousands

	2000	2001	2002	2003	2004
Government foreign debt	3,284,728	3,262,155	2,944,051	3,073,245	2,732,741
Foreign debt guaranteed by the Government of the Republic of Kazakhstan	644,255	537,769	536,938	549,409	633,278
	3,928,983	3,799,924	3,480,989	3,622,654	3,366,019

[172] www.oecd.org/dac

[173] Organisation for Economic Co-operaton and Development (OECD), www.oecd.org

[174] www.unctad.org/wir

Overview of development agencies' country cooperation programs with Kazakhstan

The country's national development priorities set out in the long-term development vision (Kazakhstan-2030), mid-term development strategy up to 2010, and regional and sectoral development programs correspond to the spirit of MDGs.

Kazakhstan actively utilizes external aid to address the existing problems in healthcare, education, better quality of life of the population, environmental protection, and poverty reduction. This is fully in line with MDG8 targets.

Specific targets set in MDG 8 are applicable to recipient countries; others apply to donor countries. In addition, the attainment of certain targets related to the spreading of benefits of new technologies and the improvement of access to affordable drugs implies an important role of the private sector.

Given the present concentration of FDI in primary and service industries and imbalances in the development of the local private sector, it is likely that only specific components of external aid – official development assistance in the form of consultancy, financial resources, transfer of knowledge, technology and experience – will remain the most feasible sources of support to national development efforts and initiatives in the foreseeable future. It is for these reasons that the main focus of this chapter is on the official development assistance provided to Kazakhstan.

The most relevant MDG 8 targets for Kazakhstan in the current stage of economic, political, and social development are Targets 12, 16, and 18. In this regard, success in MDG 8 for Kazakhstan is about the mobilisation of domestic resources and increased social spending. Along with this, it is important to sustain and advance reforms in key spheres such as human rights protection, and strengthening democratic and participatory governance. All these reform efforts are part of the Millennium Declaration, joined by Kazakhstan in 2000.

The attainment of MDG8 for donors is, among other things, about targeted programming and channelling resources in those sectors related to MDGs1-7. Each development agency in Kazakhstan has specific mandates and implements its country programs in partnership with respective ministries and agencies. Nevertheless, certain strategic goals and common values, corresponding to the global and national development aspirations, are mutually complementary, and thus open up opportunities for collaboration.

A brief overview of selected donors' country cooperation programs in Kazakhstan is provided below. The major sources of data presented in this chapter are country cooperation strategies of selected development organisations, descriptions of operations and activities, and annual reports from web sites of these organisations. To ensure the comparability and

Targets of MDG 8

Target 12 Develop further an open trading and financial system that is rule-based, predictable, and non-discriminatory. Includes a commitment to good governance, development, and poverty reduction – nationally and internationally	Recipient countries Donor countries
Target 13 Address the least developed countries' special needs. This includes tariff- and quota-free access for their exports; enhanced debt relief for heavily indebted poor countries; cancellation of official bilateral debt; and more generous official development assistance for countries committed to poverty reduction	Donor countries
Target 14 Address the special needs of landlocked and small island developing states	Donor countries
Target 15 Deal comprehensively with developing countries' debt problems through national and international measures to make debt sustainable in the long term	Recipient countries Donor countries
Target 16 In cooperation with the developing countries, develop decent and productive work for youth	Recipient countries Donor countries
Target 17 In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries	Recipient countries Private sector
Target 18 In cooperation with the private sector, make available the benefits of new technologies – especially information and communication technologies	Recipient countries Private sector

consistency of the data over a period of time, two UNDP publications («Development Cooperation Report 1998-1999» and «Overview of Donor Assistance to Kazakhstan in 2002») served as primary sources of consolidated data on external assistance to Kazakhstan. Additionally, data from the UNDP Donor Assistance Database was used.

Considering the limitations of the thematic focus classification used in the database, projects aimed at institutional capacity building at central and local levels to formulate and implement strategies and programs on poverty reduction, education, healthcare and social protection reforms, environmental management, and gender equity are captured under the thematic focus of «good governance». Hence, relatively small numbers under other thematic focuses, such as «environment», «economic development», «poverty and social development», and «gender», do not mean that these categories don't capture donors' attention. 1999 is the basis year for the comparison of ODA to Kazakhstan from the different international and bilateral development agencies.

Multilateral development organisations

For the purposes of this publication, this category consists of UN system agencies: UNDP, UNIFEM, UNFPA, UNICEF, UNESCO, UNAIDS, ILO, and WHO.

UN Agencies

Taking into account the comparative advantages and lessons learned from the 10-year experience of the United Nations in the country under the leadership of the Government, the UN Agencies resident in Kazakhstan have identified three strategic areas. These provide an orientation and a framework for coordinated development activities in Kazakhstan. Building upon a common understanding of the country's development situation, existing challenges (in particular with regard to MDGs), and responding to the long- and mid-term national priorities, the UN will focus its activities in the following areas:

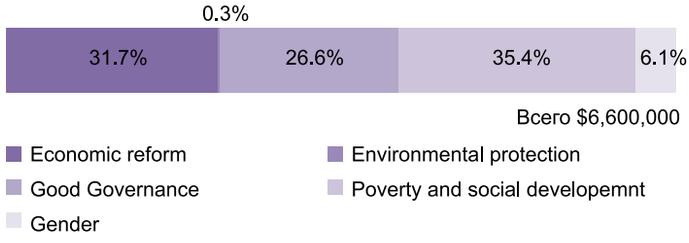
- Pro-poor policy development;
- Ensuring quality of life for all;
- Good governance and participatory development.

The selected strategic areas for cooperation represent the common response by UN Agencies to existing challenges that the country faces. These areas are coherently reflected by UN Agencies within the UNDAF. This enables each member of the development community to:

- Share its expertise in advocacy and social mobilisation, service delivery, resource management, capacity building, and provision of technical assistance;
- Participate in a coordinated manner in advocacy, planning implementation and monitoring development programs and projects.

In 2003, the composition of development assistance from UN Agencies by thematic focus looked as follows (see Graph 8.5).

Graph 8.5. UN Agencies: Technical assistance by thematic focus, 2003



Source: UNDP Donor Assistance Database, www.undp.kz/aid

For comparison, in accordance with the data in UNDP «Development Cooperation Report for 1998-1999», the total external assistance from UN Agencies in 1999 amounted to USD 7,364,000, distributed among thematic focuses as following: good governance – USD 1,813,000 (24.6%), social development – USD 4,185,000 (56.8%), environment – USD 581,000 (7.9%), economic reforms – USD 786,000 (10.7%).

Available numbers on technical assistance projects in 2003 show that UN Agencies made substantial efforts to address poverty and social development issues, which is in line with national priorities and MDGs. The projects under this thematic focus include the development of regional and local poverty reduction strategies, supporting the creation of opportunities for self-employment through micro-credit, entrepreneurial skills development, healthy life-style promotion, protection of maternal and child health, HIV/AIDS prevention, and counteraction on drug abuse and trafficking.

Significant resources concentrated in the projects under the «good governance» thematic focus, are an indication of the shared understanding that poverty results not just from a lack of jobs and income, but also from a lack of access to basic social services, inequality, and exclusion. Good governance plays a key role in fostering economic development, improving the quality of life of the population, and ensuring equal access to social services.

Projects under the «good governance» thematic focus pursue the aim of strengthening the institutional capacity of central and local governments in the formulation and implementation of development strategies and programs. Examples of such projects are building national capacity for effective human rights protection, improving the dialogue between the government and civil society, enhancing the quality and accessibility of public services, and supporting national strategies in healthcare, education, environmental management, and civil society development.

Environmental protection and sustainable development issues are at the centre of UN activities in Kazakhstan. The magnitude of environmental challenges in Kazakhstan: shrinking biodiversity, water and air pollution, desertification, industrial and municipal waste, requires a concerted effort from the government and other stakeholders. Projects under this thematic focus aim at biodiversity conservation and protection, a response to desertification and land degradation, the rational use of natural resources, and environmental protection.

International Financial Institutions

For the purpose of this publication, this group includes financial institutions resident in Kazakhstan: World Bank, Asian Development Bank, Islamic Development Bank, and European Bank of Reconstruction and Development.

World Bank

The WB commenced operations in Kazakhstan in July 1992 and has since provided 23 loans worth a total of USD 2 billion (USD 1.4 billion disbursed). Since 1997, activities have focused on public resource management, sharpening the focus of welfare and social protection policies, and increasing the potential savings mobilisation of the country. Adjustment lending accounted for more than 50 per cent of the total portfolio.

In general, World Bank aid flow in 1999 amounted to USD 210,965,000, including good governance – USD 86,952,000 (41.2 per cent), social development – USD 54,258,000 (25.7 per cent), economic reforms – USD 66,290,000 (31.5 per cent), and environmental protection – USD 3,465,000 (1.6%).[175]

Given Kazakhstan's recent economic growth and reduced need for external financing, the WB refocused approaches to cooperation with Kazakhstan. The new strategy was developed in consultations with the Government, with due consideration for evolving strategic goals and social and economic developments. This new strategy is based on the priority directions of the Government's program for 2004-2006, and includes effective management of oil revenues and improving public institutions and policies; eliminating barriers for private sector development and investment promotion; investing in human capital and infrastructure; and rational and sustainable use of natural resources.

In the new strategy, financing will not be the primary relationship driver. The WB will use its international knowledge and experience to help Kazakhstan build a modern, rapidly growing, and diverse economy that improves the welfare of all its citizens, especially the poor. The current portfolio includes projects on environmental management and public sector reform.

The World Bank will also be engaged in four priority directions of the Government's development strategy. The WB will provide global knowledge and international experience, to give policy advice on key strategic issues, to organize consensus building activities and debates, and to provide implementation support and capacity building. The Joint Economic Research Program (JERP), an innovative approach to non-lending services, will become the main instrument of the new strategy till 2008. The JERP covers studies on poverty, competitiveness, WTO accession, public expenditures and institutions, health, education, transport, and environmental management, as well as regional water-energy arrangements. In the framework of JERP were disbursed USD 3.928 millions in 2002-2005.

Besides, the Government and the WB reached an agreement on four loans for the 2005 fiscal year, including the next phase of the agricultural post-privatisation assistance program, agricultural competitiveness, forest protection and reforestation, and irrigation and drainage improvements.

As a whole, support to economic reform, Kazakhstan's accession to the WTO, and sustainable development are the key components of the WB Country Partnership Strategy. These components correspond with the targets of MDG 8. Besides, other initiatives within this strategy contribute, directly or indirectly, to the progress of MDGs 1-7 in Kazakhstan, including poverty reduction, capacity building in planning and management in healthcare and education, and sustainable environmental management.

Asian Development Bank (ADB)

Kazakhstan has been a member of the ADB since 1994. Since joining ADB, Kazakhstan has received 12 loans (for 8 projects) totalling USD 502 million and 56 technical assistance projects amounting to USD 27.9 million.[176]

The first ADB country strategy and program for Kazakhstan was developed in 1996. The main areas for cooperation in the framework of this program were pension system reform, water and land resources management, educational reform, and rehabilitation of transport infrastructure. In that period, technical assistance included advisory services for strengthening the government's institutional capacities, and support to the national efforts in the development of the Poverty Reduction Strategy in the Republic of Kazakhstan.

Due to reduced external borrowing by the Government in 1998-2002, no new loans were signed and ADB's work mainly focused on the activities of on-going projects.

The external assistance to Kazakhstan from the ADB in 1999 totalled USD 19,366,000, including good governance – USD 692,000 (3.6 per cent), economic reforms – USD 6,045,000 (31.2 per cent), and social development – USD 12,629,000 (65.2 per cent).[177]

As in the case with the World Bank, rapidly changing social and economic environment and development priorities led the ADB to more flexible programming of cooperation with the Government and increasing technical assistance component through knowledge transfer. Besides this ADB foresees further decline in external borrowing in the medium term by the Government. This is in accordance with Government plans up to 2007 to reduce the budget deficit.

At present, the ADB works according to both the mid-term Country Strategy and Programme (2004-2006) for Kazakhstan (CSP) and the refined version of CSP. The CSP recognises the rapid economic growth in Kazakhstan and its improved fiscal position, and sets knowledge transfer as the main thrust of the ADB's collaboration with Kazakhstan in the medium term. The CSP aims to support Kazakhstan's development goals through i) private sector development, ii) human development, and iii) sustainable environment management. These efforts will also be guided by Kazakhstan's regional cooperation activities.

The CSP includes 13 technical assistance programmes for USD 6 million and USD 150 million in public lending for the 2004-2006 period. These programmes encompass the areas of natural resources management, rural water supply, regional and rural development, education, transport, central and local government support, and private sector support.

[175] Kazakhstan: Development Cooperation Report, 1998-1999. UNDP. Almaty. 2000.

[176] The data of the Ministry of Economy and Budget Planning of the Republic of Kazakhstan.

[177] Kazakhstan: Development Cooperation Report, 1998-1999. UNDP. Almaty. 2000.

In general, the focus directions of the new CSP are directly linked with the MDGs. Focus and thematic coverage of this strategy closely correspond to the priorities of the national development strategy.

Islamic Development Bank (IDB)

Kazakhstan joined the IDB in 1995. IDB's most recent country strategy, approved in 1999, defined support for infrastructure development and development of small and medium business as priority spheres of assistance. IDB's country strategy also addresses the issues of trade promotion, the development of processing industry, the telecommunication sector, and the oil and gas sector.

In 1999, the IDB's assistance to Kazakhstan amounted to USD 9,512,000, including good governance – USD 41,000 (0.4 per cent), economic reform – USD 46,000 (0.5 per cent) and social development – USD 9,425,000 (99.1 per cent). [178]

As of April 2005, IDB has approved a total of 19 projects for USD 124.421 million[179]. The examples of completed projects include: transport sector – the building of roads between Almaty-Gulshad and Almaty- Astana; healthcare sector – 2 projects on the reconstruction of and equipment procurement for Syzganov's Surgery Centre. Presently, two of IDB's projects are under active implementation – the modernisation of postal service in Kazakhstan and rural water-supply system building in Karaganda oblast.

In the framework of small business support, the IDB opened a small business financing credit line to procure equipment through local commercial banks, including Kazkommertsbank, Bank TuranAlem, and Halyk Savings Bank. Another credit line to finance imports was opened in Bank TuranAlem to import raw materials and semi-manufactured and component goods for manufacturing. Besides this, IDB opened credit lines for small and medium businesses and crediting of leasing operations through local commercial banks and Central-Asian Entrepreneurship Fund. IDB's Asset Management Department has approved a credit line for the export of Kazakhstan's grain, worth USD 20 million. The department has also financed the procurement of agricultural equipment.

As a part of the IDB's technical assistance, specialised surveys in various sectors and the institutional capacity building of state agencies are being undertaken. IDB also provides advisory services on trade-related issues and Kazakhstan's accession to the WTO.

Due to the reduced external borrowing by the Government, IDB has refocused the main thrust of its activities toward national and private companies, local commercial banks, and equity participation in commercial investment projects. IDB attaches high importance to the development of trade relations between Kazakhstan and member-countries of IDB and the Organisation of Islamic Conference (OIC).

European Bank for Reconstruction and Development (EBRD)

EBRD has been actively involved in Kazakhstan across a broad range of economic sectors in private and public projects. In 1999, the EBRD's external assistance amounted to USD 22,783.000, including good governance – USD 131,000 (0.6 per cent), and economic reform – USD 22,652,000 (99.4 per cent). [180]

As of 31 August 2004, EBRD's net cumulative business volume totaled EUR 1,018 million, including EUR 948 million in debt and EUR 70 million in equity.[181] The total ODA committed by EBRD in 2004 was EUR 2,458,321.[182]

The main focuses of the EBRD's Country Strategy for Kazakhstan during the last years traditionally included:

- the promotion of economic diversification through support for domestic and foreign investors, SMEs, trade facilitation, and a further expansion of structured finance and leasing activities in agribusiness;
- the promotion of commercial principles and competitive access to infrastructure, including transport, the energy sector, and communications;
- further support to the financial sector to increase its capital base, enhance its stability, encourage prudent expansion of lending to the real economy and facilitate the diversification of domestic financial assets;
- maintainence of the policy dialogue on the investment climate through the Foreign Investment Council (FIC), and bilateral discussions. Coordination of activities in terms of policy dialogue with international donor organisations and key bilateral donors, especially on regional cooperation initiatives.

The most recent EBRD strategy for Kazakhstan was developed in accordance with the country's economic development priorities and current transition challenges. Effective governance, and especially enhanced transparency, accountability, and regulation, remain the key conditions for the financing of investment projects. In addition, EBRD seeks to introduce, where appropriate, the component on environmental management.

[178] Kazakhstan: Development Cooperation Report, 1998-1999. UNDP. Almaty. 2000.

[179] The data of the Ministry of Economy and Budget Planning of the Republic of Kazakhstan.

[180] Kazakhstan: Development Cooperation Report, 1998-1999. UNDP. Almaty. 2000.

[181] The Document of EBRD «The strategy of EBRD in Kazakhstan», approved 2 November 2004.

[182] UNDP Donor Assistance Database www.undp.kz/aid

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The following conclusions can be made based on available data on external assistance from international financial institutions:

- Areas of cooperation between the Government and IFIs are defined in accordance with national development priorities. These priorities are set in the long-term development vision Kazakhstan-2030, mid-term strategy up to 2010, the Government's plan of action for 2004-2006, the industrial and innovative development strategy, and a number of state and sectoral programs on healthcare, education, social protection, and environmental protection. Thus, IFIs programme and channel their resources to the priority sectors for the country's development, which correspond directly or indirectly with the MDGs;
- Only WB and ADB have the MDGs built-in in their country strategies. The number of projects within WB and ADB's strategies contributes (directly or indirectly) to Kazakhstan's attainment of MDG 1-7, in particular poverty reduction, healthcare and education reform, sustainable environmental management, human development, and public administration reform. At the same time, the primary goal of IDB and EBRD's activities is to support economic growth and investment promotion. Both banks participate in investment projects and cooperate with commercial banks and national companies. Presently IDB and EBRD mostly work with commercial and investment institutions, and thus contribute to the progress of MDGs indirectly through the support of economic growth. All IFIs in Kazakhstan actively promote cooperation among the countries of the region.
- The comparison of volumes of external assistance from IFIs is somewhat complicated due to the choice of 1999 as a baseline for the purposes of this whole publication. Rapid growth, significant foreign investment, new oil finds, rising oil prices, and the resulting increases in domestic savings and fiscal resources led the Government to reduce external borrowing during 1999-2002. Besides, earlier country programs of predetermined lending have not always kept up with the speed of change and transformation of the development priorities in Kazakhstan. This has resulted in a suspension or early termination of a number of projects by the Government. At the same time, borrowing by commercial banks and private companies has increased during this period as well as inflow of foreign investment in various sectors of the economy. In the context of the above-mentioned developments after 1999, the analysis of dynamics of external aid flows from IFIs could be misleading.

Bilateral development agencies

This category includes bilateral development agencies leading in the volumes of ODA to Kazakhstan in 1999: Japanese International Cooperation Agency (JICA), EU-TACIS, USAID (USA), and GTZ (Germany). As mentioned earlier, according to the OECD Donor Assistance Committee data, these agencies are in the top-10 list of ODA donors to Kazakhstan in 2002-2003.

Japanese International Cooperation Agency (JICA)

Japanese official development assistance to Kazakhstan is delivered through JICA and the Japanese Embassy in Kazakhstan. The first technical assistance projects in Kazakhstan commenced in 1993. As of today, the total amount of ODA to Kazakhstan provided since 1993, totals ¥103,200 million (approximately USD 1 billion). Loans represent the main share of ODA – 86 per cent, grants – 5.5 per cent, technical cooperation – 8.5 per cent (advisory services and volunteers, study tours and trainings in Japan, supply of equipment, policy research, and surveys).[183]

In 1999, the total Japanese aid flow amounted to USD 180,200,000, including good governance – USD 5,132,000 (2.8 per cent), economic reform – USD 166,095,000 (92.1 per cent), social development – USD 8,924,000 (5.0 per cent) and environmental protection – USD 78,000 (0.1 per cent).[184]

Examples of Japanese ODA activities in Kazakhstan include a project on the development of the Kazakhstan-Japanese Center for Human Development; projects on the improvement of the healthcare system in the Semipalatinsk region, Almaty oblast, Kyzylorda city and Astana city; study tours and trainings for Kazakhstan civil servants and specialists in various science sectors; the provision of access to Japanese expert capacities on social and economic development; the supply of equipment.

The following 3 main areas of cooperation were defined in the development strategy as a result of discussions with the Government of Kazakhstan held in October 2002: (1) human resource development; (2) improvement of social and economic infrastructure; (3) mitigation of social impacts of the transition period.

In general, in comparison with 1999, the total volume of grants and technical assistance remain at approximately the same level. Kazakhstan has not done new borrowing in 1999, 2002-2003.[185]

A number of projects implemented by JICA directly contribute to Kazakhstan's attainment of MDGs 1-7 through the strengthening of the healthcare system and the development of human resources. Advisory services to Kazakhstan on trade-related issues and WTO accession, economic development, and financial policy are very much in line with Target 12 of the MDG 8.

EU-TACIS

The European Union provides external assistance to Kazakhstan mainly through the TACIS program. Since 1992, EUR 153.6 million have been disbursed in the framework of this program.

In 1999, the EU's external assistance to Kazakhstan amounted to USD 18,836,000, including good governance – USD 8,470,000

[183] Overview of the ODA provided by the Japanese Government to Kazakhstan», Japan International Cooperation Agency, 2004, www.jica.kz

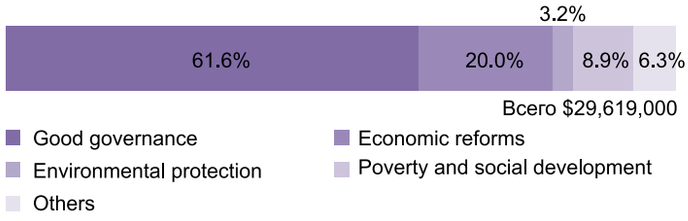
[184] Kazakhstan: Development Cooperation Report, 1998-1999. UNDP. Almaty. 2000.

[185] Overview of the ODA provided by the Japanese Government to Kazakhstan», Japan International Cooperation Agency, 2004, www.jica.kz

(45 per cent), economic reform – USD 8,572,000 (45.5 per cent) and social development – USD 520,000 (2.8 per cent) and environmental protection – 1,274,000 (6.7 per cent).[186]

At present, the scope of EU-TACIS activities in Kazakhstan is defined in the Strategy for 2002-2006 and Indicative Programs for 2002-2004 and for 2005-2006 for Central Asian countries. External assistance to Kazakhstan is aimed at improving the climate for trade development and investment promotion and supporting national efforts in WTO accession.

Graph 8.6. EU-TACIS: Technical assistance by thematic focus in 2002



Source: «Donor Assistance to Kazakhstan. An Overview 2002.», UNDP Kazakhstan, Almaty 2003

The planned technical assistance to Kazakhstan within the Indicative Program for 2002-2004 amounted to EUR 19 million. The flow of external assistance over 1999-2004 remained at approximately the same level and was allocated according to Kazakhstan's development goals and the economic priorities of EU countries. The EU-TACIS initiatives in support of Kazakhstan's accession to the WTO, including standardisation, metrology, and certification, correspond to the targets of MDG 8. TACIS also actively supports the development of an environment conducive to trade facilitation in the Central Asian region as well as with the EU countries. Activities within the regional program on combating drug trafficking and drug abuse contribute to the attainment of MDG 6.

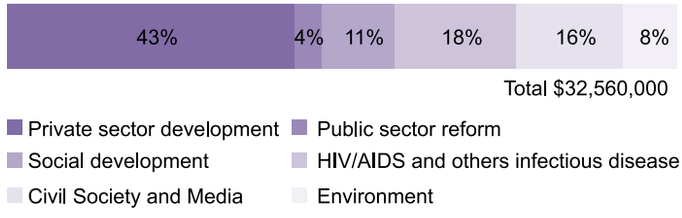
United States Agency for International Development (USAID)

The USAID strategy for 2001-2005 for five Central Asian countries was developed in line with the primary goal of the US foreign policy, which is about support of the stable, democratic, and market- oriented development of countries. This strategy embodies the following main areas of external assistance provided through USAID:

- **Economic Reform.** This program is designed to improve the environment for private sector development, including small and medium-sized enterprises (SMEs) in Kazakhstan and has three main components: transferring modern business skills and making business information more available; increasing access to finance, strengthening financial institutions, and creating alternative sources of finance; and promoting more transparent, systematic implementation of laws and regulations, including customs modernization, the reduction of investment constraints, and World Trade Organization accession. In 2004, USAID launched a number of initiatives on various aspects of land reform. USD 12,200,000 was committed in the fiscal year 2004 for this program.
- **Energy and Water.** This program focuses on the demonstration of practices for oil field clean up, the reform of environmental regulatory systems to create incentives for adherence to international standards, and assistance for transparent tendering procedures. USD 2,000,000 was committed in the fiscal year 2004 for this program.
- **Democracy and Media.** The main focus of this program is to strengthen democratic culture through the support of civil society organizations, independent media, civic and democratic education, and judicial ethics/independence, to improve local government transparency and openness to citizens, and to support democratic political parties and other institutions committed to democracy. USD 5,300,000 was committed in fiscal year 2004 for this program.
- **Conflict Mitigation.** Activities in the framework of this program in Kazakhstan are focused along the country's southern border near Uzbekistan to help local communities identify and solve basic community problems stemming from the shared use of resources. USD 400,000 was committed in fiscal year 2004 to this program.
- **Health and Population.** Health programs in Kazakhstan are focused primarily on improving primary health care and on infectious diseases, in particular tuberculosis and HIV/AIDS. USD 4,800,000 was committed in fiscal year 2004 to this program.

The distribution of committed technical assistance resources by sector in 2002 is provided in the following picture.

Graph 8.7. USAID: Technical assistance by sector in 2002



Source: «Donor Assistance to Kazakhstan. An Overview 2002.», UNDP Kazakhstan, Almaty 2003

Available data suggests that in comparison with 2002, the flow of technical assistance has somewhat decreased. This could be a result of the shifting priorities of USAID's regional strategy toward other Central Asian countries due to the recorded economic growth in Kazakhstan. USAID programs on effective management and use of energy and water resources, healthcare, and population directly contribute to MDGs 4-7 in Kazakhstan, while the programs on democratisation and private sector support facilitate favourable conditions in Kazakhstan for the attainment of MDGs as a whole.

[186] Kazakhstan: Development Cooperation Report, 1998-1999. UNDP. Almaty. 2000.

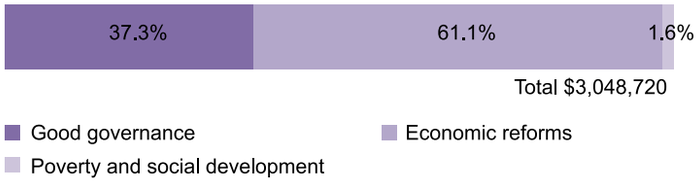
Deutsche Gesellschaft fur Technische Zusammenarbeit/ German Society for Technical Cooperation (GTZ)

The cooperation between Germany and Kazakhstan began in 1992-93. Within the framework of this cooperation, the federal Government financed projects for 32 million euro. In 2000, the governments of the two countries defined economic reform and development of the market economy as priority issues for cooperation. Another important focus of GTZ's efforts is the facilitation of cooperation between Central Asian countries.

In 1999, the external assistance to Kazakhstan amounted to USD 12,208,000, including good governance – USD 2,171,000 (17.8 per cent), economic reform – USD 9,481,000 (77.7 per cent), social development – USD 225,000 (1.8 per cent) and environmental protection – 331,000 (2.7 per cent). In the total flow of external assistance from the German Government, loans account for 57 per cent. [187]

The Graph 8.8 provides for comparison the distribution of committed external assistance by focus, in 2002. It should be noted that environmental protection issues are covered by regional programs and unfortunately are not available for each country separately.

Graph 8.8 GTZ: Technical assistance by thematic focus in 2002



Source: «Donor Assistance to Kazakhstan. An Overview 2002.», UNDP Kazakhstan, Almaty 2003

The available data indicates a slight decrease of technical assistance flow to Kazakhstan as a result of regional program expansion and shifting priorities toward other countries of the Central Asian region. Nevertheless, technical assistance is channelled to the priority sectors for the country's development. GTZ activities contribute to Kazakhstan's attainment of MDGs through economic development support.

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As a whole, external assistance from bilateral agencies is provided in line with the goals of foreign policy and the economic interests of the respective donor countries that these agencies represent in Kazakhstan and in the Central Asian region. In the context of MDG8, it should be noted that the general trend of a shrinking ratio of ODA/GNI among G-7 countries and, as a result, the failure to meet 0.7 per cent commitment, is observed in Kazakhstan too. The majority of technical cooperation programs are developed with a regional perspective. There is an apparent shift of the focus of external assistance efforts towards other countries in the region. This partially explains the cuts in the volume of external assistance to Kazakhstan during the last years. It is worth mentioning that almost all bilateral cooperation programs include initiatives on trade development and the integration of Kazakhstan in the global economy, which is in line with Target 12 of MDG8.

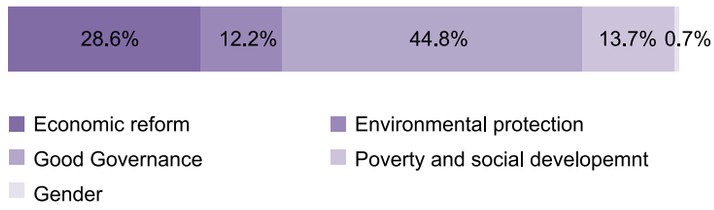
Conclusions

MDG 8 progress in Kazakhstan should be analysed in different dimensions. On the one hand, this progress is facilitated by Government efforts on economic development, democratic governance, and implementation of pro-poor policies. On the other hand, these are activities by the international community in support of the national efforts that contribute to the attainment of the country's development priorities, which embrace MDGs 1-7. And last but not least, it is the private sector, both local and foreign, that contributes through job and income creation, economic growth, and good corporate citizenship.

For Kazakhstan, MDGs are closely related to the long-term development strategy of the country. The status of the MDGs in Kazakhstan in 2015 will provide a valuable opportunity to benchmark how well the country is doing in implementing the national goals set in the strategy «Kazakhstan-2030». In general, almost all targets and MDGs are reflected in the national and sectoral programs and development strategies of Kazakhstan. Thus, the country as a recipient of external aid, is committed to meet obligations adopted with the signing of the Millennium Declaration.

Assessment of MDG status in Kazakhstan in the context of donors' activities, shows that almost all multilateral and bilateral development agencies and IFIs program their cooperation with the country based on national development priorities and focus their resources in sectors directly or indirectly related to MDGs. The following picture provides the allocation of technical assistance to Kazakhstan in 2003 (see Graph 8.9)[188].

Graph 8.9. Technical assistance by thematic focus in 2003



A substantial share of resources allocated for projects under the «good governance» thematic focus demonstrates a shared understanding of the importance of effective governance for fostering economic growth and improving the quality of life of the population, for making public services accessible and, as a result, for reducing poverty.

Considering the limitations of data collection and processing approaches used in the database, projects aimed at institutional capacity building at central and local levels to formulate and implement strategies and programs on poverty reduction, education, healthcare and social protection reforms, environmental management, and gender equity are reported under the thematic focus «good governance».

Virtually all international and foreign development agencies provide assistance in trade development and integration of Kazakhstan in the global economy, which corresponds with Target 12 of MDG8.

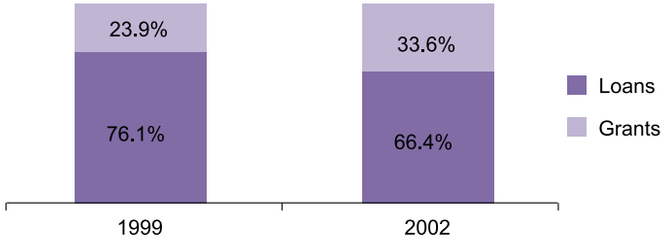
[187] Kazakhstan: Development Cooperation Report, 1998-1999. UNDP. Almaty. 2000.

[188] Source: Donor Assistance Database – www.undp.kz/aid

An overview of country cooperation strategies suggests that a number of development agencies, IFIs in particular, seek to approach programming in a more flexible manner so as to keep pace with evolving development priorities and the needs of the country.

Additionally, the focus of IFIs' country cooperation programs is gradually shifting towards a larger grant/technical assistance component for the transfer of accumulated international knowledge and know-how for building modern, dynamic, and broad-based economy. This trend is proved by the available data on the share of loans and grants in the total external assistance to Kazakhstan (see Graph 8.10)[189]. However, it should be noted that in absolute values, the volume of external assistance has shrunk. To a certain extent, this can be explained by the recorded growth of GNI per capita in Kazakhstan. In this regard, Kazakhstan is no longer considered by the international community as a country in need of substantial external assistance, and a lot of agencies have refocused their activities towards the neighbouring countries in the region.

Graph 8.10. Official Development Assistance: loans and grants



However, an assessment of the country's development based entirely on macroeconomics indicators does not provide a full picture. Economic growth depends on a number of factors, including the availability of mineral resources and favourable prices on world markets. Economic growth spurred by export of mineral resources and favourable prices brings neither sustainable improvement to the well-being of the population nor quality of life for all. As already noted, sustainable progress in poverty reduction is possible in a stable, just, and participatory society. The attainment of MDGs requires continuing progress in good governance, transparency and accountability of public administration, rule of law, and respect for human rights.

This summary would be incomplete without mentioning the potential contribution of the private sector, both local and foreign, to the advancement of national development strategies and MDGs. With liberalisation and globalisation, there is a greater mutual interest for host country governments and foreign investors to cooperate with each other.

There is a growing understanding that foreign investors and private sector companies can make a difference in advancing development goals by making an effort in addition to what they already do, while still serving their own corporate objectives. This includes contributing to the public revenues, creating and upgrading linkages with local enterprises, creating employment opportunities and raising skill levels, transferring technology, environmental protection, employment and labour relations, ensuring fair competition, consumer protection, transparency and accountability and respect for human rights.

However, the current situation in Kazakhstan shows that the private sector's potential to address broader development concerns that go beyond private gain is not utilised enough. Despite noble intentions to facilitate broad-based equitable economic growth, oil dominant share of foreign investment persists. The recovery in industrial production has been driven by oil and metals production, sectors that have limited ability to absorb many from the ranks of un- and under-employed workers in Kazakhstan. In addition, the concentration of FDI in primary industry, i.e. oil extractions and mining sectors, limits opportunities for the country's economy to benefit from the transfer and dissemination of technology and the promotion of innovation. As a compensation for this, almost all foreign companies operating in Kazakhstan include the elements of the good corporate citizenship concept into their strategies. Many companies run programs on local community development through micro-credit and small business promotion, support to vulnerable groups, development of social infrastructure, promotion of healthy lifestyle, environmental protection, and cultural and educational programs. Besides this, the companies seek to meet their obligations to increase the local content in their production.

Even while recognising the efforts of private sector companies, it should be noted that these development activities are often selective, bound to specific locations and oriented to quick gains. In addition, for various reasons, many private sector companies tend to underestimate the potential of partnerships with different stakeholders for an effective and comprehensive approach to development challenges. There are good opportunities to engage the capacities of the private sector to make a positive contribution to the development of the country in cooperation with other stakeholders.

Despite existing differences in institutional mandates and approaches among various stakeholders in the development process in Kazakhstan, including the Government, the international community, and the private sector, strategic priorities and common values corresponding with global and national development plans are mutually complementary and provide a platform for partnership.

[189] According to reports «Kazakhstan: Development Cooperation Report, 1998-1999», UNDP, Almaty, 2000 and «Donor Assistance to Kazakhstan. An Overview 2002.», UNDP Kazakhstan, Almaty 2003

ANNEXES

Oblasts	MDG 1		MDG 3	MDG 4	MDG 5	MDG 6	MDG 7		
	Target 1	Target 2	Target 4	Target 5	Target 6	Target 8	Target 9	Target 10	Target 11
	2004	2004	2004	2003	2004	2003	2004	2003	2004
	Proportion of people with income below the subsistence minimum, %	Proportion of population with income below the food basket,%	Ratio of women's wages to men's wages, %	Infant mortality, per 1000 live births	Maternal mortality ratio, per 100,000 live births	Registered TB incidence, per 100,000 population	Air pollutant emissions from stationary sources, kg per capita	Proportion of people with access to piped water, %	Average housing supply, sq m per capita
The Republic of Kazakhstan	**16.1**	**4.3**	**61.7**	**15.7**	**36.9**	**160.4**	**200**	**75.1**	**17.3**
Akmola oblast	14.0	4.8	75.7	11.8	8.9	219.8	55	74.4	17.4
Aktobe oblast	14.3	5.2	56.7	19.8	50.1	279.7	193	71.3	17.4
Almaty oblast	15.2	2.4	71.7	12.5	36.5	120.6	44	79.5	15.4
Atyrau oblast	29.1	11.6	47.2	16.4	50.3	225.7	199	65.6	14.7
East Kazakhstan oblast	14.9	4.4	70.1	17.5	47.1	143.2	127	70.2	18.2
Zhambyl oblast	18.3	4.3	67	15.9	15.1	155.4	18	64.7	15.2
West Kazakhstan oblast	14.4	4.6	46.5	15.8	30.9	208.8	155	63.8	15.1
Karaganda oblast	13.5	3.9	61.2	14.7	46.9	171.7	1100	86.7	19.3
Kostanay oblast	19.0	8	69.7	16.2	35.4	165.6	147	64.4	18.3
Kyzylorda oblast	26.5	4.9	63	22.4	58.6	278.2	37	82.4	16.6
Mangistau oblast	21.0	2.8	47	17.4	61.9	217.7	159	70.6	15.4
Pavlodar oblast	14.5	6.1	61.2	16.1	28.9	198	747	73.9	19.9
North Kazakhstan oblast	12.0	2.5	79.3	14	13.5	134.1	95	55.5	17.8
South Kazakhstan oblast	23.0	4.1	68.8	15.3	37.2	115.7	14	63.7	17.3
Astana city	1.1	0.8	68.6	12.9	63.2	132.7	85		19.2
Almaty city	2.8	0.3	68.6	15.1	25	72.3	10		18.4

Eradicate extreme poverty and hunger

*Table 1.A. Indicators of poverty rate and inequality of income used for consumption by region, 2004**

Oblast	Poverty Rate, %			Poverty Depth, %			Poverty Severity, %			Assets coefficient	Gini coefficient
	Regional	Urban	Rural	Regional	Urban	Rural	Regional	Urban	Rural		
Akmola	14.0	10.4	16.8	3.7	3.0	4.2	1.5	1.3	1.6	7.45	0.288
Aktobe	14.3	6.4	24.9	3.4	0.9	6.7	1.1	0.2	2.3	7.23	0.287
Almaty	15.2	10.3	17.3	2.7	2.4	2.8	0.7	0.8	0.7	5.11	0.244
Atyrau	29.1	20.6	41.8	7.3	6.1	9.2	2.8	2.6	3.1	7.71	0.298
East Kazakhstan	14.9	7.1	25.6	3.3	1.4	5.9	1.1	0.5	1.8	7.10	0.293
Zhambyl	18.3	14.6	21.2	3.6	2.5	4.5	1.1	0.6	1.5	4.41	0.218
West Kazakhstan	14.4	4.0	22.4	3.1	0.4	5.0	1.0	0.1	1.7	5.87	0.268
Karaganda	13.5	7.0	38.9	2.9	1.2	9.6	0.9	0.3	3.2	6.70	0.280
Kostanay	19.0	7.6	32.1	5.2	1.5	9.5	1.9	0.4	3.6	7.50	0.300
Kyzylorda	26.5	21.4	35.7	4.5	3.6	6.1	1.2	0.9	1.7	6.07	0.275
Mangistau	21.0	15.4	47.0	3.4	2.6	6.7	0.8	0.7	1.3	5.16	0.257
Pavlodar	14.5	6.6	28.0	3.7	2.0	6.6	1.2	0.7	2.1	5.96	0.250
North Kazakhstan	12.0	3.7	17.0	2.0	0.6	2.8	0.6	0.2	0.8	5.83	0.263
South Kazakhstan	23.0	17.0	26.4	3.8	3.3	4.1	1.1	1.0	1.1	4.21	0.216
Astana City	1.1	1.1		0.4	0.4		0.2	0.2		6.76	0.301
Almaty City	2.8	2.8		0.4	0.4		0.1	0.1		4.83	0.233
KAZAKHSTAN	**16.1**	**9.2**	**24.8**	**3.3**	**1.8**	**5.1**	**1.0**	**0.6**	**1.6**	**6.8**	**0.291**
Max/min	26.45	19.45	2.80	18.25	15.25	3.43	28.0	26.0	5.14	1.83	1.39
Max	29.1	21.4	47.0	7.3	6.1	9.6	2.8	2.6	3.6	7.71	0.301
Min	1.1	1.1	16.8	0.4	0.4	2.8	0.1	0.1	0.7	4.21	0.216

Source: The Agency on Statistics of the Republic of Kazakhstan.

**Provisional data*

Achieve universal primary education

*Table 2.A. Number and percentage of students in different shifts in school, 2003/04**

	Number of students studying				In percentage to total number of students			
	In the 1st shift	In the 2nd shift	In the 3rd shift	In the 4th shift	In the 1st shift	In the 2nd shift	In the 3rd shift	In the 4th shift
The Republic of Kazakhstan	**1,911,950**	**1,045,420**	**36,924**	**1,374**	**63.8**	**34.9**	**1.2**	
Akmola	109,664	34,546	793		75.6	23.8	0.5	
Aktobe	80,008	55,952	245		58.7	41.1	0.2	
Almaty	220,767	118,737	1,443		64.8	34.8	0.4	
Atyrau	60,540	49,534	1,165		54.4	44.5	1.0	
East Kazakhstan	183,060	71,262	995		71.7	27.9	0.4	
Zhambyl	132,754	83,223	473		61.3	38.4	0.2	
West Kazakhstan	77,737	43,269	538		64.0	35.6	0.4	
Karaganda	149,890	82,063	1,449		64.2	35.2	0.6	
Kostanay	116,670	33,007	45		77.9	22.0		
Kyzylorda	84,834	64,143	1,885		56.2	42.5	1.2	
Mangistau	48,447	33,917	5,465	198	55.0	38.5	6.2	0.2
Pavlodar	98,587	33,197			74.8	25.2		
North Kazakhstan	92,165	26,343	10		77.8	22.2		
South Kazakhstan	311,032	215,182	20,032	314	56.9	39.4	3.7	0.1
Astana City	30,775	24,183	1,568	742	53.7	42.2	2.7	1.3
Almaty City	115,020	76,862	818	120	59.7	39.9	0.4	0.1

Source: The Agency on Statistics of the Republic of Kazakhstan.

** not including students of special correctional organizations, students of «school-kindergarten» complexes, college students*

Table 2.B. Number of students with special needs in regular schools, in special classes, and learning at home (01.01.2004)

Oblast	In regular schools	In special classes	In regular classes	At home
Akmola	1,914	282	1,632	140
Aktobe	753	0	753	141
Almaty	8,190	144	8,046	446
Atyrau	1,215	362	853	277
East Kazakhstan	10,319	495	9,824	864
Zhambyl	644	520	124	399
West Kazakhstan	1,994	0	1,994	339
Karaganda	6,593	624	5969	1210
Kyzylorda	6,658	0	6,658	245
Kostanay	6,018	752	5,266	118
Mangistau	335	217	118	61
Pavlodar	2,575	730	1,845	586
North Kazakhstan	1,346	54	1,292	133
South Kazakhstan	16,619	81	16,538	691
Astana City	37	207	0	153
Almaty City	979	699	280	497
KAZAKHSTAN	**66,189**	**5,167**	**61,022**	**6,300**

Source: Center SATR.

Table 2.C. The existing network of support and consultancy points (psychological medical pedagogical consulting centers, correctional rooms, rehabilitation centers, and speech therapy points) for children with special needs (01.01.2005)

Oblast	PMPCC	CR	RC	STP
Akmola	4	6		11
Aktobe	2	2		5
Almaty	4	5		
Atyrau	2	4	1	1
East Kazakhstan	7	11		13
Zhambyl	4	0		
West Kazakhstan	3	0		4
Karaganda	2	2	1	43
Kyzylorda	3	4	1	10
Kostanay	3	11		
Mangistau	1			
Pavlodar	4	3		5
North Kazakhstan	3	3		4
South Kazakhstan	2	6	1	
Astana City	1	2	1	9
Almaty City	1			
KAZAKHSTAN	**46**	**59**	**5**	**105**

Source: Center SATR

Table 2.D. Students in schools with different languages of instruction by oblast

Oblast, city name	Total number of students	Number of students studying with the following languages of instruction:						
		Kazakh	Russian	Uigur	Uzbek	Tajik	Ukrainian	German
Akmola	142,803	53,434	89,369	0	0	0	0	0
Aktobe	146,863	98,667	48,196	0	0	0	0	0
Almaty	337,268	208,356	111,574	17,338	0	0	0	0
Atyrau	112,063	91,505	20,558	0	0	0	0	0
East Kazakhstan	254,706	122,833	131,717	0	0	0	0	156
Zhambyl	215,728	149,564	65,398	0	766	0	0	0
West Kazakhstan	120,687	70,250	50,437	0	0	0	0	0
Karaganda	230,080	94,080	136,000	0	0	0	0	0
Kyzylorda	150,472	138,039	12,433	0	0	0	0	0
Kostanay	149,499	32,041	117,458	0	0	0	0	0
Mangistau	87,001	71,575	15,426	0	0	0	0	0
Pavlodar	130,416	39,948	90,468	0	0	0	0	0
North Kazakhstan	116,610	22,639	93,971	0	0	0	0	0
South Kazakhstan	540,995	384,983	67,338	0	85,710	2,964	0	0
Astana City	57,357	20,074	37,118	0	0	0	165	0
Almaty City	182,865	61,908	117,621	2,989	0	0	0	347
Republican institutions	4,881	2,660	2,221	0	0	0	0	0
Total	**2,980,294**	**1,662,556**	**1,207,303**	**20,327**	**8,647**	**2,964**	**165**	**503**

Source: web-site of the Ministry of Education and Science <www.edu.gov.kz>.

Table 2.E. Number of schools with different languages of instruction

Years	Total number of schools (not including correctional and deviant organizations)	Including schools with the following languages of instruction:						
		Kazakh	Russian	With 2 and more languages	Uigur	Uzbek	Tajik	Ukrainian
2000	8,007	3,545	2,356	2,008	13	81	3	1
2001	8,068	3,648	2,321	1,999	14	82	3	1
2002	7,989	3,632	2,199	2,062	14	78	3	1
2003	7,925	3,636	2,122	2,069	14	80	3	1

Source: «Education and Science of the Republic of Kazakhstan», 2003 (Informational statistical material).< www.edu.gov.kz>.

Table 2.F. Number of teachers by level of education, 2003/04

Oblast	Total number of teachers			Level of education					
	Total	Including		Higher education			Vocational education		
		Urban areas	Rural areas	Total	Including		Total	Including	
					Urban areas	Rural areas		Urban areas	Rural areas
The Republic of Kazakhstan	**285,854**	**125,265**	**160,589**	**207,244**	**101,116**	**106,128**	**67,167**	**21,717**	**45,450**
Akmola	15,177	5,103	10,074	9,641	3,789	5,852	4,829	1,205	3,624
Aktobe	15,143	6,254	8,889	10,419	4,946	5,473	3,712	1,120	2,592
Almaty	31,838	8,285	23,553	23,636	6,526	17,110	7,077	1,547	5,530
Atyrau	9,968	4,913	5,055	7,883	3,872	4,011	1,831	910	921
East Kazakhstan	23,978	10,514	13,464	18,216	8,571	9,645	5,346	1,851	3,495
Zhambyl	20,836	7,704	13,132	14,715	5,993	8,722	4,864	1,461	3,403
West Kazakhstan	13,842	3,940	9,902	9,067	3,193	5,874	4,557	742	3,815
Karaganda	21,418	14,895	6,523	15,669	11,600	4,069	4,866	2,945	1,921
Kostanay	14,572	5,776	8,796	9,739	4,672	5,067	4,281	1,049	3,232
Kyzylorda	15,324	8,642	6,682	11,748	6,964	4,784	3,101	1,479	1,622
Mangistau	6,346	4,252	2,094	4,265	2,912	1,353	1,694	1,137	557
Pavlodar	13,270	6,484	6,786	8,559	4,942	3,617	4,100	1,464	2,636
North Kazakhstan	14,126	3,533	10,593	9,096	2,967	6,129	4,224	524	3,700
South Kazakhstan	50,775	15,729	35,046	37,187	12,765	24,422	10,869	2,467	8,402
Astana City	4,052	4,052		3,543	3,543		489	489	
Almaty City	15,189	15,189		13,861	13,861		1,327	1,327	

Source: Agency on Statistics of the Republic of Kazakhstan.

Table 2.G. State budget expenditures on education by institutions of the Ministry of Education and Science (inc. ADB loans), million KZT

	2000 (report)	2001 (report)	2002 (report)	2003 (refined plan)
Including Republican budget	10,959	17,234	14,290	21,092
Including local budget	70,457	85,842	104,687	129,553
Total	**81,416**	**103,076**	**118,977**	**150,645**
In percentage to GDP	3.1	3.1	3.2	3.4

Source: «Education and Science of the Republic of Kazakhstan», 2003 (Informational statistical material). <www.edu.gov.kz>.

Table 2.H. Government expenditure on education by institutions of the Ministry of Education and Science, million KZT

Educational level	2000 (report)	2001 (report)	2002 (report)	2003 (refined plan)
Pre-school education	2,975	3,322	3,880	4,591
In percentage to GDP	0.1	0.1	0.1	0.1
Secondary education	60,007	67,224	81,744	99,659
In percentage to GDP	2.3	2.0	2.2	2.3
Primary vocational education	2,693	3,018	3,910	5,354
In percentage to GDP	0.1	0.1	0.1	0.1
Vocational education	2,662	2,528	2,989	3,512
In percentage to GDP	0.1	0.1	0.1	0.1
Higher education	8,120	9,344	11,783	12,780
In percentage to GDP	0.3	0.3	0.3	0.3
Other educational programs	4,959	17,640	14,671	24,749
In percentage to GDP	0.2	0.5	0.4	0.6
Totally	**81,416**	**103,076**	**118,977**	**150,645**
In percentage to GDP	3.1	3.1	3.2	3.4

Source: «Education and Science of the Republic of Kazakhstan», 2003 (Informational statistical material). <www.edu.gov.kz>.

Reduce child mortality

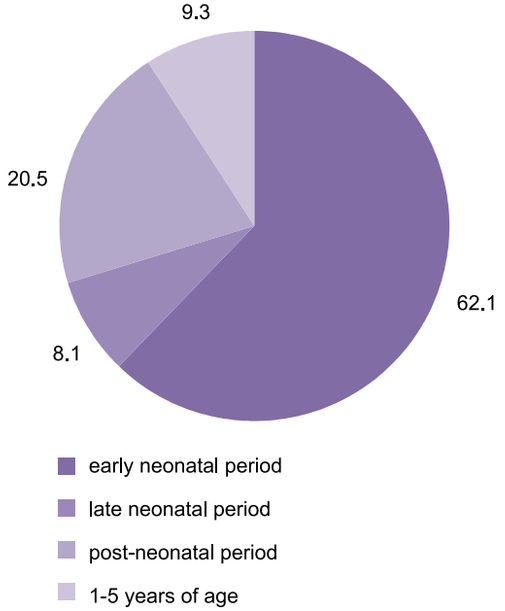
Table 4.A. Infant mortality by oblast (per 1,000 live births)

Region	1995	1998	1999	2000	2001	2002	2003	2004
Republic of Kazakhstan	**27.0**	**21.6**	**20.4**	**18.8**	**19.1**	**17.0**	**15.7**	**14.5**
Akmola	26.3	20.6	23.8	16.5	17.1	13.0	11.8	13.6
Aktobe	27.7	23.6	17.7	22.6	20.9	18.7	19.8	15.4
Almaty	21.5	15.0	15.9	13.1	11.8	10.8	12.5	11.8
Atyrau	29.6	25.6	21.0	18.5	21.6	18.1	16.4	13.8
East Kazakhstan	31.7	22.2	20.1	19.7	20.2	19.0	17.5	16.4
Zhambyl	34.2	23.2	22.8	22.9	20.7	18.5	15.9	15.9
West Kazakhstan	25.2	21.7	20.0	16.1	17.9	15.6	15.8	14.4
Karaganda	26.1	22.3	21.3	18.8	19.8	16.3	14.7	11.9
Kostanay	25.1	21.9	20.7	21.8	19.3	16.0	16.2	14.5
Kyzylorda	30.7	25.7	21.9	22.2	25.4	23.7	22.4	19.5
Mangistau	36.4	25.9	32.3	25.3	26.6	20.6	17.4	17.9
Pavlodar	27.1	22.0	25.5	26.6	25.9	21.1	16.1	15.9
North Kazakhstan	25.1	22.9	19.5	15.7	14.9	15.0	14.0	14.8
South Kazakhstan	25.7	21.2	19.6	18.8	19.6	17.3	15.3	14.6
Astana city		20.2	18.1	15.0	17.5	16.3	12.9	12.1
Almaty city	19.7	19.9	15.8	13.4	14.9	16.8	15.1	12.9

Source: Agency on Statistics of the Republic of Kazakhstan.

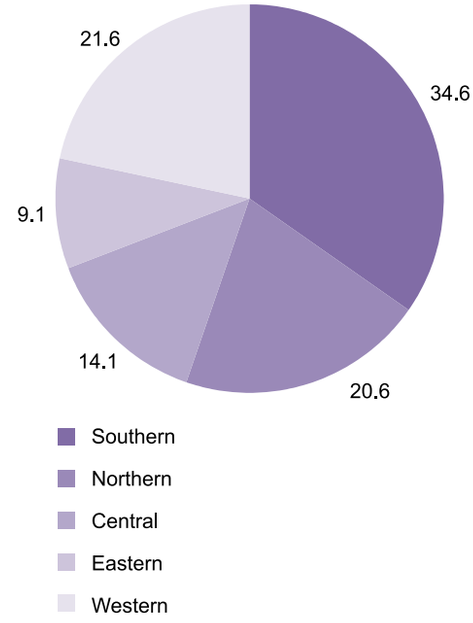
! The discrepancy between the data of the MoH and the Agency on Statistics of the RK is due to the latest recalculation of the average annual population numbers during 1994-2004.

Graph 4.A. Child mortality by age group.



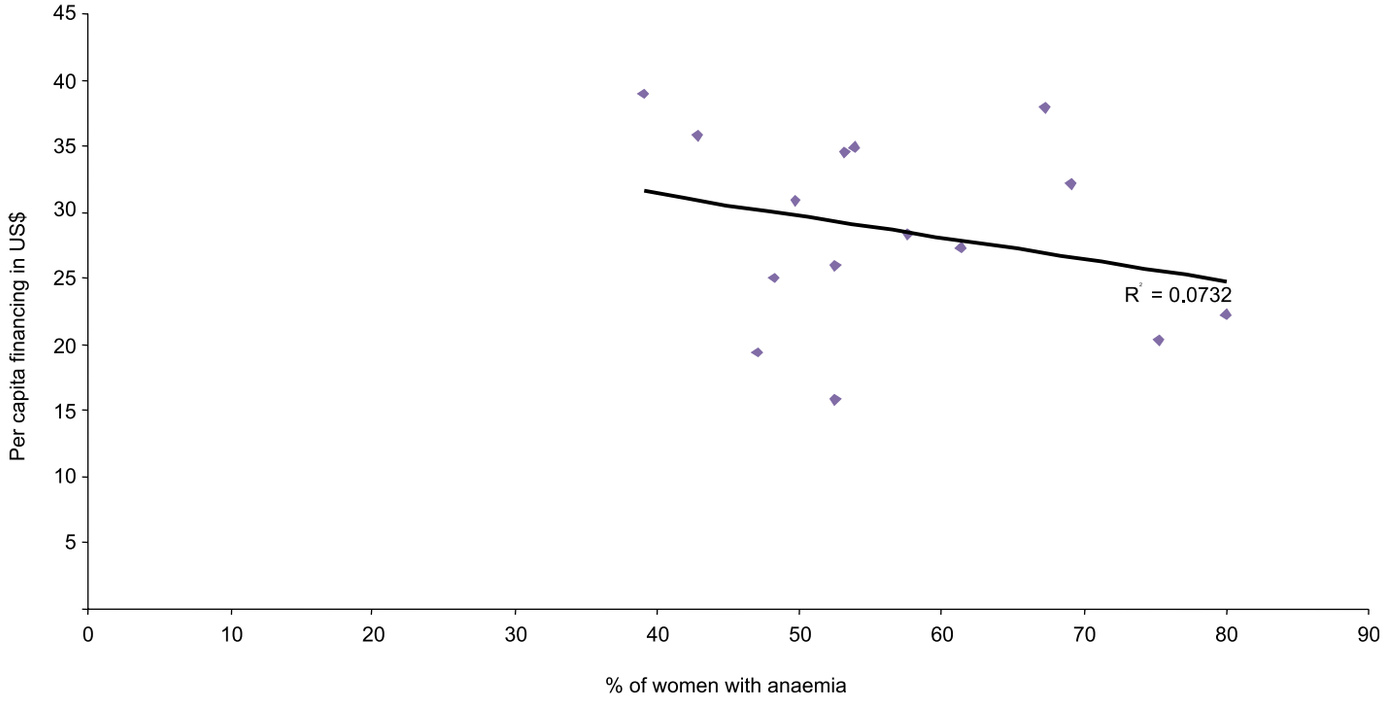
Source: «Causes of Infant and Child Mortality in Kazakhstan», UNICEF, 2003.

Graph 4.B.Child mortality (0-5 yrs) by region.



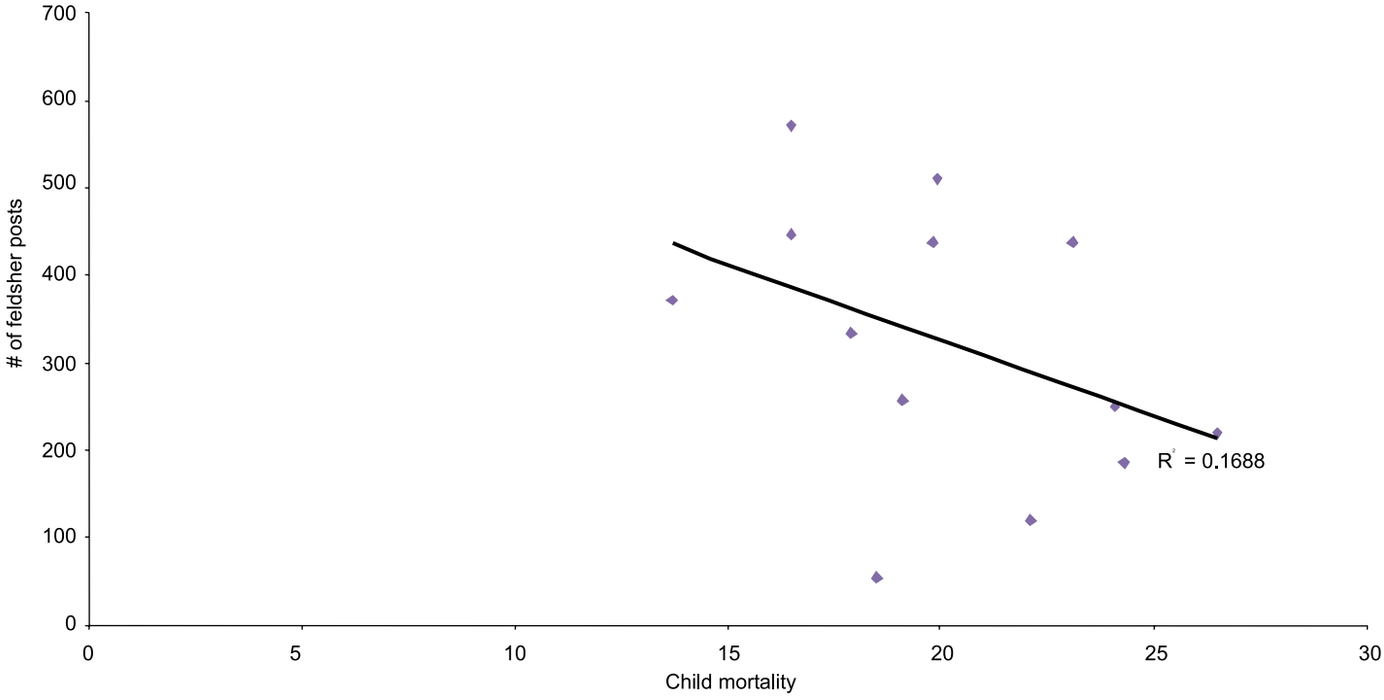
Source: «Causes of Infant and Child Mortality in Kazakhstan», UNICEF, 2003.

Graph 4.C. Correlation between the per capita financing and incidence of anemia



Source: James Cerkone, Improvement of Quality of Maternal and Child Healthcare in Kazakhstan: Plans for Future, 2002.

Graph 4.D. Inverse correlation between the number of feldsher posts and child mortality.



Source: James Cerkone, Improvement of Quality of Maternal and Child Healthcare in Kazakhstan: Plans for Future, 2002.

Table 4.B. Basic figures on the healthcare expenditure in Kazakhstan

Category	Eastern Kazakhstan	Akmola	Kyzylorda	Southern Kazakhstan	National estimate
Total expenditure (KZT) '000	4,729,099	3,691,991	3,460,344	5,017,478	100,797,590
Total expenditure (US$) '000	31,527	24,613	23,069	33,450	671,984
Per capita expenditure (KZT)	3,225.9	4,934.5	5,730.9	2,377.1	6,714.9
Per capita expenditure (US$)	21.5	32.9	38.2	15.8	44.8
Expenditure on maternal and child health-care (MCH) (KZT) '000	929,496.4	35,9762.4	301,855.2	742,237.8	13,305,281.9
Expenditure on maternal and child health-care (MCH) (US$) '000	6,196.6	2,398.4	2,012.4	4,948.3	88,701.9
Per capita expenditure on MCH (KZT)	1,057.4	722.1	693.8	492.9	1,528.1
Per capita expenditure on MCH (US$)	7.0	4.8	4.6	3.3	10.2
MCH as a proportion of total healthcare expenditure (%)	19.7	9.7	8.7	14.8	13.2

Source: James Cerkone, Improvement of Quality of Maternal and Child Healthcare in Kazakhstan: Plans for Future, 2002.

Table 4.C. If someone in the family is ill, is the cost of treatment an obstacle to asking for medical aid? Results by average monthly income per household member, %

Monthly income per household member	# of respondents	Response, %		
		No	Partly	Always
< 4,000 tenge	856	22.3	52.0	25.7
4,001-6,000 tenge	293	33.1	48.5	18.4
6,001-10,000 tenge	407	44.2	41.3	14.5
10,001-15,000 tenge	201	54.2	33.3	12.5
> 15,000 tenge	97	61.9	27.8	10.3
Refused to provide income figures	9	11.1	55.6	33.3
No income	62	9.7	38.7	51.6

Source: Accessibility and Quality of Medical Services, UNICEF, 2004.

Table 4.D. Correlation between the total population's expenses in cases of hospitalization and the reported income per household member in a six-month period, by region

	Reported income per household member in 6 months, tenge	Average cost of treatment in a hospital, tenge	% of 6-month income per household member
Astana	58,881	9,396	16.0
Kyzylorda	22,471	6,481	28.8
Karaganda	38,339	9,343	24.4
East-Kazakhstan oblast	34,866	8,580	24.6
South-Kazakhstan oblast	20,125	9,362	46.5
Total	**35,159**	**8,827**	**25.1**

Source: Accessibility and Quality of Medical Services, UNICEF, 2004.

Table 4.E. What sexually transmitted infections (STI) do you know? Results in the common group and by place of residence, %

	Total (N=1925)	Urban (N=1106)	Rural (N=819)
HIV/AIDS	98.2	98.4	98.1
Syphilis	95.6	96.9	93.8
Gonorrhea	80.7	85.7	74.0
Trichomoniasis	54.6	62.5	43.8
Chlamydiosis	38.7	46.4	28.3
Hepatitis B	36.7	44.5	26.3
Genital herpes	23.2	30.7	13.2
Papilloma infection	13.0	17.3	7.2
Difficult to answer	0.9	0.5	1.3
Other	**0.2**	**0.2**	**0.1**

Source: Accessibility and Quality of Medical Services, UNICEF, 2004.

Table 4.F: Immunization coverage in Kazakhstan

Year	BCG, %	DPT3, %	Polio3, %	Measles, %	Mumps, %	Hepatitis B, %
1995	90	93	94	95	13	
2001	98.3	95.8	96.7	99.8	100.8	97.4

Source: Accessibility and Quality of Medical Services, UNICEF, 2004.

Improve maternal health

Table 5.A.Maternal mortality ratio per 100,000 live births by oblast

	1990	1999	2000	2001	2002	2003	2004
The Republic of Kazakhstan	**75.8**	**65.3**	**60.9**	**48.6**	**50.5**	**42.1**	**36.9**
Akmola	89.6	83.6	68.4	39.2	39.1	38.2	8.9
Aktobe	61.5	71.2	61.3	42.5	40.0	36.9	50.1
Almaty	97.9	63.7	50.1	38.8	39.6	36.6	36.5
Atyrau	84.1	73.3	108.6	35.7	79.5	86.0	50.3
East Kazakhstan	76.7	102.3	71.0	72.9	64.5	49.7	47.1
Zhambyl	63.8	111.8	60.6	48.5	41.7	39.2	15.1
West Kazakhstan	47.8	39.7	26.9	88.0	35.9	44.6	30.9
Karaganda	57.0	52.2	43.9	31.2	35.2	22.1	46.9
Kostanay	89.8	75.3	92.9	9.4	37.0	35.6	35.4
Kyzylorda	37.1	15.9	47.4	84.5	33.3	57.0	58.6
Mangistau	57.6	97.3	160.5	59.7	66.5	112.2	61.9
Pavlodar	39.2	68.6	22.7	56.6	43.5	41.3	28.9
North Kazakhstan	76.7	54.6	66.2	53.4	53.4	13.2	13.5
South Kazakhstan	81.0	65.5	51.3	57.0	63.4	33.6	37.2
Almaty City	110.0	19.5	66.4	27.5	64.8	28.0	25.0
Astana City		21.3	65.0	20.6	17.6	90.8	63.2

Source: Public Health and Health Organizations Activities in 1990-2004, MoH.

Table 5.B.Maternal mortality structure in Kazakhstan

	Maternal mortality ratio per 100,000 live births					Specific density (%)				
	1999	**2000**	**2001**	**2002**	**2003**	**1999**	**2000**	**2001**	**2002**	**2003**
Obstetric hemorrhages	15.3	12.7	14.4	17.1	11.3	23.4	20.9	29.6	33.9	26.9
Other complications (extragenital diseases)	13.0	17.7	8.5	13.3	10.1	19.8	29.1	17.6	26.3	24.0
Abortion	16.2	16.4	11.2	11.5	7.3	25.0	26.9	23.2	22.9	22.1
Eclampsy	11.6	8.2	9.9	5.6	7.3	17.7	13.4	20.4	11.0	17.3
Sepsis	7.4	4.1	4.1	3.0	3.6	11.3	6.7	8.3	5.9	8.7
Abdominal pregnancy	1.9	1.8	0.5		0.4	2.8	3.0	0.9		1.0
Total	**65.3**	**60.9**	**48.6**	**50.5**	**42.1**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: RSRCMCHP.

Table 5.C.Principal causes of maternal mortality, 1999-2004

Oblast	I place/specific density	II place/ specific density	III place/ specific density
Akmola	abortion-30.0%	hemorrhages -26.2%	sepsis-15.0%
Aktobe	hemorrhages -32.3%	extragenital disease –19.0%	abortion -13.0%
Almaty	eclampsy -31.0%	hemorrhages -27.9%	abortion -18.0%
Atyrau	hemorrhages -35.2%	eclampsy -29.7%	extragenital disease –16.2%
East Kazakhstan	abortion -34.3%	eclampsy -18.6%	hemorrhages -14.3%
Zhambyl	hemorrhages -28.6%	abortion -20.4%	extragenital disease –18.4%
West Kazakhstan	hemorrhages -31.8%	abortion -22.7%	extragenital disease –13.6% sepsis – 13.6%
Karaganda	abortion -41.0%	hemorrhages -15.4% eclampsy -15.4%	sepsis -10.3%
Kostanay	abortion -29.0%	hemorrhages -22.6% extragenital disease –22.6%	sepsis –9.8% eclampsy – 9.8%
Kyzylorda	hemorrhages -29.7%	abortion -27.0%	extragenital disease –16.2%
Mangistau	hemorrhages -31.6%	abortion -18.4% eclampsy -18.4%	extragenital disease –15.8%
Pavlodar	hemorrhages -33.3%	abortion -29.2%	eclampsy –16.7%
North Kazakhstan	abortion -47.4%	hemorrhages –15.8%	sepsis –10.5% eclampsy – 10.5% extragenital disease -10.5%
South Kazakhstan	hemorrhages –34.5%	eclampsy –15.5%	abortion –13.5%
Almaty city	abortion –29.6%	hemorrhages -18.2% extragenital disease –18.2%	eclampsy –13.6%
Astana city	abortion –47.1%	hemorrhages –23.5%	extragenital disease –17.6%

Source: RSRCMCHP.

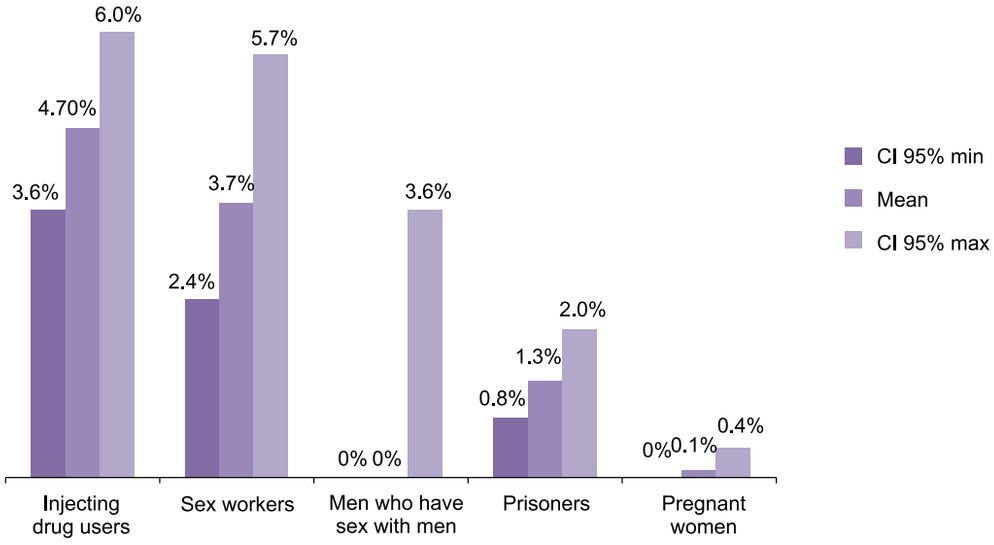
Table 5.D.Maternal mortality structure by oblast, 1999-2004

Oblast	Obstetric hemorrhages	Extragenital diseases	Abortions	Sepsis	Gestosis	Other	Abdominal pregnancy
Akmola	7/26.2%	2/7.2%	8/30.0%	4/15.0%	2/7.2%	2/7.2%	2/7.2%
Aktobe	10/32.3%	6/19.0%	4/13.0%	3/9.8%	4/12.9%	3/9.8%	1/3.2%
Almaty	17/27.9%	3/4.9%	11/18.0%	5/8.3%	19/31.0%	5/8.3%	1/1.6%
Atyrau	13/35.2%	6/16.2%	5/13.5%		11/29.7%	2/5.4%	
East Kazakhstan	10/14.3 %	8/11.4%	24/34.3%	5/7.1%	13/18.6%	8/11.4%	2/2.9%
Zhambyl	14/28.6%	9/18.4%	10/20.4%	2/4.0%	9/18.4%	5/10.2%	-
West Kazakhstan	7/31.8%	3/13.6%	5/22.7%	3/13.6%	2/9.1%	2/9.1%	-
Karaganda	6/15.4 %	3/7.6%	16/41.0%	4/10.3%	6/15.4%	4/10.3%	-
Kostanay	7/22.6 %	7/22.6 %	9/29.0%	3/9.8%	3/9.8%	1/3.1%	1/3.1%
Kyzylorda	11/29.7 %	6/16.2 %	10/27.0%	1/2.7%	6/16.2%	3/8.2%	-
Mangistau	12/31.6 %	6/15.8 %	7/18.4%	7/18.4%	1/2.6%	5/13.2%	-
Pavlodar	8/33.3 %	2/8.2 %	7/29.2%	1/4.2%	4/16.7%	1/4.2%	1/4.2%
North Kazakhstan	3/15.8 %	2/10.5 %	9/47.4%	2/10.5%	2/10.5%	1/5.3%	-
South Kazakhstan	51/34.5 %	19/12.8 %	20/13.5%	14/9.6%	23/15.5%	19/12.8%	2/1.3%
Almaty city	8/18.2 %	8/18.2%	13/29.6%	3/6.8%	6/13.6%	6/13.6%	-
Astana city	4/23.5 %	3/17.6 %	8/47.1%	1/5.9%	-	1/5.9%	-

Source: RSRCMCHP.

Combat HIV/AIDS and tuberculosis

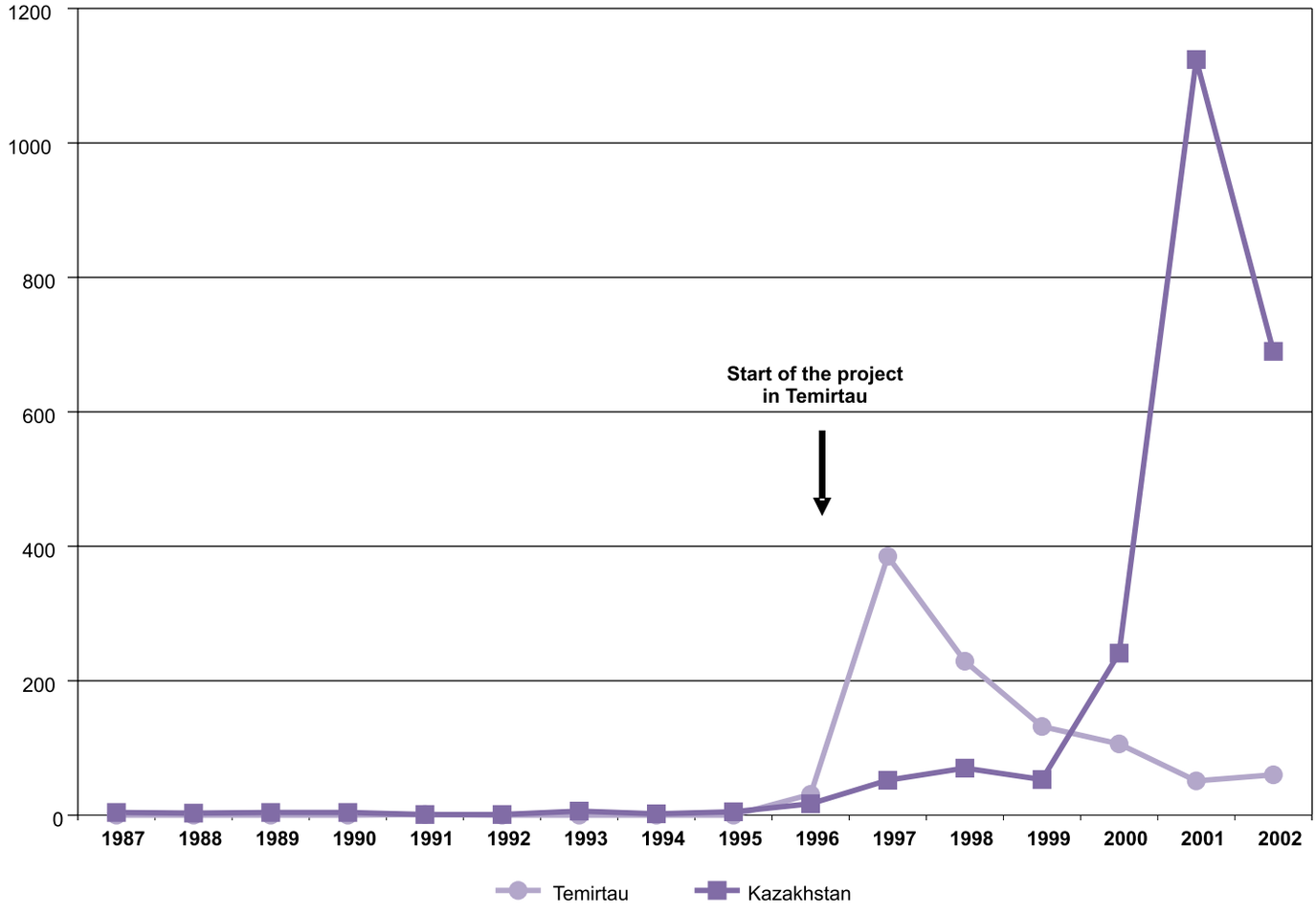
Graph 6.A.HIV infection prevalence among different groups of population



(n –number of observations, CI – confidential interval)

Source: Data of the Sentinel Surveillance held in Karaganda, Pavlodar, Uralsk, Shymkent in 2004, Republican AIDS Center, CDC.

Graph 6.B. Number of newly revealed incidents of HIV infection in Kazakhstan (except Temirtau) and in the town of Temirtau in 1987-2002



Source: Joint Project of the Government and UN Kaz 99/002 «Coordinated Program for Healthy Lifestyle Development».

Table 6.A.Registered TB incidence per 100,000 population by oblast of Kazakhstan

Oblast	1998	1999	2000	2001	2002	2003	2004*
Akmola	117.7	150.8	169.6	195.5	220.6	219.8	189.0
Aktobe	134.4	256.1	231.6	213.7	259.4	279.7	242.6
Almaty	95.8	115.8	118.4	115.5	123.1	120.6	108.9
Atyrau	158.5	168	177.1	267.8	242.6	225.7	218.1
East Kazakhstan	114.1	80	114.1	138.1	149.6	143.2	153.2
Zhambyl	121	147.1	156.4	157.4	151.1	155.4	150.9
West Kazakhstan	144.1	174.1	186.7	211.4	222.6	208.8	189.9
Karaganda	127.7	123.4	144.7	148	172.4	171.7	173.8
Kostanay	111.4	121.8	149.3	170	178.8	165.6	170.8
Kyzylorda	233.8	290	303.3	291.6	292.2	278.2	243.2
Mangistau	180.1	225.7	258.9	247.8	237.9	217.7	209.2
Pavlodar	129	159.3	201.1	196.9	194.7	198	198.5
North Kazakhstan	116.3	127	143.2	136.5	140.7	134.1	183.7
South Kazakhstan	87.6	103.1	121.1	112.6	119.6	115.7	105.8
Astana city		195.1	198.3	131.2	162.8	132.7	113.7
Almaty city	78.7	72.1	72.8	67.9	69.4	72.3	69.9
The Republic of Kazakhstan	**118.8**	**141**	**152.6**	**154.7**	**165.1**	**160.4**	**154.3**

Source: Tuberculosis Statistics Reviews, Ministry of Health of the Republic of Kazakhstan and National TB Center, Ministry of Health of the Republic of Kazakhstan, 1998-2004.

**Provisional data of the Agency on Statistics of the Republic of Kazakhstan*

Table 6.B. Registered mortality from TB per 100,000 population by oblast of Kazakhstan

Oblast	1998	1999	2000	2001	2002	2003
West Kazakhstan	47.1	36.5	33.5	23.7	22.4	21.9
Aktobe	43.6	36.7	39.9	34.4	33.3	32.4
Atyrau	34.3	35.4	29.4	29.7	31.5	23.5
Mangistau	43. 6	42.6	39.9	43.3	43.9	33.7
Kostanay	42.9	43.0	37.4	25.6	28.7	29.5
North Kazakhstan	42.4	29.0	22.1	27.5	31.0	26.5
Akmola	35.5	27.7	30.0	30.0	27.6	25.8
Karaganda	45.0	35.1	29.9	28.0	29.5	27.2
Kyzylorda	47.6	47.6	38.9	28.2	26.0	25.1
South Kazakhstan	21.0	18.9	15.6	15.2	15.1	13.5
Zhambyl	37.3	28.2	23.1	22.2	21.8	20.9
Pavlodar	56.5	35.7	35.7	35.2	38.6	38.6
East Kazakhstan	55.4	40.9	28.6	29.3	27.6	22.5
Almaty	21.9	19.7	17.3	17.2	11.3	9.8
Almaty city	27.5	17.8	15.5	12.0	14.3	17.1
The Republic of Kazakhstan	**38.4**	**30.7**	**26.4**	**23.6**	**24.2**	**22.4**

Source: Tuberculosis Statistics Reviews, Ministry of Health and National TB Center of the Republic of Kazakhstan, 1998-2004.

Ensure environmental sustainability

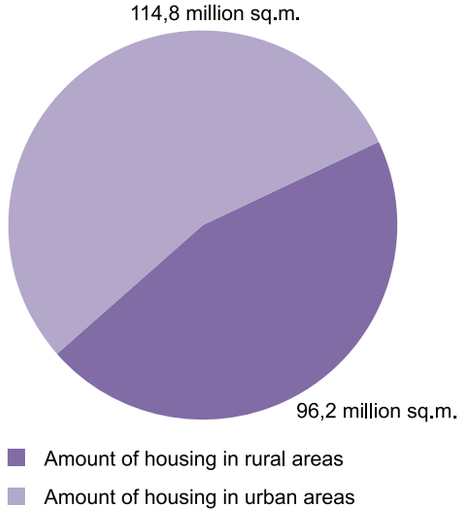
Table 7.A. Specially Protected Areas in Kazakhstan

SPA type	Quantity	Area	
		(million ha)	(%)
Total SPAs	106	14.77	5.3
State Nature Monuments	26	0.006	0.14
National Nature Reserves	10	1.29	0.46
National Parks	8	2.33	0.84
Reserve Zones	5	4.4 (excluding the Caspian Sea reserve zone)	1.61
Nature Reserves (zakaznik)	57	5.58 (excluding the territories of Almaty and Rahman Springs nature reserves, which are included in the national parks)	2.0
SPAs with area of over 100,000 ha	21		
SPAs with area of over 1 mln ha	4 (including the Caspian Sea reserved zone)		
Ramsar Convention objects (globally significant wetlands)	3	0.7	0.25
Global Nature Heritage objects	0		
Transboundary SPAs	0		
Biosphere reserves/zapovednik	0		
Marine SPAs	0		

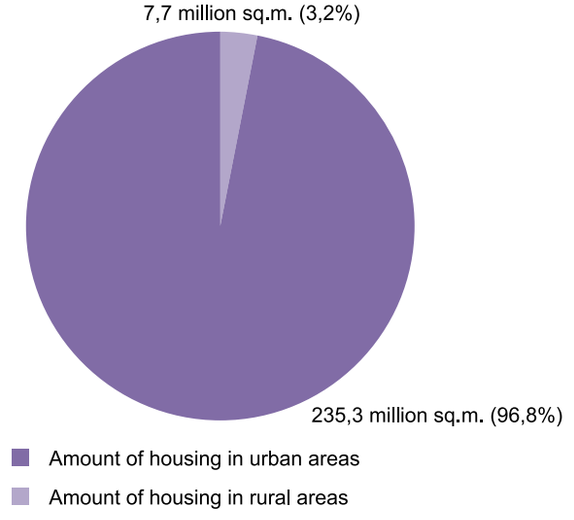
Source: Environment and Development Nexus in Kazakhstan. UNDP Kazakhstan. Almaty, 2004.

Graph 7.A.

According to the data of the Housing Resources Register, the total amount of housing of the Republic of Kazakhstan on January 1, 2004 was 243.0 million sq.m.



More than 96.8% of housing resources are in private property (235.3 million sq.m.) and 3.2% – are in state ownership(7.7 million sq.m.)



Source: The Decree of the President of the Republic of Kazakhstan of June 11, 2004 # 1388 About State Programme of Housing Development in the Republic of Kazakhstan in 2005-2007.

Develop global partnership for development

List of 23 DAC members and dates of membership

1. Australia – member since 1966.
2. Austria – member since 1965.
3. Belgium – member since 1961.
4. Canada – member since 1961.
5. Denmark – member since 1963.
6. Finland – member since 1975.
7. France – member since 1961.
8. Germany – member since 1961.
9. Greece – member since 1999.
10. Ireland – member since 1985.
11. Italy – member since 1961.
12. Japan – member since 1961.
13. Luxembourg – member since 1992.
14. Netherlands – member since 1961.
15. New Zealand – member since 1973.
16. Norway – member since 1962.
17. Portugal – joined the DAC in 1961, withdrew in 1974, and re-joined in 1991.
18. Spain – member since 1991.
19. Sweden – member since 1965.
20. Switzerland – member since 1968.
21. United Kingdom – member since 1961.
22. United States – member since 1961.
23. Commission of the European Communities – member since 1961.

United Nations Millennium Declaration: Millennium Development Goals (MDGs)

Goals and Targets		*Indicators*
Goal 1:	**Eradicate extreme poverty and hunger**	
Target 1:	Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	1. Proportion of population below USD 1 per day (PPP-values) 2. Poverty gap ratio [incidence x depth of poverty] 3. Share of poorest quintile in national consumption
Target 2:	Halve, between 1990 and 2015, the proportion of people who suffer from hunger	4. Prevalence of underweight children (under-five years of age) 5. Proportion of population below minimum level of dietary energy consumption
Goal 2:	**Achieve universal primary education**	
Target 3:	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	6. Net enrolment ratio in primary education 7. Proportion of pupils starting grade 1 who reach grade 5 8. Literacy rate of 15-24 year olds
Goal 3:	**Promote gender equality and empower women**	
Target 4:	Eliminate gender disparity in primary and secondary education preferably by 2005 and to all levels of education no later than 2015	9. Ratio of girls to boys in primary, secondary and tertiary education 10. Ratio of literate females to males of 15-24 year olds 11. Share of women in wage employment in the non-agricultural sector 12. Proportion of seats held by women in national parliament
Goal 4:	**Reduce child mortality**	
Target 5:	Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	13. Under-five mortality rate 14. Infant mortality rate 15. Proportion of 1 year old children immunised against measles
Goal 5:	**Improve maternal health**	
Target 6:	Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio	16. Maternal mortality ratio 17. Proportion of births attended by skilled health personnel
Goal 6:	**Combat HIV/AIDS, malaria and other diseases**	
Target 7:	Have halted by 2015, and begun to reverse, the spread of HIV/AIDS	18. HIV prevalence among 15-24 year old pregnant women 19. Contraceptive prevalence rate 20. Number of children orphaned by HIV/AIDS
Target 8:	Have halted by 2015, and begun to reverse, the incidence of malaria and other major diseases	21. Prevalence and death rates associated with malaria 22. Proportion of population in malaria risk areas using effective malaria prevention and treatment measures 23. Prevalence and death rates associated with tuberculosis 24. Proportion of TB cases detected and cured under DOTS (Directly Observed Treatment Short Course)

Goal 7:	Ensure environmental sustainability	
Target 9:	Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	25. Proportion of land area covered by forest 26. Land area protected to maintain biological diversity 27. GDP per unit of energy use (as proxy for energy efficiency) 28. Carbon dioxide emissions (per capita) [Plus two figures of global atmospheric pollution: ozone depletion and the accumulation of global warming gases]
Target 10:	Halve, by 2015, the proportion of people without sustainable access to safe drinking water	29. Proportion of population with sustainable access to an improved water source
Target 11:	By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	30. Proportion of people with access to improved sanitation 31. Proportion of people with access to secure tenure [Urban/rural disaggregation of several of the above indicators may be relevant for monitoring improvement in the lives of slum dwellers]
Goal 8:	**Develop a Global Partnership for Development**	
Target 12:	Develop further an open, rule-based, predictable, non-discriminatory trading and financial system Includes a commitment to good governance, development, and poverty reduction – both nationally and internationally **Target 13:** Address the Special Needs of the Least Developed Countries Includes: tariff and quota free access for LDC exports; enhanced programme of debt relief for HIPC and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction **Target 14:** Address the Special Needs of landlocked countries and small island developing states (through Barbados Programme and 22nd General Assembly provisions) **Target 15:** Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term	*Some of the indicators listed below will be monitored separately for the Least Developed Countries (LDCs), Africa, landlocked countries and small island developing states.* *Official Development Assistance* 32. Net ODA as percentage of DAC donors' GNI [targets of 0.7% in total and 0.15% for LDCs] 33. Proportion of ODA to basic social services (basic education, primary health care, nutrition, safe water and sanitation) 34. Proportion of ODA that is untied 35. Proportion of ODA for environment in small island developing states 36. Proportion of ODA for transport sector in land-locked countries *Market Access* 37. Proportion of exports (by value and excluding arms) admitted free of duties and quotas 38. Average tariffs and quotas on agricultural products and textiles and clothing 39. Domestic and export agricultural subsidies in OECD countries 40. Proportion of ODA provided to help build trade capacity *Debt Sustainability* 41. Proportion of official bilateral HIPC debt cancelled 42. Debt service as a percentage of exports of goods and services 43. Proportion of ODA provided as debt relief 44. Number of countries reaching HIPC decision and completion points
Target 16:	In co-operation with developing countries, develop and implement strategies for decent and productive work for youth	45. Unemployment rate of 15-24 year olds
Target 17:	In co-operation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries	46. Proportion of population with access to affordable essential drugs on a sustainable basis
Target 18:	In co-operation with the private sector, make available the benefits of new technologies, especially information and communications	47. Telephone lines per 1000 people 48. Personal computers per 1000 people *Other indicators will be further established*

Glossary

MDG 1. Eradicate extreme poverty and hunger

Gross Regional Product (GRP)	is the regional analogue of the gross national product (GDP) calculated for the whole country to measure its economic activity. At the production stage, the GDP is the sum of the added value of economy, while at the consumption stage it is the market value of goods and services meant for end consumption, saving, and export. The sum of GRPs is less than the GDP by the sum of the undistributed portion (by region) of the GDP.
Poverty incidence	is measured by the proportion of people whose income is less than the subsistence minimum.
Subsistence minimum	is the minimum per capita income equal to the cost of the minimum consumer basket, which consists of the food basket (70%), and non-food items and services (30%).
Poverty line	The international poverty line equals 1.08 US dollars PPP (Purchasing Power Parity) a day. In Kazakhstan, a special «poverty line» was established to assign social assistance. Since 2002, this poverty line has been 40% of the subsistence minimum.
Food poverty	is determined by the proportion of people with income below the food basket.
Population's income used for consumption (or household income)	is composed of both the amount of monetary income spent on consumption and the consumption of self-produced goods.
Poverty depth	is the average income shortfall of the poor as a proportion of the poverty line (subsistence minimum) applied to the whole population.
Poverty severity	shows income inequality among the poor – the variation of the income of the poor from the average.
Assets coefficient	the ratio of the income of the richest 10% to the income of the poorest 10% of society.
Lorence's coefficient or Gini index	allows for the quantitative assessment of the degree of income inequality. It measures the degree of deviation of actual income distribution by quantitatively equal groups from a line of even distribution. It ranges from 0 (absolute income equality among all groups of the population) to 1(absolute inequality when all income is received by one person), or from 0% to 100%. The Gini coefficient value of 0.2-0.3 (20-30%) refers to moderate inequality, 0.3-0.4 (30-40%) – perceptible, and 0.4-0.5 (40-50%) – significant inequality.
«Hidden hunger»	is the prevalence of micronutrient deficiency among the population.

MDG 2. Achieve universal primary education

Access (to education)	the real opportunities of a school-age person to attend school. Access depends on the availability of schools within an easily reachable distance from one's home and the appropriateness of the instruction with regard to the economic conditions of attending, special conditions for students with special needs, and the language of instruction.
Accreditation of educational institutions	approval by the state authorities that the higher education institution or vocational college in question is entitled to issue certificates of graduation in state-approved format to students completing certain curricula offered by that institution.
Assessment (in education)	a complex of methods and procedures for establishing the quality of learning of each student in each subject (course, module). The main purposes of assessment include accountability for progress made in learning and feedback to the teacher and student, which is important for steering the process of learning.
Bachelor, Master	academic degrees awarded upon the completion of studies following the corresponding curricula of higher education.
College	an institution providing secondary vocational training curricula.
Competencies	complex outcomes of education at the level of advanced skills to produce information and understand it in subject areas, basic dispositions with regard to questions of ethics, and attitudes towards sensitive issues in the society.
Curriculum	a document describing the goals and objectives of learning, main content areas, and the expected outcomes of the course or period of studies in question.
Deviant behaviour	the systematic misbehaviour of children and adolescents, such as deliberately missing classes or work, systematically leaving the family, and not being present in the training and upgrading of institutions. Socially dangerous behaviour which is not subject to legal punishment is also considered to be deviant.
Distance education	a form of education. A targeted and methodologically arranged guidance to learners by electronic and telecommunication means.
Education	the continuous process of training and upbringing to achieve a high level of moral, intellectual, cultural, and physical development. The professional competence of the members of society.
Educational grant	financial support that covers university tuition fees and is awarded to prospective students on a competitive basis.
Educational loan	a loan that covers university tuition fees and is awarded to prospective students on a competitive basis.
Education enrolment	the total proportion of pupils accepted at all stages of education irrespective of their age, of the total number of the population from 15 to 24 years of age.
Education process	the system of interrelations between teaching and learning, ensuring the development of a person.
Elite education	education provided in special educational institutions for gifted learners following special curricula.
Final state testing of students	a procedure arranged to determine the degree of mastery of the national mandatory standard of the corresponding educational level with the certificate to be issued on the result of this procedure (certificate, graduation certificate, license, or diploma).

Gymnasium	a secondary education institution offering specialized curricula for students with deeper interests in some subject areas.
Gymnasium-school (lyceum-school)	secondary education institution with specialized curricula of the gymnasium or lyceum in parallel to the ordinary school curriculum
Formal education	training that culminates in graduation with a certificate or diploma, carried out in educational and training institutions.
Inclusive education	a set of organizational and technical conditions, pedagogical methods, and dispositions supported by organizational culture, which allow special-needs students to attend mainstream schools instead of learning in closed institutions.
Informatization of education	providing schools with ICT infrastructure; the basic content to be used for learning and teaching purposes in the virtual environment.
In-service training	officially recognised forms of updating professional knowledge and the skills of teachers and school administrators. These are necessary in the process of making essential changes to the development of the education system and in improving the practice of the pedagogical community.
Institute	a higher educational institution providing curricula of higher vocational education and carrying out scientific research of an applied nature.
Learning outcomes	the changes in thinking, skills, and attitudes of a person, which result from an organized learning process.
Life-Long Learning (LLL)	the concept of personal development in knowledge and society. It includes three main types of education – formal, informal, and just-in-time learning. These are intertwined with each other and spread over the whole lifespan of a person.
Life-skills-based education	a selection of content and methods of education which aims at developing essential capacities for students to live independently.
Lyceum	a secondary education institution following general education curricula and providing basic vocational training at the secondary level (grades 10-11).
National educational standards	a set of mandatory requirements for each educational level with regard to the content of education, maximum study load, rules and procedures of public control of the quality of education, level of knowledge of the students, and format of documents certifying the completion of certain curricula by the graduates.
National policies in education	decisions taken at national level about the aims, expected outcomes, and ways of functioning of the education system at all levels. The emerging focus of national education policies internationally is ensuring access to education at all levels and for people of all ages, and improving the quality of education.
Non-formal training	education provided by additional educational institutions and vocational training that doesn't lead to a certificate of completion of a level of education.
Oralman	ethnic Kazakhs who have migrated to Kazakhstan from other countries, where they have been living due to historical or other reasons.
Outcomes-oriented education	a model of content regulation in education, which is based on definitions of expected outcomes at all levels of education and in all learning (subject) areas.
Profession	the basic type of a person's activity or job, proven by the appropriate graduation certificate.

Professional development (of teachers)	ways to update and further develop the professional knowledge and skills of qualified teachers. Professional development can be initiated on the basis and in the framework of official requirements or by the teachers and schools seeking to improve the outcomes of their work.
Qualification	the type and degree of professional readiness of the graduate for professional activities or the next stage of education reflected in the graduation document.
Quality assurance (in education)	complex measures in the education system or in one educational institution (school) to create conditions which stimulate and help the students and teachers, strive for high quality education. Quality assurance is based on different assessments.
Quality of education	complex characteristics of the process and outcome of learning with a view to their appropriateness to the student and level of achievements vis a vis expected outcomes and set targets.
Secondary school	a secondary general educational institution providing basic and additional curricula and consisting of three stages: primary, basic, and upper school.
Shifts (in school)	the organization of the learning process for over-crowded schools: different groups of students (classes) attend school starting at different times of the day.
Small-scale school	a general school with a low number of pupils, combined classes, and with a specific form of studies.
State educational order	a plan for training qualified workers and specialists set up by the relevant public authorities to be implemented under budget funding: the procurement of services of primary vocational, secondary vocational, higher vocational, and post-graduate education; the provision of state educational grants and loans on a competitive basis.
Study plan	a basic document regulating the list and scope of study disciplines (subjects) of the corresponding educational level, the process of studies, and forms of control.
Unified National Testing	a procedure arranged to determine the degree of mastery of the national mandatory standard of the corresponding educational level, along with the certificate to be issued on the result of this procedure
University	multi-profile higher educational institution that provides training under higher vocational and post-graduate curricula with a wide range of specialties; provides re-training and/or upgrading of the qualification of specialists with higher education, scientific and pedagogical staff; carries out applied scientific research; is the lead scientific and methodological centre in the corresponding sector.

MDG 3: Promote gender equality and empower women

Gender	a social construct that means socially and culturally conditioned and historically formed differences between the groups of people whose initial division was defined by biological sex.
Gender analysis	the analysis of the impact that proposed or existing programs, legislation, and policies have on women and men; data collection and the detection of gender-related trends in economy and social life.
Gender inequality	social inequality between women and men, based on women's reproductive function and the unequal division of labor in the society.
Gender equality	the feature of society in which women and men have equal access to public resources and participate equally in social governance.
Gender indicators	quantitative and qualitative indicators of the status and opportunities of men and women in the society.
Gender stereotypes	social stereotypes based on a traditional understanding of femininity and masculinity and their hierarchy.
Gender balance	the actual or planned leveling of the socio-economic status of women and men (equal income distribution, participation in decision making, distribution of household duties, level of education, morbidity rates, and life expectancy).
Gender budget	a methodology based on a gender approach to budget formulation and administration.
Gender gap	the difference between women and men in terms of their participation, access to resources, rights, remuneration, and benefits.
Gender development index	the adjusted human development index that measures the average achievements of men and women in the three basic dimensions captured in the human development index (average life expectancy, access to education, and adjusted real income).
«Glass ceiling»	invisible and formally undefined barriers that hamper women's career growth.
Human Development Index (HDI)	an integrated indicator of living standards, an arithmetic mean of education, income (GDP), and life expectancy indices.
Sexism	discrimination by sex
«Sticky floor»	low starting opportunities for women on the labor market due to the coincidental timing of fulfilling the reproduction function and starting a professional career. This leads to women lagging behind in their professional growth.
Violence against women	aggressive behavior of men towards women to establish authority and compensate inner complexes, manifested through psychological, physical, sexual, and economic violence.

MDG 4: Reduce child mortality

Child mortality	the number of deaths of children aged from 1 to 5 years per 1,000 live births.
Early neonatal mortality	infant deaths during the first 168 hours after birth per 1,000 live births.
Extremely low birth weight	birth weight between 500 g and 999 g.
Infant mortality	the number of infants who died in the first year after birth per 1,000 live births.
Late neonatal mortality	infant deaths within the period from 7 to 28 full days after birth per 1,000 live births.
Low birth weight	birth weight below 2,500 g (including 2,499 g).
Maternal mortality	the annual number of deaths of women caused by pregnancy and birth complications per 100,000 live births.
Neonatal mortality	infant deaths during the first 28 full days after birth per 1,000 live births.
Perinatal mortality	foetal deaths prior to or during delivery (the latter is referred to as stillbirth) and deaths of newborns within the first 168 hours after birth per 1,000 live births.
Post-neonatal mortality	infant deaths during the period from 28 full days to 12 full months after birth, per 1,000 live births.
Pre-term birth	when a baby is born before 37 weeks of gestation (under 259 days).
Term birth	when a baby is born between 37 and 42 full weeks of gestation (259-293 days).
Under-five mortality	the number of deaths within the first five years after birth per 1,000 live births.
Very low birth weight	birth weight between 1,000 g and 1,500 g (including 1,499 g).

MDG 5: Improve maternal health

DVC Syndrome	accompanies many diseases and all terminal conditions. The syndrome is characterized by the diffused intravascular coagulation and aggregation of blood cells, the activation and exhaustion of coagulation and fibrinolytic systems components (including physiological anticoagulants), and the disruption of microcirculation in organs and their dystrophy and dysfunction, manifested through susceptibility to thromboses and bleeding.
Eclampsy (pre-eclampsy)	a pregnancy complication due to high blood pressure that leads to cramps.

MDG 6: Combat HIV/AIDS and tuberculosis

HIV/AIDS

About HIV- infection

HIV- infection occurs in humans as a result of exposure to this relatively new virus. It is thought that in the middle of XXth century, after continuous mutations, a lymphotropic monkey virus, which was not dangerous for humans earlier, crossed the typological barrier and started to cause diseases in humans.

HIV belongs to the group of RNA viruses, the family of retroviruses. RNA (ribonucleic acid) is a nucleic acid that acts as a carrier of the genetic code and is found in all living cells. Inside each human cell, RNA is formed upon a DNA template and is responsible for copying genetic information from DNA (via transcription) and then translating it into proteins. In the case of retroviruses, everything happens in the reverse order. Protein synthesis relies on reverse transcriptase to perform a kind of reverse transcription of its genome from RNA into DNA. After viral DNA is produced, it comes into contact with the DNA of human cells and forces infected human cells to synthesize viral RNA, thus multiplying the virus.

HIV-virus primarily attacks cells of the immune system, particularly certain lymphocytes, or so- called CD4+ cells. Infected cells are then forced to produce new viral particles and die afterwards. At the beginning, the death of lymphocytes is compensated by their increased production. During this stage, infected people feel healthy. Later decompensation begins: a number of lymphocytes and other immune cells decrease and the infected person becomes vulnerable to different disease-causing agents, especially the ones that were relatively safe under normal conditions. These agents include: Mycobacterium tuberculosis, Pneumocystis carinii, Toxoplasma gondii, Kaposi sarcoma virus, and others. The infected person dies from the secondary infections that emerge as a result of the immune system deficiency, or immunodeficiency. AIDS (Acquired Immunodeficiency Syndrome or Acquired Immune Deficiency Syndrome) is the final stage of HIV- infection. The term «acquired» is used because immunodeficiency is caused by viral infection, and does not result from the inherited deficiency of immune factors, as in the case of primary immunodeficiency or the intake of certain medicines as in the case of secondary immunodeficiency.

Presently, there is no vaccine developed that can protect people from acquiring HIV. Antiretroviral therapy is now available and can prolong the lives of HIV-infected people by blocking virus multiplication. If taken immediately after the exposure, antiretroviral drugs can also be used as a prophylaxis to prevent the development of the infection process. HIV can rapidly adapt to different environmental agents, including antiretroviral drugs, especially when the latter are not used properly. For example, the decreased drug concentration caused by irregular drug intake can facilitate the selection of drug-resistant virus strains.

There are only three ways HIV can be transmitted: through blood, during sexual contact, and from an infected mother to her child. HIV is not very contagious. The virus can be destroyed during boiling and disinfection with chlorine solutions. The latex condom is an effective means to prevent infection during sexual contact.

Abstinence (from Latin abstinentia)	is manifested through a grave physical or psychological condition experienced by a drug addict after sudden termination of the use of drugs.
AIDS	acquired immune deficiency syndrome, the final stage of HIV infection.
Antiretroviral medicine	the drug used to kill or inhibit the multiplication of retroviruses such as HIV.
ART (antiretroviral therapy)	the treatment that uses antiretroviral medicines.
Cannabis	the most commonly used illicit drug; considered a soft drug; it consists of the dried leaves of the hemp plant.
Confidence Interval	An interval (range of values) such that there is a specific probability (herewith less than 5%) that a parameter (e.g. the mean) lies within that interval.
Contagiousness	the capability of an infective agent of being transmitted, or the degree of likelihood of getting infected during contact with a microbe.
Disinfectants (disinfecting substances)	substances used to destroy or eliminate pathogens.
Drug addiction narcotism	a person's dependence on drug intake; the disease when a body's vital functions are sustained at a certain level only under the condition of the continuous intake of narcotic substances, leading to the severe exhaustion of physical and mental functions. Drastic termination of narcotic intake leads to the interruption of many functions of an organism.

Drug demand reduction	a term that defines policies, programs, services, and actions that work to reduce the demand for drugs. The focus of interventions is often the prevention of drug intake by young people.
Drug harm reduction	the term that defines policies, programs, services, and actions that work to reduce the health and the social and economic harm to individuals, communities, and societies that are associated with the use of drugs. The focus of risk reduction interventions is usually the drug-taking behavior of the drug user.
Drugs (narcotics)	(Greek narkotikós – intoxicating, bringing to the state of stupor), a group of substances of various nature (vegetative, of synthetic origin), the abuse of which leads to drug addiction.
Generic medicines	reproduced or copied medicines which contain active substances and non-active components similar to the original ones. Large pharmaceutical companies invent original (or brand) medicines in the process of high technology investigations, which consume a considerable amount of resources. Patents protect these medicines. However, as soon as the patent validity expires, these medicines become common property and can be copied legally. The issues concerning the use of illegal generic drugs in the countries where brand drugs are not widely used, because of the absence of a solvent demand, are subject to regulation by international agreement.
Hepatitis C	an infectious liver disease caused by a virus which is mostly transmitted by blood.
Heroin	a narcotic drug, a morphine derivative that causes euphoria and addiction.
HIV	human immunodeficiency virus.
IDU	injecting drug users; the term includes those who inject drugs from time to time and drug addicts.
Immune deficiency	the inability of the human organism to protect itself from pathogens.
Immune system	the organism's system that detects, processes, and removes alien bodies and substances. It includes red marrow, spleen, glands (lymphocytes), and the accumulation of lymphatic tissue in various organs.
Immunity	resistance to infectious agents and alien substances.
Incidence	the number of new cases of disease in the given year.
Infection	a complicated process of interaction between a microorganism and a macroorganism (human), from bearing to disease.
Leucocytes	white blood cells that arise in the bone marrow and mediate the immune response.
MSM	men who have sex with men regardless of their sexual orientation; the term includes homosexuals, bisexuals, and heterosexuals, based on whether they have sexual contacts with other men.
Opiate	a narcotic drug that contains opium or opium derivative (e.g. heroin, methadone, morphine etc.).
Opportunistic diseases	diseases that occur in people with weak immune systems because their agents, which normally are not very harmful, take immediate advantage in the case of immune deficiency.
Palliative care	the treatment aimed at alleviating a patient's suffering (pain, retching, coughing, etc) without treating the causes or mechanisms of a disease.
PLWHA	people living with HIV/AIDS; the term includes both HIV-positive people and their families.
Prevalence	the ratio (for a given time period) of the number of occurrences of the infection, disease, or other events to the number of units at risk in the population.
Probability	the quantitative characteristic of the likelihood of the occurrence of a certain event in circumstances that may change indefinitely.

Retroviruses	a group of viruses that contain RNA.
Sentinel surveillance	the study of infection rates in a specific cohort, area, sub-population etc. to estimate trends in the larger population.
STI	sexually transmitted infections; the term is used instead of the obsolete «venereal diseases», and unites a wide range of infections, including syphilis, gonorrhea, urinogenital chlamydiosis, trichomoniasis, and others.
Strain	a group of micro-organisms within a species that differs in a minor way from the similar group.
SW	commercial sex workers – people who engage in sexual contacts for money or other goods/ benefits with people who seek sexual satisfaction. Such terms as 'prostitute' are generally avoided as they bear a negative connotation.
Syndrome	a combination of signs describing a disease.
Syphilis	a sexually transmitted infectious disease caused by Treponema pallidum.
Virus	a simplified parasitic agent that is able to penetrate the cells of a living host and force them to replicate and multiply the virus. Viruses consist of nucleic acid (DNA and RNA) and protein cover.

TB

DOTS	the global tuberculosis control strategy recommended by the World Health Organization.
DOTS – Plus	the multi-drug resistant tuberculosis control strategy recommended by WHO and based on the use of second-generation medications.
MDR TB (Multi-Drug Resistant TB)	tuberculosis caused by M. tuberculosis strains that are resistant to at least isoniazid and rifampicin, the two most effective anti-TB medications.
Mortality (Intensive mortality indicator)	the number of deaths from TB in the given year, per 100,000 population.
Treatment Success Rate	the ratio of the number of cured patients and patients who completed treatment to the number of registered patients, in percents.
TB (tuberculosis)	the infectious disease caused by a group of mycobacteria that form Mycobacterium Tuberculosis Complex.
TB Incidence (Intensive incidence indicator)	the number of new TB cases per 100,000 population registered in the given year.

MDG 7: Ensure environmental sustainability

Total forest area	includes the area covered by natural and artificially created forests but excludes the area of plantation used for agricultural purposes.
Total internal primary energy supply (power consumption)	calculated by the International Atomic Energy Agency (IAEA) according to the following formula: fuel production + manufacturing resources + import – export – international sea bunker fuel + change in reserves. This includes coal, raw oil, natural gas condensate, raw materials (oil), additives, oil products, gases, renewable fuels and wastes, electricity, and heat. The difference between internal output and end consumption is that the former does not include the redistribution losses. The supply and consumption of energy products are converted to kg of the oil equivalent with the use of a standard coefficient for every energy source.

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