Japan International Cooperation Agency (JICA)

Local Government of Mangistau Oblast
Government of the Republic of Kazakhstan

MASTER PLAN STUDY
ON
INTEGRATED REGIONAL DEVELOPMENT
FOR
MANGISTAU OBLAST
IN
THE REPUBLIC OF KAZAKHSTAN

FINAL REPORT
VOLUME II
MAIN REPORT

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Kazakhstan with Administrative Divisions

Location of Mangistau Oblast in the Pan-Caspian Sea Economic Cooperation Area

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Abbreviations

AISCP	Aktau International Sea Commercial Port
BAC	Birch activated carbon
BOD	Biological oxygen demand
BTC	Baku Tbilisi Ceyhan Pipeline Company
CBD	Central business district
CDM	Clean development mechanism
CEP	Caspian Environmental Program
CIS	Commonwealth of Independent States
CTID	Committee for Transport Infrastructure Development
DLSP	Department of Labor and Social Protection
DNR&WM	Department of Natural Resources and Wildlife Management
DO	Dissolved oxygen
DOA	Department of Agriculture
DOCS	Department of Community Services
DOE	Department of Education
DOH	Department of Health
DSEC	Department of State Sanitary and Epidemiological Control
DUCER	Department of Use and Control of Environment Resources
EBRD	European Bank of the Reconstruction and Development
EIA	Environmental impact assessment
ELV	Emission limited value
EPZ	Export processing zone
EU	European Union
FCF	Fixed capital formation
FCI	Fixed capital investment
FDI	Foreign direct investment
FFHC	Forestry, Fishing and Hunting Committee
GDP	Gross domestic product
GHG	Greenhouse gas
GRDP	Gross regional domestic products
IAEA	International Atomic Energy Agency
ICOR	Incremental capital-to-output ratio
ICT	Information, communication technology
IMF	International Monetary Fund
IRDMP	Integrated regional development master plan
JI	Joint implementation
JICA	Japan International Cooperation Agency
JSC	Join stock company
KAZHYDROMET	Kazakhstan Hydro-Metrological Service
KAZINVEST	Kazakhstan Investment Promotion Center
KMG	KazMunaiGaz
Kolhoz	Former Collective Farms
KTO	KazTransOil
KTZ	Kazakhstan Temir Zholy (Kazakhstan Railways)
KZT	Kazakh tenge
LLP	Limited liability partnership
LQ	Location quotient
MAEK	Mangyshlak Atomic Energy Combine
MENR	Ministry of Ecology and Resources
MNU	Mangistau Oil Pipeline Management

MOE	Ministry of Energy
MOED	Ministry of Education
MOEP	Ministry of Environmental Protection
MOER	Ministry of Emergency Response
MPC	Maximum permissible concentrations
MPD	Maximum permissible discharge
MTC	Ministry of Transport and Communications
NBK	National Bank of Kazakhstan
NEDO	New Energy and Industrial Technology Development Organization
OJT	On-the-job training
PC	Personal computer
PCM	Project cycle management
pcu	Passenger car unit
PPP	Public-private partnership
PVC	Polyvinyl chloride
R&D	Research and development
SCADA	Supervisory control and data acquisition
SER	State Environmental Review
SEZ	Special economic zone
SME	Small and medium sized enterprise
Sovhoz	State Farms
SQ	Sector quotient
TB	Tuberculosis
TRACECA	Transport Corridor: Europe-Caucasus-Asia
TSHO	Tengizshevroyl
TSV&V	Heat, Water Supply and Sewerage Network
UMG	UzenMunaiGas
UNECE	United Nations Economic Commission for Europe
UNICEFF	United Nations Children's Fund
WTO	World Trade Organization
WWTP	Wastewater treatment plant

CHAPTER 1 INTRODUCTION

1.1 Background to the Study

1.1.1 Study authorization

The Government of Kazakhstan, well understanding the importance of the successful development of Mangistau *Oblast* (province) to the entire nation, requested to the Government of Japan (GOJ) a technical assistance for formulating the Integrated Regional Development Master Plan for Mangistau Oblast. In response to the request, the GOJ decided to conduct the Master Plan Study on Integrated Regional Development for Mangistau Oblast in the Republic of Kazakhstan (the Study).

Accordingly, the Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of the technical cooperation programs of Japan, dispatched the Preparatory Study Team to Kazakhstan in December 2006 to discuss the Scope of Work for the Study. The Kazakhstan authorities represented by the Akimat of Mangistau Oblast and the JICA Preparatory Study Team agreed and signed the Scope of Work for the Study. By the end of May 2007, JICA appointed a team of consultants (the Study Team) nominated by RECS International Inc. in association with Yachiyo Engineering Co., Ltd. to carryout the Study.

1.1.2 Study objectives

The objectives of the Study as agreed are as follow:

(1) To formulate the Integrated Regional Development Master Plan for Mangistau Oblast including Aktau City (IRDMP) with a view to promoting industrial growth and social sector development so as to the economy and to diversity the economy and to increase business activities and employment opportunities in the Oblast, and to realize sustainable development of the Oblast

(2) To pursue technology and know-how transfer to the responsible organizations and their staff with a focus on regional planning and industrial development based on the Japanese experiences

The Akimat was required to submit the “Strategy for Territorial Development of Mangistau Oblast” to the central government in July 2007, and the “(Competitive) Strategy for Development of Aktau City” in February 2008. The JICA Study Team were expected to provide some recommendations to the Akimat in time for their respective submission.

1.1.3 Study Area

The area covered by the Study is the administrative territory of Mangistau Oblast, which occupies the southwestern corner of the Republic of Kazakhstan, facing the Caspian Sea to the west. Administratively, Mangistau Oblast consists of the two cities and five districts (*rayon*s) after the new rayon of Munaylinsky was created in July 2007 covering rural settlements in the former Aktau

city and parts of the Tupkaragan, the Karakiya and the Mangistau rayons. The Study will cover the entire territory of the Republic as necessary in clarifying the position of Mangistau Oblast in the national socio-economic development. The Study will place a special emphasis on the Aktau and the Zhanaozen cities and areas planned by the Oblast for the development of industry, tourism, seaport, the new Aktau city and the new Caspian State University of Technology and Engineering.

1.2 Work Progress

1.2.1 Inception works

The JICA Study Team, after preparatory works in Japan, arrived in Kazakhstan on June 24, 2007 to start the first fieldwork period. After presentation of the Inception Report to the Ministry of Economy and Budget Planning in Astana, the JICA Study Team moved to Aktau and established its office within the Akimat of Mangistau Oblast. The first meeting of the Coordination Committee established for the Study was convened on June 27 chaired by the Deputy Akim in charge. At the beginning of the meeting, the Deputy Akim assured that the Coordination Committee would fully cooperate with the JICA Study Team. The JICA Study Team presented the Inception Report, and discussions followed.

The Coordination Committee expressed that the Inception Report as presented had met the requirements, but pointed out some data on macro economics needed updating. The discussions covered such subjects as industrial clusters, Pan-Caspian Sea economic cooperation, new railway links, tourism potentials, and diversification of the Oblast economy. The Coordination Committee expressed hope that the experiences of Japanese experts would be reflected in the Study and the Study would contribute to the formulation of the regional development strategy currently worked out by the Akimat.

Subsequently, the JICA Study Team visited several offices and key facilities to obtain first-hand information on some aspects of the Oblast. They include the Akimat offices of the Karakiya, Zhanaozen Tupkaragan, and Aktau rayons, the Aktau port, Kuryk port village and industrial settlement, the Aktau Seaport Special Economic Zone and its administration, the pilot irrigation area in Kyzylsai, the Kendyrli resort facilities, and the Bautino port area.

At the meeting on June 6, the Kazakh/JICA joint team was formed by nominating a Kazakh expert as a partner for each of the JICA Study Team member. It was agreed that the meeting would be held, in principle, every Friday from 4:00pm.

1.2.2 Stage 2 and Stage 3 works

(1) Analysis on existing conditions

The work during this stage continued through October with JICA experts in charge of different sectors in cooperation with Kazakh experts and assistants. Existing conditions of Mangistau Oblast were analyzed by sector based on readily available data and study reports collected jointly by the Kazakh/JICA joint team.

In order to generate additional data for selected aspects of the Oblast socio-economy, surveys were planned and entrusted to Kazakh consultants. These are: 1) Distribution and Logistic Industry Survey, 2) Industry Survey, 3) Investment Potential Survey, 3) Survey on Rural Development, and 5) Traffic Survey.

(2) Joint team meetings

Throughout this stage, the JICA Study Team worked closely with the Kazakh counterpart team for data collection, analyses and discussions. In particular, meetings of the Kazakh/ JICA joint team were held several times to share the analyses and preliminary proposals by the JICA Study Team members and to discuss on various development issues involved in the Mangistau regional development. The schedule and main subjects of each meeting are summarized below.

No.	Date	Main subjects
1	July 6, 2007	Team administration; problem structure analysis
2	July 13, 2007	Objectives and basic strategy for Mangistau regional development; preparation for surveys
3	July 20, 2007	Agricultural development conditions and prospects
4	July 27, 2007	Locational advantage analysis for industrial development
5	August 3, 2007	Macroeconomic comparisons among CIS, similar GDP countries, etc.
6	September 28, 2007	Development prospects by rayon
7	October 5, 2007	Current situations of distribution sector
8	October 12, 2007	Existing environmental conditions and natural resources management

(3) Compilation of the Progress Report

The results of all the works during this stage were compiled into the Progress Report. The surveys that were entrusted to Kazakh consultants made good progress during this period, but their results were not obtained as of October 15, and thus not reflected in the Progress Report. The Report was prepared first in English, and then translated into Russian.

1.2.3 Stage 4 works

(1) Discussions on the Progress Report

The contents of the Progress Report were presented at the workshop organized on October 17, and also at a stakeholders' meeting convened on October 22 by the Akim of Mangistau Oblast. Participants agreed on some proposals presented such as the importance of logistic industry, tourism and linkage industries, water resources as critical condition for the Mangistau regional development, concerns on environmental problems associated with oil exploration in the northern Caspian Sea, and the need for additional port facilities. They pointed out some deficiencies in the data used by the JICA Study Team, and in this connection, the Akim urged more active cooperation of the Kazakh officials and experts for more satisfactory results of the Study.

At these sessions, development alternatives not contained in the Progress Report were also presented and discussed. The Akim clarified that the Mangistau regional development should pursue a high economic growth alternative to meet the expectation of the Government, although the importance of the equity-oriented and environmental friendly development should not be neglected. Additional comments from many related organizations and concerned individuals were received by the JICA Study Team throughout the Stage 4 work period, which were examined by the Team for reflection in the Study.

(2) Planning works

From early November through late December, planning works by sector were conducted. On-going and planned projects were reviewed and additional projects were formulated. Also, institutional measures to complement the project implementation were formulated in different sectors. The

projects and programs formulated by sector were adjusted from the regional development point of view in the light of the development objectives and the basic strategy established as contained in the Progress Report. Most projects were packaged into development programs and initiatives.

(3) Compilation of the Interim Report

The results of all the works during Stage 4 were compiled into the Interim Report. The Report contained part of the Progress Report revised based on the comments by the Kazakh side as well as further works. The Report presented a draft integrated regional development plan for Mangistau Oblast.

1.2.4 Stage 5 works

(1) Discussions on the Interim Report

To present the Interim Report to a wide audience, a seminar was organized on January 21 chaired by the Deputy Oblast Akim. Participants clarified the present situations of some projects including the Kenderli airport, Bautino port, Beineu-Aktau road and health care programs. The difficulty in pursuing the natural gas based development was pointed out. Additional comments from related organizations and concerned individuals were received by the JICA Study Team throughout the Stage 5 work period, which have been examined by the Team for reflection in the Study.

(2) Detailed planning

Throughout Stage 5, more specific strategies and measures were formulated including support measures for the oil and gas downstream industries. For newly formulated projects and programs, profiles were prepared and investment costs were estimated. A financial framework was worked out based on the macro economic data of Kazakhstan and Mangistau and the related projections by the Oblast Akimat. A stage-wise development plan was prepared, and an indicative investment schedule was examined in the light of the projected financial framework.

(3) Training in Japan

Two Kazakh counterpart experts had opportunities to participate in training programs in Japan on regional development and planning. A few more young experts were also benefited from short training courses in Japan. The training experiences of the Kazakh experts were shared at the Kazakh/JICA joint team meetings.

(4) Compilation of the Draft Final Report

The results of all the works through Stage 5 were compiled into the Draft Final Report (this report). It consisted of four volumes: Executive Summary, the Master Plan Report, the Sector Report, and the Survey Report. The Master Plan Report contained the revised master plan of the Mangistau regional development, including the stage-wise development plan, indicative investment schedule and project profiles. The Sector Report contained more detailed analysis on existing conditions by sector. The Survey Report has been prepared by compiling the results of surveys conducted by Kazakh consultants.

1.2.5 Study finalization

To present the Draft Final Report widely, a seminar was convened on May 29. The seminar was chaired by the Oblast Akim throughout the session, and close to 100 Oblast officers, experts and representatives of other organizations participated. Responding to the presentation by the JICA Study Team, the Akim noted that some of the projects proposed were already initiated, the oil and gas, tourism and logistic industries would be three main directions for the Oblast to pursue, and the supports of the Central Government, foreign investors and donors should be sought to implement the Master Plan. The Akim also clarified that the Deputy Akim should prepare a directive to promote and implement the Master Plan.

The Draft Final Report has been further elaborated through Stage 6 for the Study finalization in Japan. Comments by the Kazakh side on the Draft Final Report, received by the end of June, have been reflected as much as possible, and the Final Report has been prepared.

1.3 Guide to the Master Plan Report

This is the Master Plan Report of the Draft Final Report. The remaining part of the Report is structured in the following way. In Chapter 2, the existing conditions of the Kazakhstan's socio-economy are reviewed to clarify its position in the recent evolution and also in comparison to other related countries. In Chapter 3, the position of Mangistau Oblast in Kazakhstan is examined from three viewpoints: regional economic structure, spatial development, and commodity trade and external trade.

Chapter 4 presents the development diagnosis by rayon/city, revised from the earlier version contained in the Progress Report based on the comments by the Kazakh side. It contains also the diagnosis for the Munaylinsky rayon newly created.

In Chapter 5, objectives and basic strategy for the Mangistau regional development are presented, and more specific strategies by sector are derived. In Chapter 6, development alternatives are first defined, and examined from several points of view, and the most ambitious yet realistic alternative is defined. For the alternative thus defined, socio-economic and spatial development frameworks are formulated, and the development scenario with four industrial clusters is proposed and development phasing is indicated.

In Chapter 7, the revised version of the integrated regional development plan for Mangistau Oblast is presented. It consists of four development initiatives formulated by packaging projects and programs proposed in different sectors. Institutional measures to complement the project implementation are incorporated in some packages to form development programs. Chapter 8 contains broader institutional measures to support the Master Plan implementation.

Finally in Chapter 9, the implementation program is presented, including a stage-wise development plan, an indicative investment schedule and initial actions to be taken following the master planning.

CHAPTER 2 SOCIO-ECONOMY OF KAZAKHSTAN

2.1 Macro Socio-economic Performance since Independence

2.1.1 Socio-economic development since independence

(1) Independence

The Republic of Kazakhstan became independent on December 16, 1991 as the last former USSR country gaining independence after the disintegration of the Soviet Union. It is one of the 12 Commonwealth of Independent States (CIS), consisting of Armenia, Belarus, Kazakhstan, Kyrgyz, Moldova, Russia, Tajikistan, Turkmenistan (an associate member), Ukraine, Uzbekistan, Azerbaijan and Georgia. It is also a constituent of the Central Asia comprising Kazakhstan, Kyrgyz, Tajikistan, Turkmenistan and Uzbekistan, which has been newly defined by the Russian Federation as the "Middle Asia" under its authority as declared by the leaders of the constituent countries.

(2) Performance during the 1990's

During the 1990's after the independence, Kazakhstan experienced decline in population and economic production. The population decreased by more than 9% from 16,329,000 in 1990 to 14,846,000 in 2001. The decrease was caused by ethnically selective out-migration, led by Russian followed by German. It is reported that 1.5 million Russians and 500,000 Germans, corresponding to more than half of the German population in Kazakhstan, left the country between 1989 and 1999 (US Library of Congress, Country Profile of Kazakhstan). This changed the ethnic composition from almost equal shares of Kazakh and Russia to the dominant share of Kazakh at 53.4% in 1999, followed by Russian (30%), Ukrainian (3.7%), Uzbek (2.5%), German (2.4%), Tatar (1.7%), Uygur (1.4%) and others (4.9%).

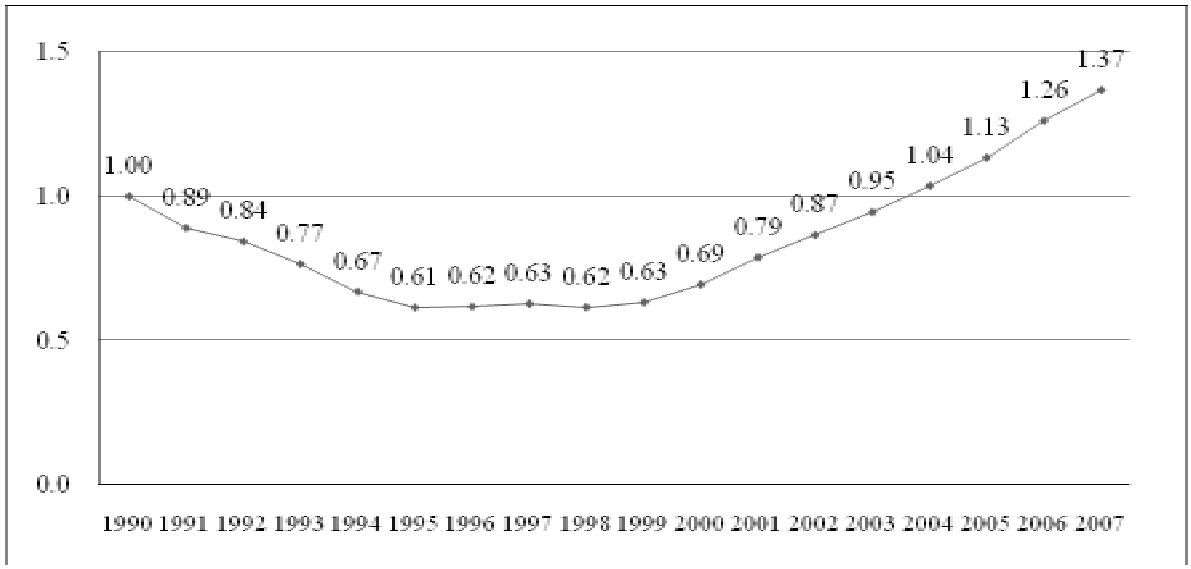
The out-migration caused the loss of technical expertise provided by these ethnic groups. For instance, the out-migration of medical experts undermined the medical system particularly in rural areas. This may be a main reason for Kazakhstan to have one of the worst medical performance among the former Soviet countries. The Russian and German populations were mainly urban, concentrated in the northern provinces, while the Kazakh population is predominantly rural, concentrated in the southern provinces.

The gross domestic product (GDP) declined significantly in real terms during the 1990's as shown in Figure 2.1. It decreased in 1995 to 61% of the level in 1990 before it started to increased slowly, except in 1998, when it decreased again affected by the Russian financial crisis and the crop failure. It was only in 2004 that the GDP recovered the 1990 level.

Kazakhstan started its efforts for transition to the market-oriented economy as it introduced the price liberalization and the small enterprises privatization in 1992. Kazakhstan is now evaluated by the European Bank for Reconstruction and Development (EBRD) as one of the best performing CIS countries for transition to the market-oriented economy. The price liberalization has reached

the level of "comprehensive price liberalization" characterized by state procurement at non-market prices largely phased out, and only a small number of administered prices remain. The ultimate level described as "standards and performance typical of advanced industrial economies" is characterized by complete price liberalization with no price control outside housing, transport and natural monopoles.

Further efforts during the 1990's were directed to the fields of the large-scale enterprises privatization, the trade and foreign exchange system reform, and the electric power sector reform. Significant results have been observed in these areas as well. More recently, the policy emphasis has shifted to the promotion of foreign direct investments especially in the mining and energy sectors, which has led to the rent economic boom.



Sources: *Statistical Year Book 2006*, Agency of Statistics; Institute for Economic Strategies Central Asia for data of 2006-2007; preliminary data for 2007

Figure 2.1 Changes in Real GDP Compared to GDP in 1990

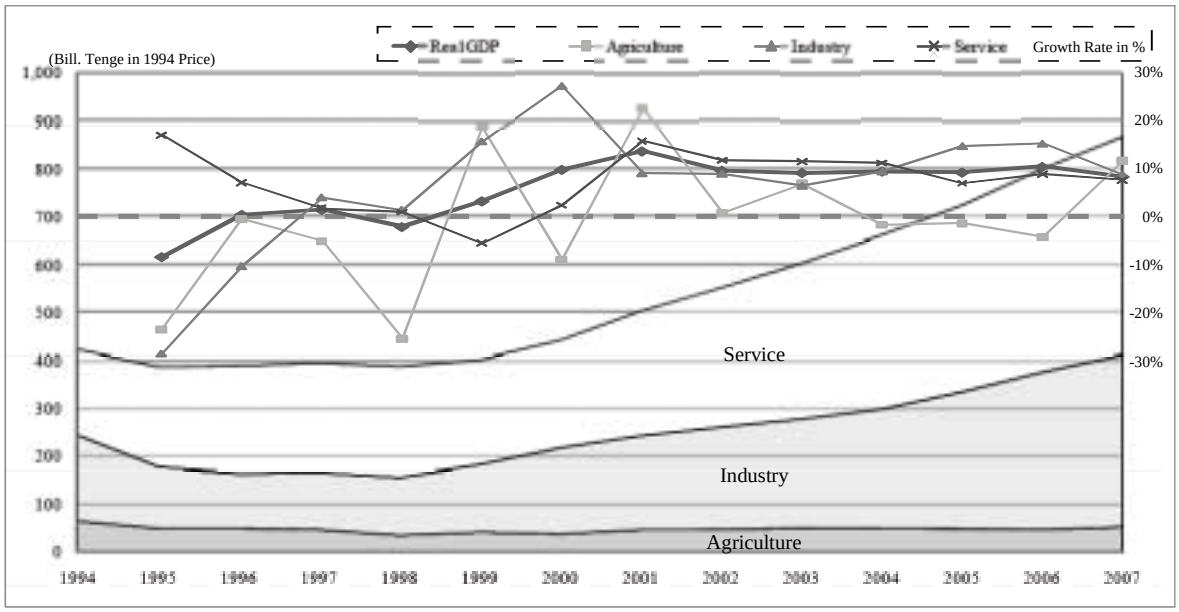
(3) Recent performance

Economic growth and structure

The GDP of Kazakhstan has maintained steady growth of around 10% per annum since 2000. The GDP structure by broad sector in 2004 was 7.1% agriculture, 29.3% industry and 57.4% services. Agriculture had largely stagnated during this period unlike Uzbekistan and Kyrgyz, while services had grown more or less in parallel with the GDP growth (Figure 2.2). The expansion of the industry sector was supported by both the increases in production and prices of hydrocarbon products. The oil production was expanded by 15% per annum during 1999-2004. The oil price increased from US$20/barrel to nearly US$60/barrel in 2005. The price surge and production increase have continued through 2007.

Population and per capita GDP

Following the continuous decline of the population after the independence, the population of Kazakhstan started to increase in 2002. It increased at the modest rate of 0.72% per annum during 2001-06. The per capita GDP increased from US$1,657 in 2002 to US$2,842 in 2006 in 2000 prices at the average annual rate of 14.4% in real terms.



Source: ibid.

Figure 2.2 Real GDP Growth by Sector

2.1.2 Balance of payment and investment

(1) Balance of payment

The balance of payment of Kazakhstan in recent years is summarized in Table 2.1. As shown, the large trade surplus due mainly to hydrocarbon exports are offset mostly by negative balance of services and income (mainly foreign investors' income) for the current account. The capital and financial account is characterized by the large amount of direct investments mainly for hydrocarbon production, and the sizeable loans due mainly to private banks' foreign borrowing, on the one hand, and the external portfolio investments or financial investments outside the Country, on the other. The balance largely represents the reserve assets of the National Bank of Kazakhstan (NBK).

The main portion of the large capital influx in the forms of export revenue, foreign direct investments and private banks' foreign borrowing are hydrocarbon related. This situation increases the risk of over-heated economy, causing hyperinflation and over appreciation of Kazakh tenge (KZT). The Government recognizes it and is trying to manage the situation mainly by budget balancing and setting of appropriate benchmark interest rates by NBK. Consequently, the inflation rates are still increasing slowly to exceed 10% per annum level in 2007, and the exchange rates are only gradually appreciating as shown in Figure 2.3.

(2) Investment performance

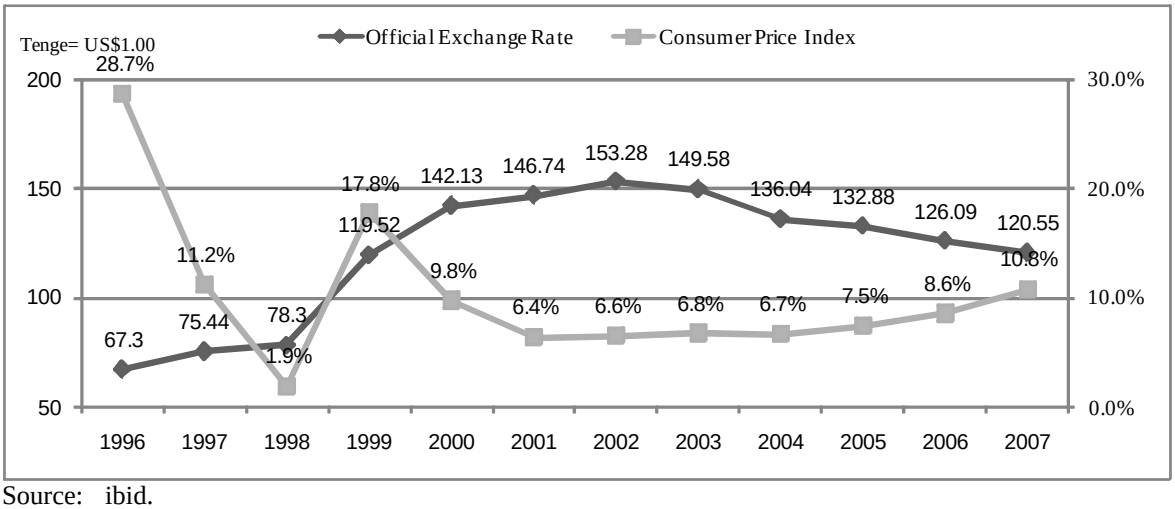
During the initial years after the independence, the amount of investment stagnated. As the policy emphasis shifted to encourage foreign direct investment particularly in the mining and energy sectors, investments started to increase rapidly. As the investment accumulates over time, the investment efficiency has been progressively improved. This process can be seen by a simple analysis.

Table 2.1 Balance of Payments of Kazakhstan, 2002-07

(Unit: US$10^6)

	2000	2001	2002	2003	2004	2005	2006	2007
A. Current Account	**366.3**	**-1,389.5**	**-1,024.3**	**-272.6**	**335.4**	**-1,055.8**	**-1,794.9**	**-6,912.9**
Trade Balance	2,168.4	983.4	1,987.1	3,679.0	6,785.4	10,321.8	14,641.7	15,163.8
Exports	9,288.1	8,927.8	10,026.9	13,232.6	20,603.1	28,300.6	38,762.1	48,336.5
Imports	-7,119.7	-7,944.4	-8,039.8	-9,553.6	-13,817.7	-17,978.8	-24,120.4	-33,172.7
Balance of Services	-797.0	-1,374.4	-1,997.9	-2,040.4	-3,098.7	-5,267.3	-5,912.0	-7,944.3
Exports	1,053.0	1,260.2	1,540.4	1,712.3	2,009.2	2,228.4	2,807.6	3,440.0
Imports	-1,850.0	-2,634.6	-3,538.3	-3,752.7	-5,107.9	-7,495.7	-8,719.6	-11,384.2
Balance of Income	-1,254.1	-1,237.0	-1,127.4	-1,746.6	-2,863.1	-5,696.9	-9,317.2	-11,899.6
Interest on Loans & Credits	-232.2	-197.1	-213.1	-277.5	-413.4	-817.9	-1,693.7	-3,449.4
Direct Investors' Income	-1,045.9	-1,147.2	-1,014.8	-1,448.3	-2,376.4	-4,795.5	-7,822.5	-10,095.0
Interest on Reserves	103.7	163.3	127.7	123.6	140.2	228.2	443.8	731.4
Interest on Intl. National Fund's Assets	30.3	72.6	68.1	118.3	181.8	378.6	715.5	
Others (net)	-79.7	-86.2	-99.8	-212.5	-331.8	-493.5	-623.3	197.9
Current Transfer	249.0	238.5	113.7	-164.7	-488.2	-413.5	-1,207.4	-2,232.9
B. Capital and Financial Account	**1,016.5**	**2,428.7**	**1,239.3**	**2,738.0**	**4,679.5**	**912.0**	**16,123.9**	**7,381.5**
Capital Transfers	-290.5	-185.0	-119.8	-27.8	-21.3	14.0	32.7	-22.6
Migrants' Transfers	-264.2	-197.9	-136.0	-45.5	-25.8	9.5	28.9	3.4
Financial Account	1,307.0	2,613.7	1,359.1	2,765.8	4,700.7	898.0	16,091.2	7,404.1
Direct Investment	1,278.2	2,860.6	2,163.8	2, 213.4	5,436.2	2,117.1	6,625.9	6,130.5
Financing (net utilization)	2,688.8	4,652.7	3,681.8	4,479.6	9,659.4	6,535.3	10,874.0	11,430.7
Repaid	-1,410.7	-1,792.1	-1,518.0	-2,266.2	-4,223.3	-4,418.2	-4,248.1	-5,300.2
Portfolio Investment	-55.0	-1,317.5	-1,246.7	-1,891.0	-417.2	-3,952.7	-4,507.5	-4,639.5
out of which Government Euronotes	10.6	-102.7	-237.1	54.3	21.2	-59.8	0.5	6.9
Financial Derivatives (net)	0.0	0.0	0.0	15.9	-46.4	-112.6	-67.8	-357.4
Other Medium and Long Term Investment	-58.1	463.1	758.0	2,188.3	1,976.5	2,203.8	14,534.8	11,278.7
Trade Credits	-89.5	-59.7	98.3	47.2	16.5	87.8	91.9	-325.3
Guaranteed by the Government	-21.0	-70.1	-26.1	-0.8	91.0	-34.1	-37.0	-53.3
Financing (utilization)	116.8	68.7	151.0	132.4	205.8	117.2	56.3	56.3
Debt Repayment	-137.8	-138.8	-177.1	-133.2	-114.8	-151.3	-93.3	-109.6
Other (net)	-68.5	10.4	124.4	48.0	-74.5	121.9	128.9	-272.0
Loans	31.4	316.1	661.5	1,866.1	1,960.0	2,116.0	14,656.9	11,604.0
Attracted by Government of RK	85.5	54.6	3.4	57.4	-65.7	-827.3	0.7	-60.0
Financing (utilization)	160.8	161.9	120.3	204.2	199.7	109.5	104.1	101.2
Debt Repayment (charged)	-75.3	-107.3	-116.9	-146.9	-265.4	-936.8	-103.4	-161.3
Other (net)	-54.1	261.5	658.1	1,808.7	2,025.7	2,943.3	14,656.3	11,664.0
Other (net)	0.0	206.7	-1.7	275.0	0.0	0.0	-214.0	0.0
Other Short-term Capital	142.0	607.4	-316.1	239.2	-2,248.4	642.5	-494.1	-5,008.2
C. Errors and Omissions	**-797.7**	**-654.5**	**320.2**	**-931.9**	**-1,015.9**	**-1,800.0**	**-3,254.5**	**-3,318.1**
D. Overall Balance	**585.1**	**384.7**	**535.1**	**1,533.5**	**3,999.0**	**-1,943.8**	**11,074.6**	**-2,849.5**
E. Financing	**-585.1**	**-384.7**	**-535.1**	**-1,533.5**	**-3,999.0**	**1,943.8**	**-11,074.6**	**2,849.5**
NBK Reserve Assets	-140.7	-384.7	-535.1	-1,533.5	-3,999.0	1,943.8	-11,074.6	2,849.5
IMF Credit	-444.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: ibid.



Source: ibid.

Figure 2.3 Changes in Exchange Rates of Tenge and Inflation Rates, Kazakhstan

The basic macroeconomic data of Kazakhstan are summarized in Table 2.2. Using the data in the table on the GDP and the fixed capital formation (FCF) in real terms, the incremental capital-to-output ratio (ICOR) may be calculated. For the 10-year period of 1996-2005, the increase in the GDP is KZT 2,946.3 million and the cumulative FCF is 7,928.9 million, both in the 2004 prices. Therefore, the ICOR during this period is calculated to be 2.69.

Table 2.2 GDP and Fixed Capital Formation in Kazakhstan, 1996-2005

	1996	1997	1998	1999	2000	2001
GDP (KZT10[9], current)	1.417,70	1.672,10	1.733,30	2.016,50	2.599,90	3.250,40
Deflator (%)	138.9	116.1	105.7	113.3	117.4	110.1
GDP (KZT10[9], 2004)	3.491,90	3.550,10	3.480,50	3.575,40	3.886,20	4.459,00
Real GDP growth (% p.a.)	0,5	1,6	-1,9	2,7	9,8	14,8
Fixed capital formation (KZT10[9], current)	243,9	271,8	272,2	326,3	450,3	771,4
Fixed capital formation (KZT10[9], 2004)	601,42	577,27	546,95	578,69	680,24	1.058,40
	2002	2003	2004	2005	2006	2007
GDP (KZT10[9], current)	3.776,30	4.612,00	5.870,10	7.590,60	9.738,80	12.726,00
Deflator (%)	105,8	111,7	116,1	117,9	114,9	120,4
GDP (KZT10[9], 2004)	4.897,70	5.356,60	5.870,10	6.438,20	7.189,05	7.802,46
Real GDP growth (% p.a.)	9,8	9,3	9,6	9,7	11,7	8,5
Fixed capital formation (KZT10[9], current)	907,1	1.072,70	1.472,40	1.853,00	3.234,19	2.989,09
Fixed capital formation (KZT10[9], 2004)	1.176,36	1.245,40	1.472,40	1.571,67	2.387,44	1.832,65

Source: ibid.

The same calculation is made for the first and the second halves of the period as follows. The ICOR during 1996-2000 is calculated to be 5.84 based on the increase in GDP of KZT 394.3 million and the cumulative FCF of KZT 2,302.8 million. For the period of 2000-05, the ICOR is calculated to be 2.20 based on the GDP increase of KZT 2,552.0 million and the cumulative FCF of KZT 5,626.1 million. The investment efficiency improved significantly from the first to the second halves of the period. Due to the cumulative effects of the investment during the early years and the increase in the total investment in recent years, the Kazakh economy has attained the annual growth of 10% more or less during the 2000's.

2.2 External Trade Structure and Relationships

2.2.1 External trade development and structure

The external trade turnover of Kazakhstan developed rapidly in recent years, accelerated from the annual average rate of 8.9% in 1995-2000 to 26.7% in 2000-05 and 37.0% in 2006 (Table 2.3). Both the export value and the import value accelerated in the similar way, respectively. The total external trade turnover reached US$61,907 million in 2006, consisting of US$38,244 million export and US$23,633 million import.

Table 2.3 External Trade of Kazakhstan

Unit: US$10[6]

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Trade turnover - total	9056,9	10152,1	10797,8	9648,0	9526,7	13852,2	15085,1	16254,3	21335,4	32877,5	45201,2	61927,2
of which:												
- CIS countries	5536,2	6124,4	5314,1	4161,8	3114,3	5068,4	5954,1	5237,6	6912,8	10215,1	12200,6	16637,5
- Non-CIS countries	3520,7	4027,7	5483,7	5486,2	6412,4	8783,8	9131,0	11016,8	14422,6	22662,4	33000,6	45289,7
Exports - total	5250,2	5911,0	6497,0	5334,1	5871,6	8812,2	8639,1	9670,3	12926,7	20096,2	27849,0	38250,3
of which:												
- CIS countries	2883,5	3178,9	2981,9	2107,8	1510,5	2336,7	2644,6	2194,3	2980,5	4097,2	4066,8	5574,0
- Non-CIS countries	2366,7	2732,1	3515,1	3226,3	4361,1	6475,5	5994,5	7476,0	9946,2	15999,0	23782,3	32676,3
Imports - total	3806,7	4241,1	4300,8	4313,9	3655,1	5040,0	6446,0	6584,0	8408,7	12781,3	17352,2	23676,9
of which:												
- CIS countries	2652,7	2945,5	2332,2	2054,0	1603,8	2731,7	3309,5	3043,2	3932,3	6117,9	8133,9	11063,5
- Non-CIS countries	1154,0	1295,6	1968,6	2259,9	2051,3	2308,3	3136,5	3540,8	4476,4	6663,4	9218,3	12613,4

Source: Agency of Statistics of the Republic of Kazakhstan

Of the total export value, non-CIS countries accounted for a dominant 85.4% share in 2006, but the import value is more balanced between non-CIS countries accounting for 53.3% and CIS countries for 46.7% in the same year. Major export destinations are EU countries (43.5% in 2006) led by Italy and France, non-EU European countries (19.6%), of which Switzerland occupies the dominant share, and Asian countries (20.0%) led by China (Table 2.4). Major import origins are Russia (38.3% in 2006) and other CIS countries, EU countries (26.5%), and Asian countries (18.5%) including China (8.1%) and Japan (3.9%) as shown in Table 2.5.

Table 2.4 Major Export Destinations in Kazakhstan: 2003-2006

	2003		2004		2005		2006	
	US$10^6	(%)	US$10^6	(%)	US$10^6	(%)	US$10^6	(%)
CIS countries	2,980.5	23.1	4,097.2	20.4	4,066.8	14.6	5,570.7	14.6
of which Russian Federation	1,967.9	15.2	2,838.1	14.1	2,927.1	10.5	3,730.0	9.8
of which Azerbaijan	113.5	0.9	287.1	1.4	129.1	0.5	226.4	0.6
EU countries	1,980.5	15.3	6,991.6	34.8	10,999.4	39.5	16,641.3	43.5
of which Italy	1,013.1	7.8	3,109.0	15.5	4,190.5	15.0	6,891.6	18.0
of which France	278.1	2.2	1,468.2	7.3	2,665.1	9.6	3,347.0	8.8
Non-EU countries	2,202.3	17.0	3,987.9	19.8	6,101.4	21.9	7,498.6	19.6
of which Switzerland	1,679.9	13.0	3,759.8	18.7	5,509.5	19.8	6,721.2	17.6
Asia	2,810.4	21.7	3,667.9	18.3	4,887.8	17.6	7,648.5	20.0
of which China	1,653.1	12.8	1,967.3	9.8	2,423.9	8.7	3,592.5	9.4
of which Iran	411.1	3.2	712.0	3.5	886.1	3.2	2,077.6	5.4
America	2,919.5	22.6	1,334.4	6.6	1,767.9	6.3	785.9	2.1
Africa & Others	33.5	0.2	17.2	0.1	25.8	0.1	99.3	0.3
Total	12,926.7	100.0	20,096.2	100.0	27,849.0	100.0	38,244.4	100.0

Sources: *Statistical Yearbook of Kazakhstan 2006* and Global Trade Atlas

Table 2.5 Major Import Origins in Kazakhstan: 2003-2006

	2003		2004		2005		2006	
	US$10^6	(%)	US$10^6	(%)	US$10^6	(%)	US$10^6	(%)
CIS countries	3,932.3	46.8	6,117.9	47.9	8,133.9	46.9	11,052.2	46.7
of which Russian Federation	3,282.1	39.0	4,812.5	37.7	6,591.2	38.0	9,065.7	38.3
of which Azerbaijan	13.7	0.2	16.1	0.1	21.3	0.1	70.8	0.3
EU countries	2,061.3	24.5	3,500.8	27.4	4,287.8	24.7	6,280.9	26.5
Non-EU countries	390.9	4.6	190.9	1.5	335.1	1.9	238.2	1.0
Asia	1,302.5	15.5	2,016.8	15.8	2,883.5	16.6	4,384.8	18.5
of which China	523.7	6.2	758.2	5.9	1,251.8	7.2	1,924.9	8.1
of which Japan	212.0	2.5	398.2	3.1	598.6	3.5	914.1	3.9
of which Iran	12.8	0.2	13.0	0.1	14.8	0.1	21.6	0.1
America	678.6	8.1	885.0	6.9	1,621.1	9.3	1,598.1	6.8
of which USA	470.4	5.6	562.0	4.4	1,204.5	6.9	1,105.8	4.7
Africa & Others	43.1	0.5	69.9	0.6	90.8	0.5	108.8	0.5
Total	8,408.7	100.0	12,781.2	100.0	17,352.2	100.0	23,663.1	100.0

Sources: ibid.

2.2.2 Major trade commodities

The export of Kazakhstan is led by mineral fuels with a dominant 68.7% share of the total import value in 2006 (Table 2.6). Other major export commodities in terms of HS code are copper (6.9%), iron and steel products (6.1%), inorganic chemicals (3.6%), and ores, slug and ash (2.9%). Major import commodities are machinery (18.9% of the total import value in 2006), mineral fuels (12.9%), vehicles (11.3%), electrical machinery (8.5%), and iron and steel products (7.9%).

Figure 2.4 indicates export by country group and by commodity. Mineral fuels are most important export commodities for all the destinations. Iron and steel products, and other metal products are also high on the export commodity lists for many destinations. Cereals are important commodities for CIS countries and Iran, but not for Europe and Asia.

Table 2.6 Major Export and Import Commodities in Kazakhstan: 2006

HS code	Major commodity for export	US$10^6	(%)
27	Mineral fuel	26,279.3	68.7
74	Copper and its articles	2,632.0	6.9
72	Iron and steel product	2,333.6	6.1
28	Inorganic chemicals; rare-earth metals, etc.	1,359.2	3.6
26	Ores, slag and ash	1,112.6	2.9
79	Zinc Articles Thereof	804.4	2.1
71	Precious stones, metals	696.9	1.8
10	Cereals	569.0	1.5
88	Aircraft, spacecraft	268.6	0.7
41	Hides and skins	237.6	0.6
84	Machinery	216.1	0.6
-	Others	1,735.2	4.5
	Total	38,244.4	100.0
HS code	Major commodity for import	US$10^6	(%)
84	Machinery	4,475.3	18.9
27	Mineral fuel	3,051.5	12.9
87	Vehicles (not railway)	2,667.4	11.3
85	Electrical machinery	2,003.9	8.5
73	Iron and steel product	1,867.9	7.9
72	Iron and steel	803.7	3.4
39	Plastic	617.3	2.6
90	Optical, medical instrument	500.7	2.1
30	Pharmaceutical products	494.0	2.1
86	Railway, traffic signals, etc.	453.5	1.9
94	Furniture and bedding	404.6	1.7
-	Others	6,323.3	26.7
	Total	23,663.1	100.0

Source: Global Trade Atlas, JETRO/UN

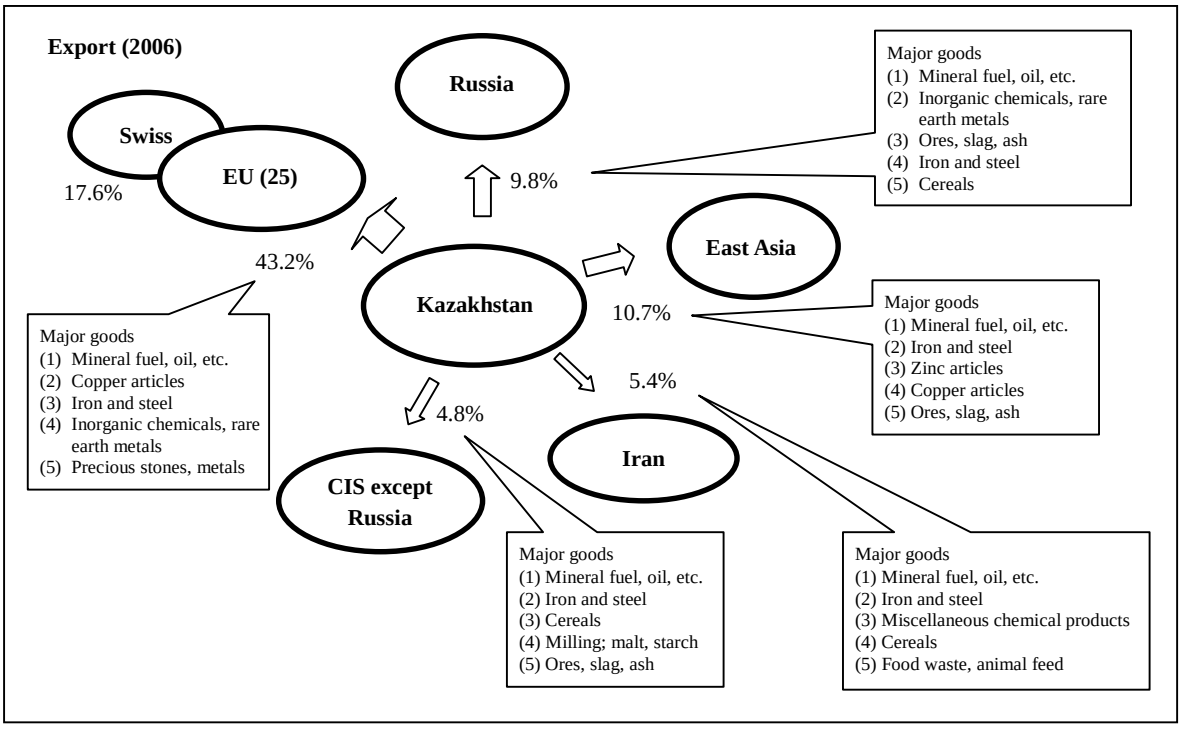


Figure 2.4 Exports by Group of Countries (2006)

Figure 2.5 indicates import by country group and commodity. Mineral fuels are most important import commodities from CIS countries including Russia. Machinery, vehicles and iron and steel products are comparatively more important for import from Europe and Asia. From Iran, Kazakhstan imports ceramic products, machinery, glass and glassware, and edible fruits and nuts, although the volume is small. More detailed trade data by major trade partner are given in Attachment to this section.

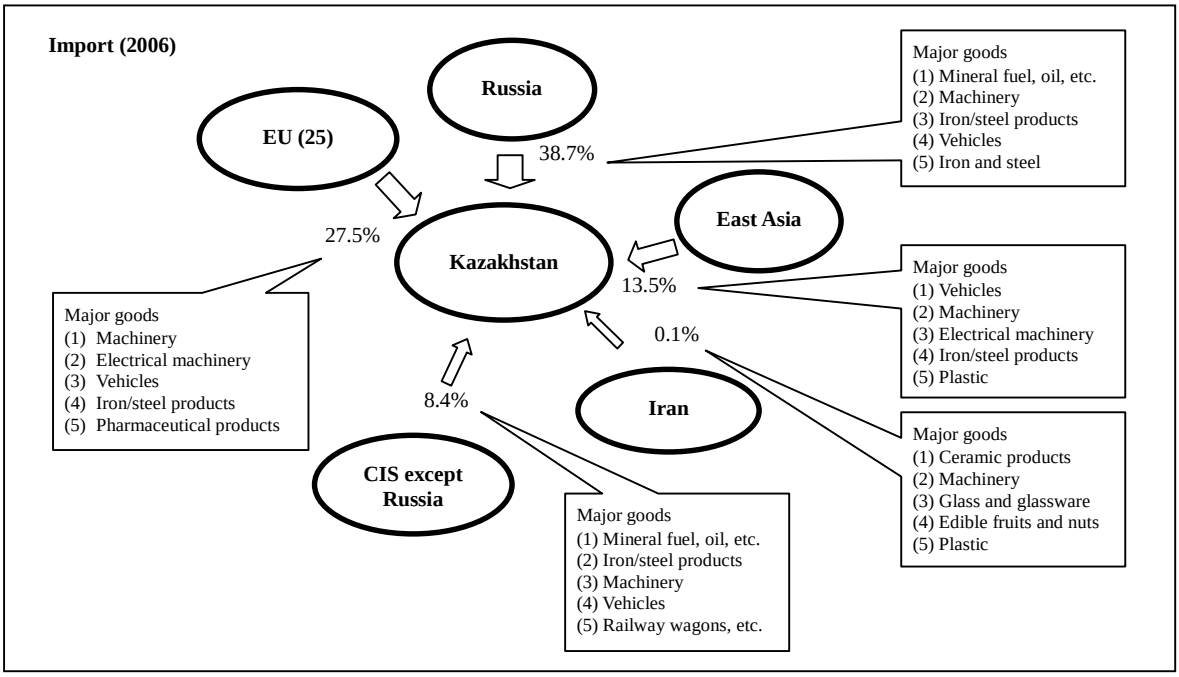


Figure 2.5 Imports by Group of Countries (2006)

Attachment to Section 2.2: Detailed trade data by major trade partner

Table A2.2-1 External Trade with Russian Federation (2003-2006)

(1) Imports from Russian Federation — Unit: US$10^6

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	27	Mineral Fuel, Oil etc.	730.6	22.3	1,341.2	28.6	1,725.9	26.2	2,653.7	29.3	53.7
2	84	Machinery	310.1	9.4	465.9	9.9	646.1	9.8	795.1	8.8	36.9
3	73	Iron/Steel Product	247.9	7.6	313.8	6.7	523.0	7.9	728.3	8.0	43.2
4	87	Vehicles, Not Railway	256.2	7.8	370.9	7.9	487.7	7.4	630.1	7.0	35.0
5	72	Iron and Steel	185.7	5.7	326.3	6.9	502.9	7.6	590.6	6.5	47.1
6	85	Electrical Machinery	138.9	4.2	198.0	4.2	260.5	4.0	373.9	4.1	39.1
7	86	Railway wagons, etc.	142.2	4.3	170.1	3.6	256.7	3.9	235.0	2.6	18.2
8	44	Wood	70.6	2.2	101.0	2.2	158.4	2.4	221.0	2.4	46.3
9	39	Plastic	67.3	2.1	104.5	2.2	145.1	2.2	183.1	2.0	39.6
10	40	Rubber	83.7	2.6	108.2	2.3	129.3	2.0	161.2	1.8	24.4
11	28	Inorganic Chemical, Rare Earth Mt.	192.0	5.9	60.2	1.3	129.4	2.0	148.1	1.6	-8.3
12	89	Ships and Boats	40.6	1.2	7.5	0.2	5.1	0.1	143.0	1.6	52.2
13	48	Paper, paperboard	73.0	2.2	88.8	1.9	115.3	1.7	139.1	1.5	24.0
14	25	Salt, Sulfur, Earth, Stone	23.2	0.7	46.0	1.0	88.0	1.3	136.6	1.5	80.5
15	94	Furniture and Bedding	39.5	1.2	55.9	1.2	82.9	1.3	126.9	1.4	47.6
16	21	Miscellaneous food	19.9	0.6	39.3	0.8	69.6	1.1	109.0	1.2	76.4
17	68	Stone, Plaster, Cement Products	30.3	0.9	52.2	1.1	67.8	1.0	98.1	1.1	47.9
18	90	Optical and Medical Equipment, etc.	38.4	1.2	48.1	1.0	75.4	1.1	95.7	1.1	35.5
19	22	Beverages	21.8	0.7	44.0	0.9	68.8	1.0	95.3	1.1	63.6
20	4	Dairy, Eggs, Honey	36.3	1.1	54.6	1.2	75.8	1.2	91.7	1.0	36.2
		Others	533.7	16.3	700.0	14.9	977.7	14.8	1,309.9	14.4	34.9
		Total	3,282.0	100.0	4,696.4	100.0	6,591.3	100.0	9,065.7	100.0	40.3

(2) Exports to Russian Federation — Unit: US$10^6

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	27	Mineral Fuel, Oil, etc.	859.2	43.7	918.3	33.2	856.4	29.3	1,190.0	31.9	11.5
2	28	Inorganic Chemical, Rare Earth Mt.	249.9	12.7	266.7	9.6	488.3	16.7	703.4	18.9	41.2
3	26	Ores, Slag, Ash	220.3	11.2	570.2	20.6	717.5	24.5	686.5	18.4	46.1
4	72	Iron and Steel	252.1	12.8	322.0	11.6	305.5	10.4	376.8	10.1	14.3
5	10	Cereals	74.5	3.8	242.0	8.7	74.1	2.5	162.6	4.4	29.7
6	84	Machinery	50.2	2.6	80.2	2.9	105.5	3.6	120.0	3.2	33.7
7	52	Cotton Yarn, Fabric	39.9	2.0	47.5	1.7	57.5	2.0	80.8	2.2	26.5
8	7	Vegetables	14.7	0.7	51.9	1.9	29.5	1.0	41.5	1.1	41.3
9	79	Zinc Articles, Thereof	11.4	0.6	19.1	0.7	9.8	0.3	38.0	1.0	49.2
10	25	Salt, Sulfur, Earth, Stone	15.7	0.8	25.1	0.9	24.9	0.9	33.5	0.9	28.7
11	85	Electrical Machinery	13.8	0.7	19.7	0.7	27.2	0.9	30.4	0.8	30.1
12	74	Copper Articles, Thereof	6.5	0.3	7.9	0.3	13.1	0.4	29.5	0.8	65.3
13	78	Lead	21.6	1.1	13.7	0.5	21.1	0.7	28.3	0.8	9.4
14	8	Edible Fruit and Nuts	11.4	0.6	36.4	1.3	23.5	0.8	27.5	0.7	34.2
15	88	Aircraft, Spacecraft	4.8	0.2	4.2	0.2	10.0	0.3	22.0	0.6	65.8
16	73	Iron/Steel Product	8.5	0.4	7.3	0.3	13.5	0.5	16.3	0.4	24.0
17	3	Fish and Seafood	12.1	0.6	11.1	0.4	10.2	0.3	16.0	0.4	9.6
18	40	Rubber	4.1	0.2	6.7	0.2	11.4	0.4	15.4	0.4	54.9
19	17	Sugars	27.8	1.4	29.4	1.1	15.3	0.5	12.7	0.3	-23.0
20	81	Other Base Metals, etc.	2.7	0.1	2.5	0.1	18.5	0.6	11.2	0.3	60.4
		Others	66.3	3.4	86.3	3.1	94.4	3.2	87.6	2.3	9.7
		Total	1,967.8	100.0	2,768.1	100.0	2,927.2	100.0	3,730.0	100.0	23.8

(3) Balance of Commodity Trade with Russian Federation — Unit: US$10^6

		2003		2004		2005		2006		Growth (%)
	Total	-1,314.2	-	-1,928.2	-	-3,664.1	-	-5,335.7	-	59.5

Source: Global Trade Atlas

*: Annual growth 2003-2006

Table A2.2-2 External Trade with CIS except Russia (2003-2006)

(1) Imports from CIS except Russia — Unit: US$10^6

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	27	Mineral Fuel, Oil etc.	125.5	19.3	256.7	19.7	231.3	15.0	282.5	14.2	31.0
2	73	Iron/Steel Product	64.4	9.9	104.0	8.0	208.4	13.5	246.6	12.4	56.5
3	84	Machinery	73.6	11.3	121.8	9.3	184.8	12.0	203.2	10.2	40.3
4	87	Vehicles, Not Railway	48.8	7.5	73.9	5.7	104.4	6.8	143.4	7.2	43.2
5	86	Railway wagons, etc.	46.7	7.2	203.1	15.6	161.8	10.5	139.6	7.0	44.0
6	72	Iron and Steel	26.4	4.1	107.1	8.2	76.8	5.0	121.8	6.1	66.5
7	85	Electrical machinery	26.5	4.1	63.8	4.9	80.8	5.2	105.8	5.3	58.6
8	4	Dairy, Eggs, Honey, etc.	10.1	1.6	17.9	1.4	31.2	2.0	64.5	3.2	85.5
9	52	Cotton, Yarn, Fabric	0.6	0.1	0.6	0.0	27.8	1.8	52.7	2.7	341.6
10	25	Salt, Sulfur, Earth, Stone	6.5	1.0	14.9	1.1	27.3	1.8	51.9	2.6	100.0
11	40	Rubber	12.5	1.9	20.4	1.6	25.7	1.7	43.8	2.2	52.0
12	48	Paper, paperboard	14.3	2.2	23.4	1.8	28.2	1.8	43.1	2.2	44.6
13	39	Plastic	13.3	2.0	22.6	1.7	29.6	1.9	41.6	2.1	46.2
14	94	Furniture and Bedding	9.3	1.4	16.4	1.3	29.7	1.9	37.8	1.9	59.6
15	17	Sugars	20.0	3.1	26.3	2.0	20.5	1.3	35.7	1.8	21.2
16	18	Cocoa	21.1	3.2	29.1	2.2	21.4	1.4	31.7	1.6	14.5
17	70	Glass and Glassware	12.6	1.9	19.4	1.5	19.3	1.2	29.9	1.5	33.4
18	19	Baking Related	11.6	1.8	18.4	1.4	21.4	1.4	26.9	1.4	32.4
19	15	Fats and Oils	10.4	1.6	8.4	0.6	20.2	1.3	26.4	1.3	36.6
20	22	Beverage	8.5	1.3	18.9	1.4	24.2	1.6	25.8	1.3	44.8
		Others	87.6	13.5	138.2	10.6	167.7	10.9	231.8	11.7	38.3
		Total	650.3	100.0	1,305.2	100.0	1,542.6	100.0	1,986.5	100.0	45.1

(2) Exports to CIS except Russia — Unit: US$10^6

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	27	Mineral Fuel, Oil, etc.	368.6	36.4	602.5	48.3	466.0	40.9	732.6	39.8	25.7
2	72	Iron and Steel	63.4	6.3	91.5	7.3	113.4	9.9	176.0	9.6	40.5
3	10	Cereals	298.4	29.5	161.7	13.0	74.4	6.5	159.2	8.7	-18.9
4	11	Milling; Malt; Starch	49.5	4.9	76.2	6.1	124.1	10.9	135.6	7.4	39.9
5	26	Ores, Slag, Ash	31.8	3.1	42.7	3.4	22.3	2.0	91.0	4.9	41.9
6	79	Zinc Articles, Thereof	0.1	0.0	3.2	0.3	26.4	2.3	86.0	4.7	1098.0
7	89	Ships and Boats	3.1	0.3	0.0	0.0	0.1	0.0	74.8	4.1	188.4
8	25	Salt, Sulfur, Earth, Stone	24.9	2.5	31.2	2.5	38.0	3.3	37.4	2.0	14.5
9	17	Sugars	10.8	1.1	21.3	1.7	42.8	3.8	35.6	1.9	49.0
10	71	Precious Stones, Metals	0.0	0.0	0.0	0.0	0.0	0.0	29.4	1.6	1064.6
11	84	Machinery	31.3	3.1	21.9	1.8	25.2	2.2	28.5	1.5	-3.0
12	28	Inorganic Chemicals, Rare Earth Metal	9.4	0.9	21.5	1.7	27.2	2.4	22.7	1.2	34.1
13	24	Tobacco	11.2	1.1	13.7	1.1	19.7	1.7	21.5	1.2	24.4
14	73	Iron/Steel Product	8.9	0.9	12.3	1.0	11.5	1.0	16.8	0.9	23.4
15	20	Preserved food	1.3	0.1	1.9	0.2	2.7	0.2	15.1	0.8	125.1
16	15	Fats and Oils	7.9	0.8	12.5	1.0	10.3	0.9	14.6	0.8	22.6
17	85	Electrical Machinery	17.1	1.7	21.9	1.8	16.1	1.4	13.8	0.7	-7.1
18	52	Cotton, Yarn, Fabric	3.7	0.4	6.1	0.5	3.9	0.3	9.9	0.5	38.9
19	48	Paper, Paperboard	3.3	0.3	3.9	0.3	5.5	0.5	9.6	0.5	42.9
20	68	Stone, Plaster, Cement, etc.	0.7	0.1	2.7	0.2	5.4	0.5	9.6	0.5	143.9
		Others	67.3	6.6	99.5	8.0	104.7	9.2	121.1	6.6	21.7
		Total	1,012.7	100.0	1,248.4	100.0	1,139.6	100.0	1,840.7	100.0	22.0

(3) Balance of Commodity Trade with CIS except Russia — Unit: US$10^6

	2003		2004		2005		2006		Growth* (%)
Total	362.4	-	-56.8	-	-403.0	-	-145.8	-	-173.8

Source: Global Trade Atlas

*: Annual growth 2003-2006

Table A3 External Trade with EU (25 countries) (2003-2006)

(1) Imports from EU (25 countries) Unit: US$10^6

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	84	Machinery	594.5	25.5	1,036.5	29.7	1,235.3	28.8	2,074.4	33.2	51.7
2	85	Electrical Machinery	308.7	13.2	443.7	12.7	649.6	15.1	724.9	11.6	32.9
3	87	Vehicles, Not Railway	184.7	7.9	292.6	8.4	389.6	9.1	680.9	10.9	54.5
4	73	Iron/Steel Product	135.8	5.8	314.3	9.0	368.6	8.6	401.6	6.4	43.5
5	30	Pharmaceutical Products	125.6	5.4	196.7	5.6	279.0	6.5	330.6	5.3	38.1
6	90	Optical and Medical Equipment, etc.	98.7	4.2	109.8	3.1	130.3	3.0	206.6	3.3	27.9
7	39	Plastic	72.8	3.1	99.2	2.8	126.0	2.9	173.1	2.8	33.5
8	48	Paper, Paperboard	70.3	3.0	105.7	3.0	123.4	2.9	149.7	2.4	28.6
9	88	Aircraft, Spacecraft	0.7	0.0	24.3	0.7	1.2	0.0	136.2	2.2	478.7
10	38	Mics. Chemical Product	68.0	2.9	97.9	2.8	106.4	2.5	129.1	2.1	23.8
11	89	Ships and Boats	83.0	3.6	0.9	0.0	1.7	0.0	126.0	2.0	15.0
12	33	Perfumerry, Cosmetic, etc.	55.1	2.4	71.8	2.1	94.6	2.2	114.2	1.8	27.5
13	94	Furniture and Bedding	61.4	2.6	77.2	2.2	83.6	1.9	109.4	1.7	21.2
14	44	Wood	22.2	1.0	41.3	1.2	48.3	1.1	65.1	1.0	43.1
15	27	Mineral Fuel, Oil, etc.	36.9	1.6	24.0	0.7	30.3	0.7	54.8	0.9	14.1
16	40	Rubber	27.5	1.2	34.3	1.0	43.1	1.0	53.1	0.8	24.5
17	32	Tanning, Dye, Paint, Putty	16.6	0.7	25.6	0.7	29.5	0.7	50.3	0.8	44.8
18	76	Aluminum	19.0	0.8	26.4	0.8	28.6	0.7	47.5	0.8	35.7
19	26	Ores, Slag, Ash	3.9	0.2	17.7	0.5	13.6	0.3	40.4	0.6	118.3
20	82	Tool, Cutlery, Of Base Materials	17.5	0.7	20.8	0.6	26.0	0.6	35.4	0.6	26.5
		Others	331.8	14.2	434.3	12.4	480.2	11.2	551.7	8.8	18.5
		Total	2,334.8	100.0	3,494.8	100.0	4,288.9	100.0	6,254.9	100.0	38.9

(2) Exports to EU (25 countries) Unit: US$10^6

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	27	Mineral Fuel, Oil, etc.	1,723.5	70.0	5,359.2	77.0	8,804.2	80.0	12,451.9	75.3	93.3
2	74	Copper Articles, Thereof	203.8	8.3	701.0	10.1	884.2	8.0	2,001.1	12.1	114.1
3	72	Iron and Steel	131.7	5.4	291.6	4.2	530.5	4.8	656.1	4.0	70.8
4	28	Inorganic Chemicals, Rare Earth Metal	64.6	2.6	100.6	1.4	166.4	1.5	350.2	2.1	75.7
5	71	Precious Stones, Metals	94.1	3.8	159.7	2.3	189.2	1.7	296.0	1.8	46.5
6	88	Aircraft, Spacecraft	8.0	0.3	1.6	0.0	10.1	0.1	237.8	1.4	210.3
7	52	Cotton Yarn, Fabric	84.0	3.4	92.3	1.3	104.0	0.9	101.2	0.6	6.4
8	81	Other Base Metals, etc.	30.3	1.2	52.1	0.7	57.4	0.5	69.1	0.4	31.6
9	79	Zinc Articles, Thereof	8.7	0.4	80.7	1.2	35.7	0.3	66.7	0.4	96.8
10	38	Misc. Chemical Product	0.0	0.0	0.0	0.0	4.5	0.0	62.9	0.4	1225.4
11	78	Lead	2.1	0.1	28.4	0.4	37.7	0.3	47.0	0.3	182.6
12	10	Cereals	53.8	2.2	3.8	0.1	35.7	0.3	42.9	0.3	-7.3
13	3	Fish and Seafood	5.5	0.2	18.9	0.3	28.4	0.3	32.3	0.2	80.5
14	41	Hides and Skins	8.0	0.3	8.6	0.1	21.8	0.2	30.6	0.2	56.5
15	84	Machinery	11.4	0.5	17.9	0.3	28.0	0.3	26.5	0.2	32.6
16	76	Aluminum	1.3	0.1	0.8	0.0	3.5	0.0	12.5	0.1	111.7
17	12	Misc. Grain, Seed, Fruit	1.0	0.0	1.2	0.0	1.6	0.0	6.9	0.0	92.9
18	85	Electrical Machinery	8.3	0.3	6.1	0.1	8.4	0.1	6.8	0.0	-6.4
19	90	Optical, Medical Equipment, etc.	4.2	0.2	10.5	0.2	11.0	0.1	6.4	0.0	14.9
20	26	Ores, Slag, Ash	0.0	0.0	0.2	0.0	0.1	0.0	4.5	0.0	2364.7
		Others	17.0	0.7	27.6	0.4	37.1	0.3	22.0	0.1	8.9
		Total	2,461.3	100.0	6,962.8	100.0	10,999.4	100.0	16,531.4	100.0	88.7

(3) Balance of Commodity Trade with EU (25 countries) Unit: US$10^6

		2003		2004		2005		2006		Growth* (%)
	Total	126.6	-	3,467.9	-	6,710.4	-	10,276.6	-	333.0

Source: Global Trade Atlas

*: Annual growth 2003-2006

Table A2.2-4 External Trade with East Asia (China, Japan, South Korea, North Korea and Hong Kong) (2003-2006)

(1) Imports from East Asia — Unit: US$10^6

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	87	Vehicles, Not Railway	176.6	20.8	325.7	23.2	520.3	24.6	965.5	30.1	76.2
2	84	Machinery	141.2	16.6	297.5	21.2	442.1	20.9	645.7	20.1	66.0
3	85	Electrical Machinery	121.6	14.3	184.6	13.1	197.6	9.4	348.4	10.9	42.0
4	73	Iron/Steel Product	57.7	6.8	90.3	6.4	335.6	15.9	251.5	7.8	63.4
5	39	Plastic	34.9	4.1	43.8	3.1	66.9	3.2	133.6	4.2	56.4
6	90	Optical and Medical Equipment, etc.	17.5	2.1	39.3	2.8	56.1	2.7	79.1	2.5	65.3
7	69	Ceramic Product	30.3	3.6	49.8	3.5	47.2	2.2	78.5	2.4	37.3
8	94	Furniture and Bedding	16.6	2.0	19.0	1.3	42.8	2.0	67.1	2.1	59.3
9	76	Aluminum	8.7	1.0	12.6	0.9	15.4	0.7	47.7	1.5	76.3
10	72	Iron and Steel	3.7	0.4	13.5	1.0	15.2	0.7	46.7	1.5	132.5
11	38	Misc. Chemical Product	8.3	1.0	26.6	1.9	26.5	1.3	40.3	1.3	69.5
12	27	Mineral Fuel, Oil, etc.	20.0	2.4	59.2	4.2	52.8	2.5	39.8	1.2	25.7
13	86	Railway Wagons, etc.	0.7	0.1	9.7	0.7	4.3	0.2	34.6	1.1	260.6
14	70	Glass and Glassware	1.4	0.2	6.2	0.4	11.1	0.5	31.6	1.0	180.6
15	49	Book, Newspaper, Manuscript,etc.	0.9	0.1	0.8	0.1	3.7	0.2	27.9	0.9	212.2
16	40	Rubber	5.8	0.7	12.0	0.9	14.4	0.7	26.0	0.8	65.2
17	68	Stone, Plaster, Cement Products	3.3	0.4	16.5	1.2	10.0	0.5	24.1	0.8	93.3
18	82	Tool, Cutlery, Of Base Materials	14.7	1.7	15.9	1.1	11.9	0.6	21.2	0.7	13.1
19	95	Toys and Sports Equipment	9.4	1.1	8.4	0.6	9.7	0.5	20.9	0.7	30.6
20	63	Misc. Textile Articles	30.2	3.5	26.8	1.9	14.2	0.7	20.6	0.6	-12.0
		Others	147.4	17.3	148.5	10.6	215.2	10.2	255.8	8.0	20.2
		Total	850.9	100.0	1,406.8	100.0	2,113.2	100.0	3,206.5	100.0	55.6

(2) Exports to East Asia — Unit: US$10^6

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	27	Mineral Fuel, Oil, etc.	343.1	19.8	539.2	25.3	505.2	18.3	1,464.6	35.7	62.2
2	72	Iron and Steel	485.4	28.1	629.8	29.5	739.7	26.8	599.0	14.6	7.3
3	79	Zinc Articles, Thereof	56.3	3.3	109.2	5.1	225.5	8.2	549.6	13.4	113.7
4	74	Copper Articles, Thereof	525.2	30.4	405.1	19.0	580.0	21.0	525.2	12.8	0.0
5	26	Ores, Slag, Ash	98.1	5.7	110.8	5.2	185.7	6.7	330.7	8.1	49.9
6	28	Inorganic Chemical, Rare Earth Mt.	34.6	2.0	39.3	1.8	109.7	4.0	204.8	5.0	80.8
7	41	Hides and Skins	59.1	3.4	122.8	5.8	221.2	8.0	198.4	4.8	49.8
8	71	Precious Stones, Metals	28.0	1.6	32.7	1.5	43.6	1.6	87.9	2.1	46.3
9	51	Animal Hair, Yarn, Fabric	1.4	0.1	1.7	0.1	23.8	0.9	43.8	1.1	213.7
10	25	Salt, Sulfur, Earth, Stone	8.1	0.5	19.7	0.9	10.6	0.4	23.7	0.6	42.8
11	73	Iron/Steel Product	18.0	1.0	36.4	1.7	25.8	0.9	15.8	0.4	-4.2
12	81	Other Base Metals, etc.	11.9	0.7	9.6	0.4	16.6	0.6	12.5	0.3	1.7
13	52	Cotton, Yarn, Fabric	3.8	0.2	11.2	0.5	8.3	0.3	12.2	0.3	47.8
14	76	Aluminum	23.8	1.4	16.7	0.8	16.9	0.6	11.2	0.3	-22.1
15	84	Machinery	3.6	0.2	7.5	0.4	7.7	0.3	6.4	0.2	21.2
16	4	Dairy, Eggs, Honey, etc.	0.8	0.0	0.1	0.0	7.9	0.3	5.0	0.1	82.1
17	31	Fertilizers	13.4	0.8	28.4	1.3	22.4	0.8	3.8	0.1	-34.2
18	14	Other Vegetables	3.6	0.2	3.7	0.2	3.5	0.1	3.5	0.1	-1.2
19	78	Lead	0.5	0.0	0.3	0.0	1.2	0.0	2.3	0.1	64.9
20	5	Other of Animal Origin	0.7	0.0	0.4	0.0	0.8	0.0	0.7	0.0	1.7
		Others	10.4	0.6	9.5	0.4	8.8	0.3	3.3	0.1	-31.9
		Total	1,729.9	100.0	2,134.0	100.0	2,765.1	100.0	4,104.4	100.0	33.4

(3) Balance of Commodity Trade with East Asia — Unit: US$10^6

	2003		2004		2005		2006		Growth* (%)
Total	879.0	-	727.2	-	651.9	-	897.9	-	0.7

Source: Global Trade Atlas

*: Annual growth 2003-2006

Table A2.2-5 External Trade with Iran (2003-2006)

(1) Imports from Iran — Unit: US$1,000

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	69	Ceramic Products	690	5.4	1,050	8.1	1,273	8.6	3,600	16.7	73.4
2	84	Machinery	2,206	17.2	1,651	12.7	2,198	14.9	2,549	11.8	4.9
3	70	Glass and Glassware	237	1.9	252	1.9	482	3.3	1,422	6.6	81.7
4	8	Edible Fruits and Nuts	803	6.3	1,053	8.1	813	5.5	1,206	5.6	14.5
5	39	Plastic	635	5.0	810	6.2	889	6.0	1,134	5.2	21.3
6	73	Iron/Steel Products	101	0.8	139	1.1	302	2.0	1,117	5.2	122.8
7	34	Soap, Wax, Dental Preparation, etc.	1,182	9.2	1,019	7.8	1,094	7.4	1,023	4.7	-4.7
8	7	Vegetables	165	1.3	173	1.3	259	1.8	1,019	4.7	83.5
9	28	Inorganic Chemical, Rare Earth Mt.	334	2.6	493	3.8	767	5.2	827	3.8	35.4
10	35	Albumins, Modified Starch, Glue, etc.	336	2.6	363	2.8	446	3.0	820	3.8	34.7
11	15	Fats and Oils	1,093	8.5	727	5.6	1,074	7.3	787	3.6	-10.4
12	25	Salt, Sulfur, Earth, Stone	105	0.8	124	1.0	139	0.9	758	3.5	93.3
13	85	Electrical Machinery	218	1.7	391	3.0	698	4.7	726	3.4	49.3
14	32	Tanning, Dye, Paint, Putty	262	2.0	268	2.1	339	2.3	609	2.8	32.4
15	29	Organic Chemicals	186	1.5	3	0.0	45	0.3	526	2.4	41.3
16	20	Preserved Food	815	6.4	249	1.9	241	1.6	447	2.1	-18.2
17	94	Furniture and Bedding	245	1.9	452	3.5	365	2.5	352	1.6	12.8
18	87	Vehicles, Not Railway	1,497	11.7	285	2.2	828	5.6	301	1.4	-41.4
19	40	Rubber	68	0.5	135	1.0	207	1.4	287	1.3	61.8
20	83	Miscellaneous Articles of Base Metal	182	1.4	534	4.1	355	2.4	253	1.2	11.5
		Others	1,442	11.3	2,817	21.7	1,977	13.4	1,855	8.6	8.8
		Total	12,802	100.0	12,987	100.0	14,791	100.0	21,618	100.0	19.1

(2) Exports to Iran — Unit: US$1,000

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	27	Mineral Fuel, Oil, etc.	137,775	33.5	373,426	52.4	597,036	67.4	1,650,417	79.4	128.8
2	72	Iron and Steel	238,163	57.9	306,879	43.1	264,237	29.8	322,078	15.5	10.6
3	38	Miscellaneous Chemical Products	0	0.0	0	0.0	0	0.0	58,956	2.8	-
4	10	Cereals	12,883	3.1	2,597	0.4	8,246	0.9	21,617	1.0	18.8
5	23	Food Waste, Animal Feed	149	0.0	3,002	0.4	6,708	0.8	10,878	0.5	317.9
6	28	Inorganic Chemical, Rare Earth Mt.	1,578	0.4	3,567	0.5	2,213	0.2	3,247	0.2	27.2
7	79	Zinc Articles Thereof	6,047	1.5	0	0.0	262	0.0	2,685	0.1	-23.7
8	25	Salt, Sulfur, Earth, Stone	346	0.1	1,062	0.1	736	0.1	2,396	0.1	90.6
9	21	Miscellaneous Food	0	0.0	0	0.0	405	0.0	1,794	0.1	-
10	73	Iron/Steel Products	254	0.1	1,326	0.2	1,655	0.2	1,517	0.1	81.3
11	84	Machinery	1,630	0.4	557	0.1	775	0.1	657	0.0	-26.1
12	12	Miscellaneous Grain, Seed, Fruit	1,463	0.4	1,927	0.3	2,377	0.3	505	0.0	-29.9
13	76	Aluminum	462	0.1	801	0.1	1,050	0.1	407	0.0	-4.2
14	74	Copper Articles Thereof	0	0.0	17	0.0	9	0.0	239	0.0	742.5
15	85	Electrical Machinery	21	0.0	67	0.0	14	0.0	105	0.0	72.4
16	5	Other of Animal Origin	78	0.0	120	0.0	84	0.0	33	0.0	-24.9
17	87	Vehicles, Not Railway	112	0.0	38	0.0	98	0.0	26	0.0	-38.6
18	82	Tool, Cutlery, etc.	1	0.0	5	0.0	5	0.0	21	0.0	176.8
19	34	Soap, Wax, Dental Preparation, etc.	0	0.0	0	0.0	0	0.0	5	0.0	-
20	48	Paper, Paperboard	0	0.0	0	0.0	0	0.0	4	0.0	-
		Others	10,166	2.5	16,621	2.3	209	0.0	10	0.0	-90.1
		Total	411,128	100.0	712,011	100.0	886,118	100.0	2,077,597	100.0	71.6

(3) Balance of Commodity Trade with Iran — Unit: US$1,000

	2003		2004		2005		2006		Growth* (%)
Total	398,326	-	699,024	-	871,327	-	2,055,979	-	72.8

Source: Global Trade Atlas

*: Annual growth 2003-2006

Table A2.2-6 External Trade with Azerbaijan (2003-2006)

(1) Imports from Azerbaijan — Unit: US$1,000

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	27	Mineral Fuel, Oil, etc.	4,683	34.2	2,841	17.6	7,198	33.8	14,368	20.3	45.3
2	89	Ships and Boats	723	5.3	2	0.0	0	0.0	14,360	20.3	170.8
3	84	Machinery	2,385	17.4	2,233	13.9	4,829	22.7	12,641	17.9	74.4
4	73	Iron/Steel Products	289	2.1	560	3.5	668	3.1	12,264	17.3	249.0
5	90	Optical and Medical Equipment, etc.	1,182	8.6	1,267	7.9	1,623	7.6	7,104	10.0	81.8
6	86	Railway, Traffic Signals, etc.	708	5.2	1,961	12.2	154	0.7	2,274	3.2	47.6
7	85	Electrical Machinery	556	4.1	653	4.1	689	3.2	1,930	2.7	51.4
8	94	Furniture and Bedding	521	3.8	697	4.3	1,140	5.4	1,899	2.7	53.9
9	39	Plastic	867	6.3	1,524	9.5	652	3.1	785	1.1	-3.3
10	87	Vehicles, Not Railway	787	5.7	2,683	16.7	1,854	8.7	563	0.8	-10.6
11	20	Preserved Food	101	0.7	209	1.3	244	1.1	464	0.7	66.5
12	18	Cocoa	12	0.1	126	0.8	257	1.2	422	0.6	229.5
13	68	Stone, Plaster, Cement Products	52	0.4	41	0.3	217	1.0	345	0.5	87.5
14	44	Wood	19	0.1	10	0.1	3	0.0	260	0.4	140.0
15	19	Baking Related	0	0.0	0	0.0	4	0.0	222	0.3	-
16	74	Copper Articles Thereof	1	0.0	0	0.0	0	0.0	192	0.3	428.6
17	82	Tool, Cutlery, etc.	22	0.2	20	0.1	3	0.0	139	0.2	85.4
18	32	Tanning, Dye, Paint, Putty	103	0.8	216	1.3	152	0.7	128	0.2	7.4
19	17	Sugars	10	0.1	16	0.1	17	0.1	73	0.1	94.5
20	49	Book, Newspaper, Manuscript, etc.	0	0.0	1	0.0	44	0.2	54	0.1	545.1
		Others	667	4.9	1,046	6.5	1,545	7.3	323	0.5	-21.4
		Total	13,687	100.0	16,105	100.0	21,292	100.0	70,810	100.0	73.0

(2) Exports to Azerbaijan — Unit: US$1,000

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	89	Ships and Boats	3,118	2.8	90	0.0	88	0.1	74,799	33.0	188.4
2	10	Cereals	66,413	59.0	64,998	22.6	17,282	13.4	59,119	26.1	-3.8
3	27	Mineral Fuels, Oils, etc.	20,177	17.9	195,437	68.1	77,600	60.1	54,034	23.9	38.9
4	72	Iron and Steel	4,451	4.0	6,844	2.4	13,733	10.6	24,068	10.6	75.5
5	73	Iron/Steel Products	130	0.1	1,180	0.4	3,192	2.5	4,096	1.8	215.9
6	84	Machinery	7,948	7.1	2,287	0.8	4,872	3.8	3,022	1.3	-27.6
7	90	Optical and Medical Equipment, etc.	2,693	2.4	7,082	2.5	4,485	3.5	2,319	1.0	-4.9
8	25	Salt, Sulfur, Earth, Stone	2,139	1.9	1,548	0.5	1,276	1.0	1,383	0.6	-13.5
9	39	Plastic	113	0.1	586	0.2	1,349	1.0	1,210	0.5	120.3
10	85	Electrical Machinery	942	0.8	435	0.2	2,127	1.6	921	0.4	-0.8
11	82	Tool, Cutlery, etc.	88	0.1	92	0.0	544	0.4	266	0.1	44.5
12	19	Baking Related	0	0.0	0	0.0	287	0.2	217	0.1	-
13	48	Paper, Paperboard	1	0.0	2	0.0	54	0.0	200	0.1	529.9
14	87	Vehicles, Not Railway	2,004	1.8	941	0.3	101	0.1	158	0.1	-57.1
15	3	Fish and Seafood	202	0.2	431	0.2	321	0.2	147	0.1	-10.0
16	38	Miscellaneous Chemical Products	90	0.1	25	0.0	21	0.0	102	0.0	4.0
17	28	Inorganic Chemical, Rare Earth Mt.	75	0.1	249	0.1	179	0.1	101	0.0	10.4
18	40	Rubber	58	0.1	21	0.0	18	0.0	87	0.0	14.4
19	12	Miscellaneous Grain, Seed, Fruit	0	0.0	14	0.0	0	0.0	46	0.0	-
20	22	Beverages	0	0.0	0	0.0	28	0.0	33	0.0	-
		Others	1,907	1.7	4,863	1.7	1,510	1.2	60	0.0	-68.5
		Total	112,548	100.0	287,125	100.0	129,067	100.0	226,386	100.0	26.2

(3) Balance of Commodity Trade with Azerbaijan — Unit: US$1,000

	2003		2004		2005		2006		Growth* (%)
Total	98,861	-	271,020	-	107,775	-	155,576	-	16.3

Source: Global Trade Atlas

*: Annual growth 2003-2006

Table A2.2-7 External Trade with Uzbekistan (2003-2006)

(1) Imports from Uzbekistan — Unit: US$1,000

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	27	Mineral Fuel, Oil, etc.	57,997	64.6	137,965	60.6	142,763	56.1	129,452	40.6	30.7
2	72	Iron and Steel	8,488	9.5	35,861	15.8	32,226	12.7	44,283	13.9	73.4
3	52	Cotton, Yarn, Fabric	30	0.0	57	0.0	12,448	4.9	28,250	8.9	880.2
4	25	Salt, Sulfur, Earth, Stone	429	0.5	2,299	1.0	11,620	4.6	25,876	8.1	292.2
5	87	Vehicles, Not Railway	1,303	1.5	5,785	2.5	11,333	4.5	24,272	7.6	165.1
6	70	Glass and Glassware	2,016	2.2	3,061	1.3	3,947	1.6	14,669	4.6	93.8
7	85	Electrical Machinery	2,891	3.2	6,464	2.8	5,511	2.2	10,182	3.2	52.1
8	39	Plastic	2,737	3.1	5,150	2.3	5,813	2.3	6,486	2.0	33.3
9	15	Fats and Oils	0	0.0	13	0.0	3,484	1.4	6,000	1.9	-
10	28	Inorganic Chemical, Rare Earth Mt.	1,599	1.8	3,184	1.4	4,380	1.7	5,836	1.8	54.0
11	31	Fertilizers	756	0.8	2,789	1.2	4,644	1.8	4,743	1.5	84.4
12	69	Ceramic Products	547	0.6	5,936	2.6	2,580	1.0	4,040	1.3	94.7
13	84	Machinery	3,458	3.9	3,458	1.5	3,592	1.4	3,825	1.2	3.4
14	20	Preserved Food	1,389	1.5	3,355	1.5	3,135	1.2	3,440	1.1	35.3
15	68	Stone, Plaster, Cement Products	320	0.4	391	0.2	513	0.2	1,126	0.4	52.1
16	29	Organic Chemicals	293	0.3	616	0.3	821	0.3	861	0.3	43.2
17	12	Miscellaneous Grain, Seed, Fruit	116	0.1	158	0.1	88	0.0	842	0.3	93.6
18	94	Furniture and Bedding	89	0.1	46	0.0	93	0.0	731	0.2	101.8
19	30	Pharmaceutical Products	1,226	1.4	455	0.2	398	0.2	556	0.2	-23.2
20	86	Railway, Traffic Signals, etc.	79	0.1	2,900	1.3	1,567	0.6	428	0.1	75.6
		Others	3,951	4.4	7,659	3.4	3,500	1.4	3,192	1.0	-6.9
		Total	89,714	100.0	227,602	100.0	254,456	100.0	319,090	100.0	52.6

(2) Exports to Uzbekistan — Unit: US$1,000

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	27	Mineral Fuel, Oil, etc.	36,444	26.4	50,678	25.1	78,460	32.3	128,853	33.5	52.3
2	26	Ores, Slag, Ash	28,275	20.5	36,245	18.0	14,509	6.0	86,245	22.4	45.0
3	11	Milling, Malt, Starch	24,237	17.6	31,778	15.8	66,752	27.5	72,468	18.8	44.1
4	72	Iron and Steel	23,744	17.2	35,578	17.6	24,636	10.2	32,674	8.5	11.2
5	10	Cereals	942	0.7	417	0.2	8,853	3.6	14,887	3.9	150.9
6	25	Salt, Sulfur, Earth, Stone	6,916	5.0	12,557	6.2	8,999	3.7	9,986	2.6	13.0
7	84	Machinery	3,595	2.6	2,743	1.4	2,623	1.1	4,237	1.1	5.6
8	28	Inorganic Chemical, Rare Earth Mt.	2,352	1.7	2,386	1.2	4,961	2.0	4,155	1.1	20.9
9	15	Fats and Oils	1,399	1.0	2,470	1.2	1,615	0.7	3,242	0.8	32.3
10	39	Plastic	327	0.2	2,015	1.0	1,205	0.5	2,943	0.8	108.0
11	73	Iron/Steel Products	1,234	0.9	4,213	2.1	1,687	0.7	2,753	0.7	30.7
12	40	Rubber	318	0.2	456	0.2	160	0.1	2,740	0.7	105.0
13	30	Pharmaceutical Products	385	0.3	1,029	0.5	1,558	0.6	2,360	0.6	83.0
14	68	Stone, Plaster, Cement Products	393	0.3	391	0.2	923	0.4	2,138	0.6	75.9
15	17	Sugars	642	0.5	3,330	1.7	16,353	6.7	2,000	0.5	46.0
16	85	Electrical Machinery	786	0.6	1,186	0.6	2,499	1.0	1,990	0.5	36.3
17	48	Paper, Paperboard	318	0.2	281	0.1	477	0.2	1,794	0.5	78.0
18	86	Railway, Traffic Signals, etc.	0	0.0	174	0.1	100	0.0	1,433	0.4	-
19	23	Food Waste, Animal Feed	19	0.0	325	0.2	465	0.2	1,038	0.3	279.4
20	78	Lead	601	0.4	1,152	0.6	936	0.4	993	0.3	18.2
		Others	4,960	3.6	12,270	6.1	4,825	2.0	5,654	1.5	4.5
		Total	137,887	100.0	201,674	100.0	242,596	100.0	384,583	100.0	40.8

(3) Balance of Commodity Trade with Uzbekistan — Unit: US$1,000

	2003		2004		2005		2006		Growth* (%)
Total	48,173	-	-25,928	-	-11,860	-	65,493	-	10.8

Source: Global Trade Atlas

*: Annual growth 2003-2006

Table A2.2-8 External Trade with Turkmenistan (2003-2006)

(1) Imports from Turkmenistan — Unit: US$1,000

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	27	Mineral Fuel, Oil, etc.	47,352	96.5	74,217	98.2	46,676	92.0	109,542	82.6	32.3
2	84	Machinery	319	0.6	29	0.0	261	0.5	12,380	9.3	238.6
3	89	Ships and Boats	0	0.0	0	0.0	0	0.0	3,373	2.5	-
4	39	Plastic	0	0.0	374	0.5	403	0.8	1,890	1.4	-
5	52	Cotton, Yarn, Fabric	328	0.7	55	0.1	1,992	3.9	1,296	1.0	58.1
6	28	Inorganic Chemical, Rare Earth Mt.	0	0.0	10	0.0	699	1.4	1,226	0.9	-
7	90	Optical and Medical Equipment, etc.	231	0.5	0	0.0	37	0.1	970	0.7	61.3
8	25	Salt, Sulfur, Earth, Stone	20	0.0	451	0.6	270	0.5	699	0.5	227.0
9	38	Miscellaneous Chemical Products	224	0.5	75	0.1	112	0.2	344	0.3	15.4
10	73	Iron/Steel Products	354	0.7	0	0.0	58	0.1	213	0.2	-15.6
11	56	Wadding, Felt, Twine, Rope	0	0.0	0	0.0	0	0.0	154	0.1	-
12	41	Hides and Skins	0	0.0	112	0.1	0	0.0	137	0.1	-
13	63	Miscellaneous Textile Articles	0	0.0	0	0.0	0	0.0	89	0.1	-
14	87	Vehicles, Not Railway	26	0.1	111	0.1	0	0.0	80	0.1	44.7
15	82	Tool, Cutlery, etc.	0	0.0	0	0.0	9	0.0	75	0.1	-
16	86	Railway, Traffic Signals, etc.	10	0.0	0	0.0	2	0.0	37	0.0	54.7
17	94	Furniture and Bedding	34	0.1	0	0.0	0	0.0	36	0.0	1.9
18	85	Electrical Machinery	0	0.0	0	0.0	136	0.3	32	0.0	-
19	13	Lac, Vegetable Sap, Extracted, etc.	0	0.0	0	0.0	9	0.0	13	0.0	-
20	7	Vegetables	25	0.1	73	0.1	5	0.0	0	0.0	-100.0
		Others	161	0.3	51	0.1	63	0.1	24	0.0	-47.0
		Total	49,084	100.0	75,558	100.0	50,732	100.0	132,610	100.0	39.3

(2) Exports to Turkmenistan — Unit: US$1,000

Rank	HC	Commodity Description	2003	(%)	2004	(%)	2005	(%)	2006	(%)	Growth* (%)
1	84	Machinery	12,889	34.7	1,939	7.4	1,241	7.2	5,288	25.6	-25.7
2	25	Salt, Sulfur, Earth, Stone	962	2.6	1,302	5.0	3,841	22.2	3,319	16.0	51.1
3	24	Tobacco	727	2.0	1,735	6.6	3,020	17.4	3,258	15.7	64.9
4	11	Milling, Malt, Starch	1,311	3.5	242	0.9	737	4.3	3,134	15.1	33.7
5	73	Iron./Steel Products	4,872	13.1	2,225	8.5	1,179	6.8	1,126	5.4	-38.6
6	28	Inorganic Chemicals, Rare Earth Mt.	248	0.7	264	1.0	681	3.9	935	4.5	55.6
7	90	Optical and Medical Equipment, etc.	419	1.1	1,364	5.2	504	2.9	568	2.7	10.7
8	87	Vehicles excluding Railway	1,553	4.2	2,096	8.0	825	4.8	567	2.7	-28.5
9	85	Electrical Machinery	9,601	25.8	11,090	42.5	3,289	19.0	399	1.9	-65.4
10	19	Baking Related	0	0.0	103	0.4	311	1.8	315	1.5	-
11	10	Cereals	1,332	3.6	78	0.3	2	0.0	298	1.4	-39.3
12	86	Railway, Traffic Signals, etc.	21	0.1	305	1.2	19	0.1	281	1.4	137.4
13	88	Aircraft, Spacecraft	465	1.3	527	2.0	66	0.4	199	1.0	-24.6
14	21	Miscellaneous Food	514	1.4	169	0.6	319	1.8	189	0.9	-28.4
15	38	Miscellaneous Chemical Products	73	0.2	63	0.2	127	0.7	150	0.7	27.2
16	39	Plastic	99	0.3	399	1.5	262	1.5	130	0.6	9.5
17	18	Cocoa	39	0.1	200	0.8	175	1.0	97	0.5	36.1
18	30	Pharmaceutical Products	37	0.1	92	0.4	0	0.0	87	0.4	33.1
19	72	Iron and Steel	76	0.2	96	0.4	10	0.1	87	0.4	4.8
20	48	Paper, Paperboard	36	0.1	9	0.0	2	0.0	69	0.3	24.0
		Others	1,896	5.1	1,793	6.9	722	4.2	193	0.9	-53.3
		Total	37,169	100.0	26,092	100.0	17,332	100.0	20,689	100.0	-17.7

(3) Balance of Commodity Trade with Turkmenistan — Unit: US$1,000

	2003		2004		2005		2006		Growth* (%)
Total	-11,915	-	-49,466	-	-33,400	-	-111,921	-	111.0

Source: Global Trade Atlas

*: Annual growth 2003-2006

2.3 Position and Characteristics of Kazakhstan's Socio-economy

2.3.1 Position of Kazakhstan's socio-economy

(1) Position in CIS countries

Kazakhstan has the third largest GDP, ranked in the 55th place in the world, following Russia (9th) and Ukraine (29th). The per capita GDP of Kazakhstan, ranked at the 88th in the world, is the second highest next only to Russia (81st). Both Kazakhstan and Russia are blessed with abundant hydrocarbon resources, while Ukraine imports them. Kazakhstan ranks in the middle among the CIS countries for inflation rates. The ratio of gross investment to the GDP is the second highest in Kazakhstan among CIS countries, next only to Azerbaijan. The ratio of 27% in 2006 is high even by international standard and ranked 30th in the world.

CIS countries rank low in some social indices. Life expectancy at birth is low, ranked well below 100th in the world, except Georgia ranked at the 64th with 76.3 years in 2007. Kazakhstan is at lower middle level among them with 67.2 years in 2006. In terms of infant mortality rate, Kazakhstan ranks at the fifth from the bottom among CIS countries and at the 135th in the world, with 27.4 per 1,000 live births.

Kazakhstan is rather behind in the information and telecommunications drive in the world and even among CIS countries. The number of Internet users per population in Kazakhstan is the third lowest of CIS countries, following Azerbaijan and Russia, and ranked at the 169th in the world. Kazakhstan ranks at the 119th in the population per telephone line and 115th in the population per mobile phone in the world, although it is ranked in the upper middle among CIS countries by these indices. Detailed data are given in Attachment to this section (Table A2.3-1).

(2) Comparison with newly accepted EU countries

All the eight new member countries of EU have ranks higher than any CIS country in the per capita GDP. The lowest ranked Poland had US$14,300 in 2007 in terms of purchasing power parity (PPP), higher than the highest ranked Russia of CIS countries having US$12,200. All the new EU countries surpass Kazakhstan in the life expectancy at birth and the infant mortality rate. The latter is smaller than 10 per 1,000 live births in all the new EU countries, while it was 27.4 per 1,000 live births in Kazakhstan in 2007. All the new EU countries have much better equipped with information and communication facilities as well. In particular, the number of Internet users per 1,000 population was 275-543 in the new EU countries, while it was only 26 users per 1,000 population in Kazakhstan. Detailed data are given in Attachment to this section (Table A2.3-2).

(3) Comparison with countries at similar GDP and income levels

A total of 11 countries are selected having the GDP similar to Kazakhstan, ranked in 49th through 60th in the world by this index. They include oil exporters of Venezuela, U.A.E. and Sudan. Kazakhstan is close to the top in terms of the ratio of gross investment to the GDP, trailing only slightly by Ireland with 28.0% and Israel with 27.6% in 2006. In terms of life expectancy at birth, Kazakhstan is the second lowest, next to Sudan ranked at the 199th in the world. Kazakhstan ranked the third lowest in the infant mortality rate, following Sudan (203rd) and Morocco (150th). Kazakhstan is far behind other countries in this category in the preparedness for the information and communication age, except Sudan.

In terms of per capita GDP, 11 countries are selected with ranks between 81st and 92nd, including Russia. They include emerging economies or those becoming economically advanced countries

such as Bulgaria, Mexico, Thailand, Turkey, Romania and Russia. Kazakhstan has the second highest ratio of gross investment to the GDP, next to Thailand. In terms of the two social indices, Kazakhstan ranks lower than most countries, except Botswana and Russia for the life expectancy at birth, and Botswana and Turkey in terms of the infant mortality rate. Kazakhstan ranks lower than all the countries in this category for the number of Internet users per population. Detailed data are given in Attachment to this section (Table A.2.3-3 and A2.3-4).

2.3.2 Characteristics of Kazakhstan's socio-economy

(1) Macro economy

The Kazakhstan's economy realized respectable growth in recent years to attain the per capita GDP close to US$10,000 in terms of purchasing power parity, ranked at the 88th in the world. The GDP itself ranks at the 55th out of over 200 countries and economies in the world. This growth has been supported largely by the increase in the production of oil, gas and other mineral resources and the escalating prices of hydrocarbon resources.

The promotion policy for foreign direct investment (FDI) especially in the mining and energy sectors led to the large influx of external fund into Kazakhstan. The influx includes not only foreign direct investments into these sectors but also revenues from hydrocarbon exports and related private banks' foreign borrowings. Consequently, the total foreign direct investment corresponds to 27% of the GDP more or less in recent years, quite high by international standard, and in fact ranked at the 30th in the world.

The external trade of Kazakhstan has developed rapidly in recent years again supported mainly by the export of oil, gas and other mineral resources and the import of machinery and materials to support these export activities. Export commodities are dominated by resources with low levels of processing, both mineral resources and grains. Export destinations, however, are reasonably well diversified. Excluding mineral fuels, the largest trade partner of Russia has a 23.5% share in the total export value in 2006, while EU with 25 countries has a combined share of 37.8%, and Asian countries 24.5%.

Import destinations are less diversified with Russia having a dominant share of around 38% in 2003-06. Import commodities are mainly machinery, vehicles, electrical equipment, transport equipment, and optical and medical instruments necessary for high value manufacturing and services activities. This indicates the weakness of the industrial structure of Kazakhstan.

(2) Economic sectors

Kazakhstan is one of the main grain producers in the world and the only crop exporting country in the CIS. Agricultural production in Kazakhstan, however, decreased drastically after the independence, and has not fully recovered yet. Livestock is comparatively more important in the agricultural sector as the Kazakh society is originally nomadic. It also suffered from the post independence turmoil.

The dominance of oil and gas industries constrains the development of more balanced industrial structure in Kazakhstan. The division of works established during the Soviet era still affects the production and distribution patterns among the CIS countries, resulting in the lack of effective industrial linkages within the Country. Due to the privatization of state enterprises and the promotion of FDIs, the number of large enterprises has decreased and small enterprises have increased. Deliberate policies to support the small enterprise development have just started to be taken by the Government.

The development of demand-driven services is constrained by the stagnant agriculture and non-diversified industries. Also, the large enterprises, especially those remaining state enterprises, tend to undertake all the related services by themselves or through their affiliated entities, thus limiting the opportunities for small indigenous service industries to develop. Resource-based services such as those related to tourism have not developed much despite the large potentials. Even these services tend to be constrained by the large state enterprises undertaking them within their affiliated groups, respectively.

(3) Social and other aspects

Kazakhstan is ranked rather low by some social indices as seen above. Especially, health conditions appear to be less than adequate for the Kazakh people. This situation may reflect partly the lifestyle of originally nomadic people with their culture and value, which may not be amenable to a monetary or economic value. Still, there seems much room for improving the health conditions of the Kazakh people in view of its low position even among the CIS countries. The literacy rate and the primary education completion rate are almost 100% in Kazakhstan.

It is more disturbing that Kazakhstan ranks low by indices related to the information and communication drive in the world and even among the CIS countries. Typically, Kazakhstan ranks lower than all the countries in the similar income levels for the number of internet users per population. Considering the policy to accelerate the development of transport and communication infrastructure established by the “Kazakhstan 2030”, this phenomenon may also be socially rooted.

Attachment to Section 2.3: Detailed data for comparison of Kazakhstan with Other Countries

Table A2.3-1 Comparison of Kazakhstan with CIS Countries by Selected Indices

Country	Russia	Ukraine	Kazakhstan	Belarus	Azerbaijan	Uzbekistan
Area (sq. km)	17,075.20	603.70	2,717.30	207.60	86.60	447.40
Population 2007	141.38	46.30	15.28	9.72	8.12	27.78
GDP 2006 (PPP bill. US$)	1,746.00	364.30	143.10	82.94	59.71	55.75
(Rank)	(9)	(29)	(55)	(65)	(76)	(78)
Per Capita GDP 2007 (PPP US$)	12,200	7,800	9,400	8,100	7,500	2,000
(Rank)	(81)	(106)	(88)	(104)	(111)	(183)
Life Expectancy at Birth 2007	65.87	67.88	67.22	70.05	65.96	64.98
(Rank)	(156)	(147)	(149)	(138)	(155)	(160)
Infant Mortality 2007 (:1000 live birth	11.06	9.50	27.41	6.63	58.31	68.89
(Rank)	(71)	(66)	(135)	(43)	(173)	(188)
Internet User Ratio (per persons)	5.97	8.77	38.21	2.87	11.96	31.57
(Rank)	(91)	(111)	(169)	(50)	(126)	(161)
Telephone Line Ratio (per line)	3.53	3.81	6.11	2.96	7.44	16.18
(Rank)	(81)	(88)	(119)	(65)	(129)	(161)
Mobile Phone Ratio (per phone)	1.18	2.69	3.08	2.37	3.62	25.25
(Rank)	(42)	(103)	(115)	(97)	(123)	(195)
Investment Ratio 2006 (% in GDP)	18.20	22.90	27.00	25.90	44.90	0.00
(Rank)	(113)	(59)	(30)	(37)	(1)	(0)
Inflation Ratio (CPI Annual Incr. %)	9.80	11.60	8.60	9.50	8.00	7.60
(Rank)	(187)	(198)	(175)	(183)	(169)	(167)
Oil Production (tous. bbl/day)	9,400.00	90.40	1,300.00	34.26	477.00	142.00
Net Oil Export (tous. bbl/day)	6,900.00	-195.12	953.00	-345.50	0.00	0.00
Ntural Gas Production (bill. cu m)	641.00	20.85	20.49	0.18	5.01	62.50
Net Gas Export (bill. cu m)	180.20	-53.09	4.74	-16.22	-4.93	12.50

Country	Turkmenistan	Georgia	Armenia	Kyrgyzstan	Tajikistan	Moldova
Area (sq. km)	488.10	69.70	29.80	198.50	143.10	33.84
Population 2007	5.10	4.65	2.97	5.28	7.08	4.32
GDP 2006 (PPP bill. US$)	42.84	17.88	16.94	10.73	9.52	9.07
(Rank)	(88)	(122)	(126)	(139)	(143)	(145)
Per Capita GDP 2006 (PPP US$)	8,500	3,800	5,700	2,100	1,300	2,000
(Rank)	(98)	(149)	(124)	(180)	(203)	(182)
Life Expectancy at Birth 2007	68.30	76.30	72.12	68.81	64.61	70.20
(Rank)	(145)	(64)	(115)	(142)	(162)	(133)
Infant Mortality 2007 (:1000 live birth	53.49	17.36	21.69	33.38	43.64	13.88
(Rank)	(167)	(98)	(114)	(146)	(153)	(81)
Internet User Ratio (per persons)	141.58	26.46	19.81	18.87	1,415.32	10.64
(Rank)	(195)	(153)	(149)	(144)	(219)	(119)
Telephone Line Ratio (per line)	10.30	6.80	4.95	12.06	28.86	4.65
(Rank)	(143)	(122)	(109)	(149)	(176)	(104)
Mobile Phone Ratio (per phone)	98.02	3.18	9.29	9.75	26.70	3.96
(Rank)	(213)	(118)	(164)	(165)	(197)	(128)
Investment Ratio 2006 (% in GDP)	28.80	30.00	20.90	15.50	19.90	24.80
(Rank)	(21)	(15)	(80)	(132)	(93)	(47)
Inflation Ratio (CPI Annual Incr. %)	11.00	10.00	2.90	6.40	7.50	14.10
(Rank)	(195)	(190)	(73)	(151)	(165)	(210)
Oil Production (tous. bbl/day)	213.70	1.98	0.00	1.38	0.25	0.00
Net Oil Export (tous. bbl/day)	170.00	0.00	0.00	0.00	0.00	0.00
Ntural Gas Production (bill. cu m)	58.57	0.02	0.00	0.03	0.04	0.00
Net Gas Export (bill. cu m)	42.00	-1.50	-1.33	-0.89	-1.35	-2.17

Source: The World Fact Book, CIA

Table A2.3-2 Comparison of Kazakhstan with Newly Accepted EU Countries by Selected Indices

Country	Poland	Czech Republic	Hungary	Slovakia	Lithuania	Slovenia
Area (sq. km)	312.69	78.87	93.03	48.85	65.20	20.27
Population 2007	38.52	10.23	9.96	5.45	3.58	2.01
GDP 2006 (PPP bill. US$)	552.40	224.00	175.20	99.19	54.90	47.01
(Rank)	(23)	(41)	(52)	(59)	(79)	(83)
Per Capita GDP 2007 (PPP US$)	14,300	21,900	17,600	18,200	15,300	23,400
(Rank)	(71)	(50)	(61)	(60)	(65)	(47)
Life Expectancy at Birth 2007	75.19	76.42	72.92	74.95	74.44	76.53
(Rank)	(75)	(61)	(101)	(79)	(86)	(60)
Infant Mortality 2007 (:1000 live birtl	7.07	3.86	8.21	7.12	6.68	4.35
(Rank)	(50)	(10)	(60)	(51)	(44)	(16)
Internet User Ratio (per persons)	3.63	2.01	3.26	2.18	2.93	1.84
(Rank)	(68)	(34)	(59)	(41)	(52)	(30)
Telephone Line Ratio (per line)	3.26	3.18	2.97	4.55	4.46	2.46
(Rank)	(72)	(71)	(66)	(102)	(100)	(56)
Mobile Phone Ratio (per phone)	1.32	0.87	1.07	1.20	0.82	1.14
(Rank)	(52)	(7)	(29)	(43)	(4)	(39)
Investment Ratio 2006 (% in GDP)	19.20	26.20	23.40	27.60	23.00	25.60
(Rank)	(101)	(36)	(57)	(27)	(58)	(39)
Inflation Ratio (CPI Annual Incr. %)	1.30	2.70	3.70	4.40	3.80	2.40
(Rank)	(23)	(66)	(106)	(122)	(110)	(54)
Oil Production (tous. bbl/day)	35.88	15.24	47.53	11.48	14.00	0.01
Net Oil Export (tous. bbl/day)	-360.70	-155.33	-46.82	-56.84	-93.00	0.00
Ntural Gas Production (bill. cu m)	5.96	0.22	2.96	0.14	0.00	0.00
Net Gas Export (bill. cu m)	-9.92	-8.73	-11.42	-6.50	-2.92	-1.10

Country	Latvia	Estonia	Kazakhstan	Russia	Ukraine
Area (sq. km)	64.59	45.23	2,717.30	17,075.20	603.70
Population 2007	2.26	1.32	15.28	141.38	46.30
GDP 2006 (PPP bill. US$)	36.49	26.85	143.10	1,746.00	364.30
(Rank)	(95)	(104)	(55)	(9)	(29)
Per Capita GDP 2006 (PPP US$)	16,000	20,300	9,400	12,200	7,800
(Rank)	(63)	(54)	(88)	(81)	(106)
Life Expectancy at Birth 2007	71.60	72.30	67.22	65.87	67.88
(Rank)	(119)	(111)	(149)	(156)	(147)
Infant Mortality 2007 (:1000 live birtl	9.16	7.59	27.41	11.06	9.50
(Rank)	(63)	(54)	(135)	(71)	(66)
Internet User Ratio (per persons)	2.19	1.91	38.21	5.97	8.77
(Rank)	(42)	(32)	(169)	(91)	(111)
Telephone Line Ratio (per line)	3.09	2.98	6.11	3.53	3.81
(Rank)	(69)	(67)	(119)	(81)	(88)
Mobile Phone Ratio (per phone)	1.21	0.91	3.08	1.18	2.69
(Rank)	(44)	(8)	(115)	(42)	(103)
Investment Ratio 2006 (% in GDP)	31.40	32.40	27.00	18.20	22.90
(Rank)	(13)	(9)	(30)	(113)	(59)
Inflation Ratio (CPI Annual Incr. %)	6.80	4.40	8.60	9.80	11.60
(Rank)	(161)	(123)	(175)	(187)	(198)
Oil Production (tous. bbl/day)	0.00	6.82	1,300.00	9,400.00	90.40
Net Oil Export (tous. bbl/day)	0.00	-54.00	953.00	6,900.00	-195.12
Ntural Gas Production (bill. cu m)	0.00	0.00	20.49	641.00	20.85
Net Gas Export (bill. cu m)	-1.91	-1.44	4.74	180.20	-53.09

Source: Ibid.

Table A2.3-3 Comparison of Kazakhstan with Countries of Similar GDP Levels by Selected Indices

Country	Venezuela	Ireland	Finland	Hungary	Israel	Morocco
Area (sq. km)	912.05	70.28	338.15	93.03	20.77	446.55
Population 2007	26.02	4.11	5.24	9.96	6.43	33.76
GDP 2006 (PPP bill. US$)	186.30	180.70	176.40	175.20	170.30	152.50
(Rank)	(49)	(50)	(51)	(52)	(53)	(54)
Per Capita GDP 2007 (PPP US$)	7,200	44,500	33,700	17,600	26,800	4,600
(Rank)	(112)	(8)	(21)	(61)	(38)	(138)
Life Expectancy at Birth 2007	73.28	77.90	78.66	72.92	79.59	71.22
(Rank)	(94)	(47)	(37)	(101)	(21)	(122)
Infant Mortality 2007 (:1000 live birtl	22.52	5.22	3.52	8.21	6.75	38.85
(Rank)	(119)	(30)	(7)	(60)	(46)	(150)
Internet User Ratio (per persons)	8.56	1.99	1.59	3.26	1.74	7.34
(Rank)	(107)	(33)	(18)	(59)	(26)	(101)
Telephone Line Ratio (per line)	7.22	2.02	2.47	2.97	2.19	25.17
(Rank)	(126)	(37)	(58)	(66)	(48)	(172)
Mobile Phone Ratio (per phone)	2.08	0.98	1.00	1.07	0.83	2.72
(Rank)	(90)	(12)	(19)	(29)	(5)	(104)
Investment Ratio 2006 (% in GDP)	19.80	28.00	18.90	23.40	17.30	21.70
(Rank)	(95)	(26)	(108)	(57)	(119)	(72)
Inflation Ratio (CPI Annual Incr. %)	15.80	3.90	1.70	3.70	-0.10	2.80
(Rank)	(217)	(112)	(32)	(106)	(7)	(71)
Oil Production (tous. bbl/day)	3,081.00	0.00	9.11	47.53	0.10	0.30
Net Oil Export (tous. bbl/day)	2,100.00	-151.15	-217.30	-46.82	0.00	-147.80
Ntural Gas Production (bill. cu m)	27.20	0.86	0.00	2.96	0.79	0.05
Net Gas Export (bill. cu m)	0.00	-3.44	-4.87		0.00	

Country	Kazakhstan	Singapore	United Arab Emirates	New Zealand	Slovakia	Sudan
Area (sq. km)	2,717.30	0.69	83.60	268.68	48.85	2,505.81
Population 2007	15.28	4.55	4.44	4.12	5.45	39.38
GDP 2006 (PPP bill. US$)	143.10	141.20	129.50	106.90	99.19	97.47
(Rank)	(55)	(56)	(57)	(58)	(59)	(60)
Per Capita GDP 2006 (PPP US$)	9,400	31,400	49,700	26,200	18,200	2,400
(Rank)	(88)	(29)	(5)	(39)	(60)	(171)
Life Expectancy at Birth 2007	67.22	81.80	75.69	78.96	74.95	49.11
(Rank)	(149)	(5)	(70)	(31)	(79)	(199)
Infant Mortality 2007 (:1000 live birtl	27.41	2.30	13.52	5.67	7.12	91.78
(Rank)	(135)	(1)	(79)	(35)	(51)	(203)
Internet User Ratio (per persons)	38.21	1.88	3.18	1.29	2.18	14.06
(Rank)	(169)	(31)	(58)	(2)	(41)	(130)
Telephone Line Ratio (per line)	6.11	2.46	3.59	2.29	4.55	58.78
(Rank)	(119)	(57)	(83)	(53)	(102)	(189)
Mobile Phone Ratio (per phone)	3.08	1.04	0.98	1.17	1.20	21.54
(Rank)	(115)	(24)	(14)	(40)	(43)	(188)
Investment Ratio 2006 (% in GDP)	27.00	21.80	24.30	22.00	27.60	25.30
(Rank)	(30)	(70)	(50)	(68)	(27)	(41)
Inflation Ratio (CPI Annual Incr. %)	8.60	1.00	10.00	3.80	4.40	9.00
(Rank)	(175)	(17)	(189)	(109)	(122)	(180)
Oil Production (tous. bbl/day)	1,300.00	9.70	2,540.00	27.86	11.48	344.70
Net Oil Export (tous. bbl/day)	953.00	0.00	2,500.00	-89.48	-56.84	275.00
Ntural Gas Production (bill. cu m)	20.49	0.00	46.29	4.35	0.14	0.00
Net Gas Export (bill. cu m)						

Source: ibid.

Table A2.3-4 Comparison of Kazakhstan with Countries of Similar Income Levels by Selected Indices

Country	Russia	Turks and Caicos Islands	Antigua and Barbuda	Botswana	Uruguay	Bulgaria
Area (sq. km)	17,075.20	0.43	0.44	600.37	176.22	110.91
Population 2007	141.38	0.02	0.07	1.82	3.46	7.32
GDP 2006 (PPP bill. US$)	1,746.00	0.22	0.75	17.94	37.54	78.68
(Rank)	(9)	(211)	(199)	(121)	(94)	(66)
Per Capita GDP 2007 (PPP US$)	12,200	11,500	10,900	10,900	10,900	10,700
(Rank)	(81)	(82)	(83)	(84)	(85)	(86)
Life Expectancy at Birth 2007	65.87	74.95	72.42	50.58	75.93	72.57
(Rank)	(156)	(80)	(109)	(193)	(68)	(107)
Infant Mortality 2007 (:1000 live birth	11.06	14.70	18.26	43.97	12.02	19.16
(Rank)	(71)	(88)	(101)	(154)	(75)	(106)
Internet User Ratio (per persons)	5.97	0.00	3.47	30.26	5.09	3.33
(Rank)	(91)	(0)	(64)	(158)	(85)	(62)
Telephone Line Ratio (per line)	3.53	3.82	1.83	13.75	3.46	2.95
(Rank)	(81)	(89)	(29)	(154)	(78)	(64)
Mobile Phone Ratio (per phone)	1.18	12.79	1.29	2.21	5.77	1.17
(Rank)	(42)	(170)	(49)	(93)	(145)	(41)
Investment Ratio 2006 (% in GDP)	18.20	0.00	0.00	21.80	13.60	23.80
(Rank)	(113)	(0)	(0)	(69)	(137)	(51)
Inflation Ratio (CPI Annual Incr. %)	9.80	4.00	0.90	11.40	6.50	6.50
(Rank)	(187)	(116)	(12)	(197)	(155)	(152)
Oil Production (tous. bbl/day)	9,400.00	0.00	0.00	0.00	0.51	3.00
Net Oil Export (tous. bbl/day)	6,900.00	0.00	0.00	-16.00	0.00	-77.40
Ntural Gas Production (bill. cu m)	641.00	0.00	0.00	0.00	0.00	0.00
Net Gas Export (bill. cu m)	180.20	0.00	0.00	0.00	-0.12	-3.07

Country	Mexico	Kazakhstan	Thailand	Cook Islands	Romania	Turkey
Area (sq. km)	1,972.55	2,717.30	514.00	0.24	237.50	780.58
Population 2007	108.70	15.28	65.07	0.02	22.28	71.16
GDP 2006 (PPP bill. US$)	1,149.00	143.10	596.50	0.18	202.20	635.60
(Rank)	(13)	(55)	(21)	(214)	(45)	(18)
Per Capita GDP 2006 (PPP US$)	10,700	9,400	9,200	9,100	9,100	9,000
(Rank)	(87)	(88)	(89)	(90)	(91)	(92)
Life Expectancy at Birth 2007	75.63	67.22	72.55	0.00	71.91	72.88
(Rank)	(71)	(149)	(108)	(0)	(117)	(103)
Infant Mortality 2007 (:1000 live birth	19.63	27.41	18.85	0.00	24.60	38.33
(Rank)	(109)	(135)	(104)	(0)	(129)	(149)
Internet User Ratio (per persons)	5.84	38.21	7.73	6.04	4.51	4.45
(Rank)	(89)	(169)	(104)	(92)	(77)	(76)
Telephone Line Ratio (per line)	5.57	6.11	9.25	3.51	5.07	3.75
(Rank)	(114)	(119)	(140)	(80)	(110)	(85)
Mobile Phone Ratio (per phone)	2.29	3.08	2.38	14.50	1.67	1.63
(Rank)	(95)	(115)	(98)	(175)	(70)	(67)
Investment Ratio 2006 (% in GDP)	20.00	27.00	28.70	0.00	25.00	20.10
(Rank)	(91)	(30)	(22)	(0)	(43)	(88)
Inflation Ratio (CPI Annual Incr. %)	3.40	8.60	5.10	2.10	6.80	9.80
(Rank)	(98)	(175)	(136)	(45)	(159)	(188)
Oil Production (tous. bbl/day)	3,420.00	1,300.00	230.00	0.00	119.00	50.00
Net Oil Export (tous. bbl/day)	1,658.00	953.00	0.00	0.00	-163.00	-570.39
Ntural Gas Production (bill. cu m)	41.47	20.49	22.36	0.00	11.80	0.69
Net Gas Export (bill. cu m)	-9.83	4.74	-7.50	0.00	-6.20	-21.73

Source: Ibid.

CHAPTER 3 POSITION OF MANGISTAU OBLAST IN KAZAKHSTAN'S DEVELOPMENT

3.1 Regional Economic Structure and Mangistau's Position

3.1.1 Regional economic structure

(1) Definition of sector quotient

In order to analyze the sector distribution of value added among oblasts and cities, the sector quotient (SQ) is defined in the way similar to analyze the industrial sub-sector structure by the location quotient. The sector quotient is defined in two ways. The sector quotient with respect to the GDP is defined by dividing the sector value added share by the GDP share, and the sector quotient with respect to population is defined by dividing the same by the population share. The former reflects the comparative dominance of sector in each oblast/city, and the latter reflects the overall productivity of sector in each oblast/city.

The basic data by oblast and also the two cities of Astana and Almaty are summarized in Table 3.1. As seen from the table, Mangistau Oblast has the population share of 2.46% and the GDP share of 6.24%, respectively smaller than the share of its land area, 6.08%. The sector quotient as defined above is calculated by oblast/city and by sector, and the results are summarized in Table 3.2.

Table 3.1 Basic Data by Oblast/City of Kazakhstan, 2005

	Area (10^3km^2)	Population (1,000 persons)			Pop. density ($/km^2$)		GRP* (KZT 10^9)			PCGRP* (KZT 10^3)	
Kazakhstan Total	2,724.9	15,219.3	100%	R	5.6	R	6,791.1	100%	R	446.2	R
Akmola	146.2	746.7	4.91%	8	5.1	8	178.3	2.63%	14	238.8	13
Aktobe	300.6	686.7	4.51%	10	2.3	15	390.4	5.75%	8	568.5	6
Almaty	223.9	1,603.8	10.54%	2	7.2	4	286.4	4.22%	12	178.6	14
Atyrau	118.6	472.4	3.10%	15	4.0	12	849.0	12.50%	2	1,797.1	1
East Kazakhstan	283.3	1,431.2	9.40%	3	5.1	9	418.7	6.16%	7	292.5	11
Zhambyl	144.3	1,001.1	6.58%	6	6.9	5	151.8	2.24%	16	151.7	15
West Kazakhstan	151.3	609.3	4.00%	13	4.0	10	452.2	6.66%	5	742.2	5
Karaganda	428.0	1,334.4	8.77%	4	3.1	14	572.5	8.43%	4	429.1	8
Kyzyiorda	226.0	903.2	5.93%	7	4.0	11	297.6	4.38%	11	329.5	10
Kostanai	196.0	618.2	4.06%	12	3.2	13	235.8	3.47%	13	381.5	9
Mangistau	165.6	374.4	2.46%	16	2.3	16	423.7	6.24%	6	1,131.7	2
Pavidar	124.8	742.9	4.88%	9	6.0	7	335.4	4.94%	9	451.5	7
North Kazakhstan	98.0	663.1	4.36%	11	6.8	6	161.8	2.38%	15	244.0	12
South Kiazakhstan	117.3	2,233.6	14.68%	1	19.0	3	319.6	4.71%	10	143.1	16
City of Astana	0.7	550.4	3.62%	14	786.3	2	582.5	8.58%	3	1,058.3	3
City of Almaty	0.3	1,247.9	8.20%	5	4,159.7	1	1,135.3	16.72%	1	909.8	4

*KZT (Kazakh tenge)
Source: Regions of Kazakhstan 2006, Agency on Statistics, compiled by UNDP

Table 3.2 Comparison of Oblasts and Cities by Sector Quotient (SQ) with Respect to GDP and Population, 2005

	Agric. Value Added (KZT 10^9)					Industrial Value Added (KZT 10^9)				
Kazakhstan Total	479.7	100.0%	R	SQ-G	SQ-P	2,216.6	100.0%	R	SQ-G	SQ-P
Akmola	51.3	10.7%	5	4.07	2.18	36.3	1.6%	13	0.62	0.33
Aktobe	17.0	3.5%	10	0.62	0.79	201.0	9.1%	4	1.58	2.01
Almaty	66.5	13.9%	2	3.29	1.31	76.1	3.4%	12	0.81	0.33
Atyrau	9.4	1.9%	13	0.16	0.63	385.4	17.4%	1	1.39	5.60
East Kazakhstan	46.9	9.8%	6	1.59	1.04	136.7	6.2%	7	1.00	0.66
Zhambyl	28.6	6.0%	7	2.67	0.91	32.7	1.5%	14	0.66	0.22
West Kazakhstan	14.3	3.0%	11	0.45	0.74	196.9	8.9%	5	1.33	2.22
Karaganda	22.3	4.7%	9	0.55	0.53	282.9	12.8%	3	1.51	1.46
Kyzyiorda	68.1	14.2%	1	3.24	2.39	83.3	3.8%	10	0.86	0.63
Kostanai	10.6	2.2%	12	0.64	0.54	120.6	5.4%	8	1.57	1.34
Mangistau	1.8	0.4%	16	0.06	0.15	290.2	13.1%	2	2.10	5.32
Pavlodar	22.9	4.8%	8	0.97	0.98	149.8	6.8%	6	1.37	1.38
North Kazakhstan	58.4	12.2%	3	5.11	2.80	19.1	0.9%	16	0.36	0.20
South Kazakhstan	56.2	11.7%	4	2.49	0.80	77.9	3.5%	11	0.75	0.24
City of Astana	3.3	0.7%	14	0.08	0.19	26.2	1.2%	15	0.14	0.33
City of Almaty	2.2	0.5%	15	0.03	0.06	101.6	4.6%	9	0.27	0.56
	Construction Value Added (KZT 10^9)					Trade Value Added (KZT 10^9)				
Kazakhstan Total	552.7	100.0%	R	SQ-G	SQ-P	920.8	100.0%	R	SQ-G	SQ-P
Akmola	3.2	0.6%	16	0.22	0.12	18.7	2.0%	13	0.77	0.41
Aktobe	29.8	5.4%	6	0.94	1.20	38.0	4.1%	6	0.72	0.91
Almaty	31.6	5.7%	5	1.36	0.54	27.1	2.9%	11	0.70	0.28
Atyrau	98.0	17.7%	2	1.42	5.71	21.6	2.3%	12	0.19	0.75
East Kazakhstan	18.2	3.3%	8	0.54	0.35	76.4	8.3%	4	1.35	0.88
Zhambyl	8.8	1.6%	13	0.72	0.24	15.0	1.6%	14	0.73	0.25
West Kazakhstan	38.7	7.0%	4	1.05	1.75	32.4	3.5%	8	0.53	0.88
Karaganda	16.0	2.9%	9	0.34	0.33	95.4	10.4%	3	1.23	1.18
Kyzyiorda	6.1	1.1%	14	0.25	0.19	47.3	5.1%	5	1.17	0.87
Kostanai	13.3	2.4%	11	0.69	0.59	12.2	1.3%	15	0.38	0.33
Mangistau	28.2	5.1%	7	0.82	2.07	10.3	1.1%	16	0.18	0.46
Pavlodar	10.4	1.9%	12	0.38	0.39	30.1	3.3%	10	0.66	0.67
North Kazakhstan	4.4	0.8%	15	0.34	0.18	31.7	3.4%	9	1.45	0.79
South Kazakhstan	16.0	2.9%	9	0.62	0.20	32.4	3.5%	7	0.75	0.24
City of Astana	152.6	27.6%	1	3.22	7.63	114.5	12.4%	2	1.45	3.44
City of Almaty	77.4	14.0%	3	0.84	1.71	317.9	34.5%	1	2.06	4.21
	Transport & Comm. Value Added (KZT 10^9)					Other Services Value Added (KZT 10^9)				
Kazakhstan Total	867.3	100.0%	R	SQ-Q	SQ-P	1,754.0	100.0%	R	SQ-G	SQ-P
Akmola	25.3	2.9%	12	1.11	0.59	43.6	2.5%	14	0.95	0.51
Aktobe	44.3	5.1%	9	0.89	1.13	60.4	3.4%	9	0.60	0.76
Almaty	39.7	4.6%	10	1.08	0.43	45.5	2.6%	11	0.62	0.25
Atyrau	65.8	7.6%	4	0.61	2.45	268.9	15.3%	2	1.23	4.94
East Kazakhstan	51.1	5.9%	7	0.96	0.63	89.4	5.1%	7	0.83	0.54
Zhambyl	22.3	2.6%	14	1.15	0.39	44.3	2.5%	13	1.13	0.38
West Kazakhstan	37.0	4.3%	11	0.64	1.07	133.0	7.6%	4	1.14	1.89
Karaganda	65.2	7.5%	5	0.89	0.86	90.8	5.2%	6	0.61	0.59
Kyzyiorda	52.1	6.0%	6	1.37	1.01	40.8	2.3%	15	0.53	0.39
Kostanai	21.9	2.5%	15	0.73	0.62	57.2	3.3%	10	0.94	0.80
Mangistau	23.3	2.7%	13	0.43	1.09	70.0	4.0%	8	0.64	1.62
Pavlodar	77.6	8.9%	3	1.81	1.83	44.7	2.5%	12	0.52	0.52
North Kazakhstan	17.8	2.1%	16	0.86	0.47	30.3	1.7%	16	0.72	0.40
South Kazakhstan	44.5	5.1%	8	1.09	0.35	92.6	5.3%	5	1.12	0.36
City of Astana	108.7	12.5%	2	1.46	3.47	177.2	10.1%	3	1.18	2.79
City of Almaty	170.8	19.7%	1	1.18	2.40	465.5	26.5%	1	1.59	3.24

Date: SQ-G=Sector quotient by GDP; SQ-P=Sector quotient by population
Source: ibid.

(2) Inter-regional analysis by SQ

The SQ for agriculture indicates that Mangistau Oblast is the least advantageous among all the oblasts in Kazakhstan with the lowest SQ value by both the GDP and the population. North Kazakhstan is most specialized in agriculture with the highest SQ by the GDP, followed by Akmola. Naturally, the specialization in agriculture is the lowest in the two cities of Aktau and Almaty. The agriculture has the strongest production performance again in North Kazakhstan, followed by Kyziorda and Akmola as indicated by the SQ by the population.

Mangistau Oblast is most specialized in industry of all the oblasts and the cities, clearly reflecting the dominance of the mineral fuels sub-sector. The specialization in industry is high in Aktobe and Kostani as well, but the degree of specialization is much lower. In terms of production performance in this sector, Atyrau with SQ by the population of 5.60 surpasses Mangistau with 5.32. These are by far the strongest oblasts in industrial production. The industrial production is the weakest in North Kazakhstan, followed by Zhambyl.

The SQ for construction indicates that the Astana city is by far the most active with respect to both SQ by the GDP and SQ by the population, owing to the massive construction activities to build and strengthen the new capital. The construction sector is not as dominant in Mangistau Oblast with SQ by the GDP smaller than 1.0, while the productivity in the sector is high in Mangistau with SQ by the population at 2.07, but not as high as in Aktau having SQ by the population at 5.71.

The SQ for trade shows clearly the superiority of the cities of Almaty and Aktau. The trade sector in these cities is most dominant in the respective economy, although not so conspicuous with relatively small SQ by the GDP at 2.06 in Almaty and 1.45 in Astana. The productivity of the sector is by far the highest in these cities as indicated by SQ by the population. It is interesting to note that SQ by the population is smaller than 1.0 in all the oblasts except Karaganda.

The degree of specialization is smallest for the transport and communications sector and the other services sector. The largest SQ by the GDP is 1.81 in Pavlodar, followed by 1.46 in the Almaty city for the transport and communications sector. The SQ by the GDP is highest at 1.59 in the Almaty city, followed by 1.23 in Atyrau for the other services sector. In Mangistau Oblast, the specialization is the lowest at 0.43 for transport and communication, and close to the lowest 0.52 of Pavlodar at 0.64 for other services. The SQ by the population is much higher in the cities of Aktau and Almaty for both of these services sectors except Atyrau having the highest value for the other services sector surpassing the two cities and the second highest for the transport and communications sector, next to Astana.

3.1.2 Mangistau's position

(1) Overview of present position

The present position of Mangistau Oblast in Kazakhstan is analyzed based on readily available macro data. Mangistau Oblast is compared with Kazakhstan in Table 3.3 by using several macro indices.

The population of Mangistau has a 2.46% share in the national population, much smaller than the share of land, although the share of urban population is larger at 3.02%. The contribution of Mangistau to the national production is quite unique. The industrial production has a significant share of 14.6%, while the agricultural production is almost negligible. The share of sheep & goats population in Mangistau in the total sheep and goats' population in Kazakhstan is larger than the population share in the national population. The industrial production is supported mainly by mining, particularly fuel & energy production, which has a 23.6% share in the national mining

production. There exist comparatively more large and medium entities in Mangistau.

Table 3.3 Position of Mangistau Oblast in Kazakhstan, 2006

	Unit	Kazakhstan	Mangistau	Share (%)
Total population	1,000	15,219.3	374.4	2.46
Urban population	1,000	8,696.5	263.0	3.02
Land area	10^3km^2	2,724.9	165.6	6.08
Agricultural production value added	KZT 10^6	859, 500	2, 507	0, 29
Industrial production* – total	KZT 10^9	5,253.0	767.8	14.62
- Mining	KZT 10^9	3,121.1	735.6	23.6
- Manufacturing	KZT 10^9	1,851.6	15.9	0.86
- Utilities	KZT 10^9	280.4	16.3	5.81
Registered entities – total	no.	226,908	6,044	2.66
- Small entities	no.	213,347	5,612	2.63
- Medium entities	no.	11,512	336	2.92
- Large entities	no.	2,049	56	2.73
Cattle population*	1,000	5,203.9	4.2	0.08
Sheep & goats population*	1,000	13,409.1	447.1	3.33
GDP/GRDP	KZT 10^9	10, 139.5	585.5	5.78
Per capita GDP/GRDP	KZT 10^3	659	1, 564	-
Fixed capital investment*	KZT 10^9	2,420.9	143.1	5.91

*2005
Source: Statistical Yearbook of Kazakhstan, 2006; Statistical Yearbook of Mangistau Oblast, 2006

Owing to the large mining production, the gross regional domestic product (GRDP) of Mangistau has a share of 4.81% in the gross domestic product (GDP) of Kazakhstan, significantly larger than the population share. Consequently, the per capita GRDP of Mangistau is almost twice as large as the per capita GDP of Kazakhstan. Mangistau contributes to 5.91% of the fixed capital formation in the Country. Also, the contribution of Mangistau to the transfer of local tax revenues to the Central Government is the third largest, next only to Almaty and Atyrau Oblasts.

(2) Comparative position in the regional economic structure

Comparative position of Mangistau Oblast vis-à-vis other oblasts and the cities of Astana and Almaty is examined based on the inter-regional analysis described above by the sector quotient (SQ) as defined. Mangistau Oblast is the least advantageous in agriculture with respect to both the degree of specialization and the production performance. The value of SQ by the GDP and the population is, in fact, comparable to those of the two cities of Astana and Almaty. That is, rural based economic activities in Mangistau are as insignificant as in the cities.

Mangistau is highly specialized in industry, especially in the mineral fuels sub-sector. This has caused a biased economic structure with all other sectors comparatively weaker than otherwise. Mangistau and the neighboring Atyrau have by far the strongest production performance in the industry sector. Specialization in construction is not so high in Mangistau, although the production performance in the sector is among the highest of all the oblasts. Still, Mangistau lags behind Atyrau for the production performance in construction.

Mangistau has the lowest specialization of all the oblasts in trade and communications, against expectation. This is a reflection of the very strong specialization in industry. The production performance is not impressive either, ranked in the lower middle among the 14 oblasts.

Mangistau has again the lowest specialization of all the oblasts and the cities in transport and communications. The production performance in the sector is fourth strongest in Mangistau of all the oblasts, following Pavlodar in the east and two other oblasts in the west, Aktobe and Atyrau.

The other services sector has also low specialization in Mangistau. The production performance, however, is the third highest in Mangistau, following Atyrau and West Kazakhstan, which rank no.1 and no.2 of all the oblasts in this sector.

(3) Summary of Mangistau's economy

Of the six broad sectors examined above, only the industry sector has the value of SQ by the GDP larger than 1.0. This means that the economic structure of Mangistau is very biased. The construction sector has relatively large SQ by the GDP and SQ by the population at 2.07, owing to construction activities for oil industries and associated housing development for increasing in-migrants. The other services sector follows the construction sector for relatively high SQ value, due to increasing financial and business services again associated largely with the oil and gas boom as well as regular government and social services.

The transport and communication sector has the value of SQ by the population larger than 1.0, owing mainly to the performance of the Aktau port. Agriculture and trade are the two sectors having the lowest SQ value with respect to both the GDP and the population. The low degree of specialization in agriculture is inevitable, but the trade sector should increase the value of SQ by the GDP as industrial activities diversify to induce more trade activities. The production performance should improve for agriculture through enhancement of productivity in crop and livestock production and revitalization of fishery. The production performance for trade would also improve along with the diversification of the economy as a whole.

3.1.3 Prospects of Mangistau Oblast

(1) National context

The recent surge in the economic growth and the rapid increase in per capita incomes in Kazakhstan are largely due to the increase in quantity of oil export combined with high prices of oil and metals. Mangistau Oblast has contributed to the increase in oil export. Naturally, the Government of Kazakhstan would like to reduce the Country's vulnerability to international price fluctuations. In the immediate future, the emphasis is on increasing the efficiency of production and distribution to enhance the competitiveness of existing firms. In the medium term, diversification would become the main thrust of socio-economic development of Kazakhstan. This would include the development of new types of industries as well as downstream industries processing oil, gas and metals, and support industries for parts and services provision for increased domestic value-added.

These new industries would have to compete in the increasingly open economy that Kazakhstan pursues. One of the main objectives of Kazakhstan is to become one of major players in the global market, as evidenced by the emphasis placed on joining WTO. Further opening the domestic market to international competition and increasing the export orientation for production and services will reshape the structure of the economy.

(2) Prospects

Mangistau at present is a very unique resources region in Kazakhstan, specialized almost exclusively in oil and gas resources. Consequently, the fuel & energy production sub-sector has a 25.5% share in the national production. The only other sub-sector having a share significantly larger than the population share is electricity with a 6.2% share, again supported by the oil and gas production. Other resources' contributions are almost negligible, including other mineral resources and agricultural products. Other resources-based processing and related economic

activities are difficult to establish in the short to medium terms, except the expansion of those already established such as those based on shell rock, and sheep and camel milk, wool and leather as well as oil and gas related industries.

The regional development of Mangistau Oblast should be based on the locational advantages of the Oblast. Mangistau is a natural gateway to the Caspian Sea region and further to the West. It is centrally located in the conceived Pan-Caspian Sea economic zone. It may play a key role in integration of Kazakhstan with the global economy.

To realize such potentials, transport infrastructure needs to be much improved as currently conceived. If the transport links are improved with the central part of Kazakhstan, particularly with new railway lines, Mangistau is expected to become the trade and distribution center in a larger geographic context even beyond Kazakhstan. This prospect may be realized in steps over medium and long terms. Import processing type industries may establish earlier in the capital area of Aktau to process imported raw materials and intermediate goods for domestic market. Some of them would effectively substitute existing industries in the more developed areas of the Country. Development of the import processing type industries may trigger the development of related services to pave the way for more broad-based logistic industry development.

Centering on Aktau, Mangistau should specialize also in high-grade services, including advanced education and researches, and specialized health care. The Aktau city itself should be developed into an internationally recognized center of excellence for these services, cultural services, and urban amenities. Some of these services would cater for neighboring regions and countries as well. These high-grade services together with the cosmopolitan atmosphere would help to attract the skilled labor required by firms serving the international market.

Mangistau would continue to be important as a popular destination for domestic tourists attracted to the unique opportunities offered by the Caspian Sea. Tourism potentials in Mangistau, however, would go beyond the beach resorts and domestic tourism. Particularly in Karakiya, opportunities for experience/action-oriented tourism abound, including the Ustyurt state reserve and the sacred Bikeata site, which may attract international tourists as well. To realize such potentials, transport infrastructure should be strategically developed to establish attractive tour itineraries. Also, planned urban development particularly of Aktau and Zhanaozen would be essential to make them attractive tourism bases.

The availability of water is and will continue to be the critical constraint to regional and urban development of Mangistau Oblast. The water sources presently used are the water transferred from the Volga river in Russia, local groundwater mainly in plateau areas, and desalinization plants. Alternative sources of water may be established to enhance the water security. Possibilities include re-use of treated sewage, and water transfer from other regions or countries. The latter may take a form of water diversion from the Ural river or water shuttles utilizing oil tankers or lorries returning otherwise empty from oil receiving regions/countries. Groundwater extraction may be increased in plateau areas that do not suffer from salt-water intrusion or soil salinization.

Land productivity in Mangistau may be enhanced through grazing land and pastures management and tree planting in selected areas. Areas currently categorized as reserve lands may be selectively utilized for tree planting by the Oblast initiative to reduce wind erosion of top soil and enhance water retention capacity of land. This may have significant long-term effects, including expansion of forage production and possibly also crop cultivation.

3.2 Mangistau Oblast in Commodity Flow and External Trade

3.2.1 Freight transport in Kazakhstan and Mangistau Oblast

(1) Artery transport system

The artery transport system of Kazakhstan consists of the road network with 23,508km of republican roads and 67,337km of local roads, and the railway network extending to 14,205.3km (Figure 3.1). The main corridors have developed in the north-south directions and the east-west traffic is forced to make detours.

Figure 3.1 Artery Transport System of Kazakhstan

(2) Freight transport volume and turnover in Kazakhstan

The volume of freight transportation in Kazakhstan increased at the average annual rate of 8.2% in 2001-05 to reach 1.93 billion ton (Table 3.4). The freight turnover increased at a slightly lower rate of 7.1% per annum in the same period to reach 296.3 billion ton・km in 2005. The average distance of transport stayed practically at the same level during this period, more or less in 150-160km.

Table 3.4 Freight Transport Volume and Turnover by Transport Mode in Kazakhstan

(1) Volume of freight transportation Unit: 10^6t

	2001	2002	2003	2004	2005
Railway	183.8	178.7	202.7	215.6	222.7
Motor road	1076.9	1219.3	1318.2	1444.8	1511.1
River	0.5	0.5	0.5	0.7	0.8
Air	0.0	0.0	0.0	0.0	0.0
Pipeline	143.3	132.6	166.1	179.4	192.0
All modes of transport	1404.5	1531.1	1687.5	1840.5	1926.9

(2) Freight turnover — Unit: 10^9t/km

	2001	2002	2003	2004	2005
Railway	135.7	133.1	147.7	163.4	171.9
Motor road	33.0	37.6	40.2	43.9	47.1
River	0.0	0.1	0.1	0.1	0.1
Air	0.0	0.1	0.1	0.1	0.1
Pipeline	56.6	61.5	70.4	75.6	77.1
All modes of transport	225.4	232.3	258.4	283.1	296.3

Source: *Statistical Yearbook of Kazakhstan, 2006*

The modal split for transport volume is led by road transport with a 78% share in 2005, followed by railway (12%), pipeline (10%) and others. The modal split for transport turnover, however, is led by railway with a 58% share in 2005, followed by pipeline (26.0%), road (16%) and others.

(3) Freight transport volume and turnover in Mangistau

The freight transport volume and turnover by motor roads in Mangistau increased rapidly in recent years (Table 3.5). The freight volume by motor roads reached 109.6 million and the turnover reached 2,850.3 million ton/km, implying the average transport distance of 26.0km. Mangistau's shares for both transport volume and turnover are larger than its shares for population (2.5%) and GRDP (4.7%).

Table 3.5 Freight Transport Volume and Turnover by Motor Road in Mangistau Oblast

(1) Volume of freight transportation by motor road

	2001	2002	2003	2004	2005	2006
Volume (10^6t)	4.8	108.0	118.7	125.8	114.5	109.6
Turnover (10^6t/km)	124.6	1969.5	2148.5	2252.5	2485.6	2850.3

(2) Share of Motor Road of Mangistau Oblast in the country

	2001	2002	2003	2004	2005
Volume (%)	0.45	8.86	9.00	8.71	7.58
Turnover (%)	0.38	5.24	5.34	5.13	5.28

Source: Statistics Department of Mangistau Oblast

The transport volume by railway cannot be specified for Mangistau Oblast as its data are included in those for the Atyrau department of KTZ. The freight transport volume under the KTZ Atyrau department increased from 5.6 million ton in 2002 to 8.6 million ton in 2007 at the average annual rate of 15.4%, much higher than the rate 6.7% at the national level.

3.2.2 Commodity flow through railway in Kazakhstan and Mangistau

The commodity flow through railway, which is most important long-haul transportation mode in the Country, is analyzed for container cargoes and general cargoes.

(1) Flow of containers through railway

1) Flow of imported containers

The origins and destinations of imported containers are shown in Table 3.6 and Figure 3.2. The total number of containers amounted approximately to 63,000 in 2006. The Dostyk station in Almathy Oblast is the dominant gate of imported containers. From Dostyk, a large amount of imported containers is directed to Almaty, Astana, Shimkent, Karaganda and Aktau. A considerable amount of containers is directed from West Kazakhstan to Almaty. Also, some of

imported containers are transferred from Kostanai to Karaganda, Astana and Pavlodar Oblasts.

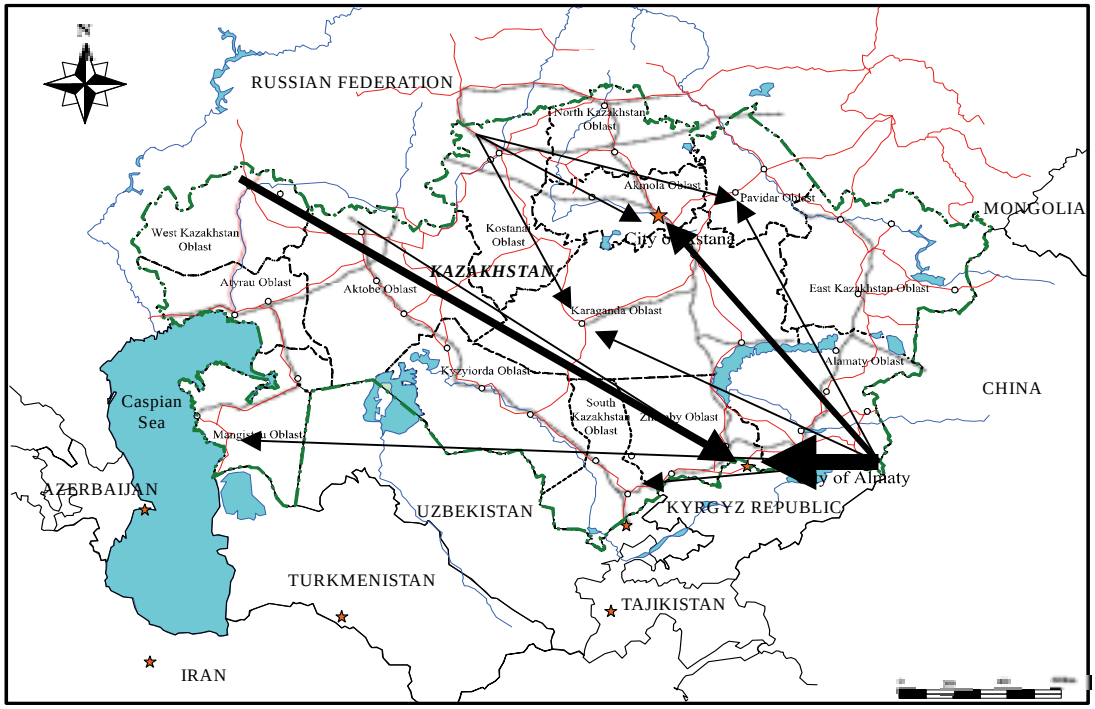
Table 3.6 Origins and Destinations of Imported Containers in Kazakhstan (2006)

Unit: No. of containers (20ft, 40ft)

Name & No. of Station		To	6 Aktau (port)	7 Aktobe	8 Almaty-1	9 Almaty-2	14 Astana	52 Karaganda	67 Mangishlak	69 Medeu	79 Pavlodar	108 Shimkent	Others	Total
	From	Oblast No.	11	2	3	3	1	8	11	3	12	14		
4	Aksarayskaya	4	11	0	0	0	0	2	31	0	11	0	55	110
6	Aktau (port)	11	0	1	4	7	0	0	0	3	0	0	8	23
29	Dostyk	3	375	206	16525	3374	2126	391	250	3371	414	1157	2852	31041
44	Ilezk	7	326	394	2509	478	0	0	341	224	0	295	926	5493
57	Kulunda	12	0	39	14	83	28	33	13	0	338	13	115	676
64	Lokot	2	4	15	3575	377	427	59	58	178	31	319	728	5771
65	Lugovaya	6	0	0	0	0	0	0	0	1	0	0	0	1
72	N-Tau	6	0	4	0	0	0	0	0	0	0	0	57	61
74	Oazis	4	0	12	1	0	0	0	97	0	0	0	36	146
75	Ozinki	7	327	599	4690	885	0	3	353	1113	1	317	1974	10262
83	Petropavlsk	13	0	5	108	13	77	53	0	1	6	0	348	611
86	Sary-Agasg	14	1	2	1033	156	43	52	27	14	2	81	210	1621
100	Tobol	9	0	0	154	21	1224	1726	0	11	1069	0	2455	6660
118	(empty)		0	3	4	9	1	0	0	1	0	0	3	21
	Total		1044	1280	28617	5403	3926	2319	1170	4917	1872	2182	9767	62497

Source: JICA Logistics Study Team

Note: 1. Akmola, 2. Aktobe, 3. Almaty, 4. Atyrau, 5. East Kazakhstan, 6. Zhambyl, 7. West Kazakhstan, 8. Karaganda, 9. Kostanai, 10. Kyzylorda, 11. Mangistau, 12. Pavlodar, 13. North Kazakhstan, 14. South Kazakhstan (Astana City and Almaty City are included in Akmola Oblast and Almaty Oblast, respectively.)



Note: The width of an arrow does not necessarily indicate the exact magnitude of container flow.

Figure 3.2 Major Flow of Imported Containers in Kazakhstan (2006)

2) Flow of export containers

The number of export containers is much smaller than imported containers. In 2006, export containers amounted approximately to 7,200. As shown in Table 3.7 and Figure 3.3, major gates for the outflow are limited at Kostanai, West Kazakhstan, Aktobe and Dostyk. Export containers come from Pavlodar, East Kazakhstan, Aktobe and Karaganda.

Table 3.7 Origins and Destinations of Exported Containers in Kazakhstan (2006)

Unit: No. of containers (20ft, 40ft)

Name & No. of Station		To	4 Aksarayskaya	6 Aktau (port)	29 Dostyk	57 Kulunda	64 Lokot	65 Lugovaya	72 N-Tau	74 Oazis	75 Ozinki	83 Petropavlsk	86 Saryagash	100 Tobol	118 (empty)	Total
From		Oblast No.	4	11	3	12	2	6	6	4	7	13	14	9		
5	Aksu_I	12	0	0	0	0	0	0	0	0	0	0	0	1672	0	1672
6	Aktau (port)	11	0	0	0	0	0	0	0	0	0	0	7	0	0	7
7	Aktobe	2	0	1	10	0	0	2	0	0	29	6	0	0	5	53
8	Almaty-1	3	17	1	105	0	46	2	0	0	179	146	96	0	0	592
9	Almaty-II	3	0	0	0	41	5	0	0	0	279	28	12	0	2	367
10	Altintau	12	0	0	18	0	0	0	0	0	0	0	0	117	0	135
14	Astana	1	0	0	16	0	0	0	0	0	0	1	5	40	0	62
16	Atyrau	4	0	0	1	0	0	0	0	0	5	0	0	0	0	6
17	Balhash_1	8	0	0	0	0	0	0	0	0	0	0	0	1	0	1
24	Jambul	6	0	0	0	7	2	0	0	0	267	9	3	0	0	288
29	Dostyk	3	0	0	0	1	0	15	0	0	0	1	36	0	0	53
30	Dostyk-EKSP	3	0	0	0	0	0	0	0	0	0	0	4	0	0	4
31	Ekibastuz	12	0	0	0	3	0	0	0	0	0	3	0	5	0	11
33	Zhaksimai	2	0	0	4	0	0	0	0	0	0	0	0	0	0	4
36	Zhanatas	6	0	0	90	0	0	0	0	0	0	0	0	0	0	90
37	Zhezkazgan	8	0	0	0	8	0	0	0	0	0	10	0	34	0	52
40	Zhilaevo	7	0	0	2	1	0	0	0	0	7	0	0	0	0	10
41	Zhinshke	2	2	0	0	0	0	4	157	0	782	0	7	0	0	952
42	Zashita	5	0	0	142	1	16	0	0	0	0	6	3	80	0	248
43	Ziryanovsk	5	0	0	0	0	0	0	0	0	0	0	0	2	0	2
46	Kazakhstan	7	0	0	26	0	0	0	0	22	0	0	0	0	0	48
52	Karaganda	8	0	0	2	7	0	0	0	0	0	12	1	399	0	421
53	Kzil-Orda	10	0	0	1	0	0	0	0	0	1	1	0	0	0	3
55	Kokshetau	1	0	0	0	0	1	0	0	0	0	1	24	14	0	40
56	Korshunovo	5	0	0	416	0	1197	0	0	0	0	0	0	0	0	1613
61	Kostanai	9	0	0	0	1	9	0	0	0	0	6	0	35	0	51
67	Mangishlak	11	0	0	0	1	1	2	0	0	49	3	0	0	0	56
80	Pavlodar-South	12	0	0	0	10	2	0	0	0	0	2	0	28	0	42
91	Semipalatinsk-Gruzovoy	5	0	0	0	4	0	0	0	0	0	6	1	19	0	30
96	Taldikurgan	3	0	0	2	3	1	0	0	0	12	6	1	0	0	25
102	Turatam	10	0	0	0	0	0	0	0	0	10	0	0	0	0	10
108	Shimkent	14	0	0	10	4	28	1	0	0	227	9	4	0	0	283
Total			19	2	845	92	1308	26	157	22	1847	256	204	2446	7	7231

Source: JICA Logistics Study Team

Note: 1. Akmola, 2. Aktobe, 3. Almaty, 4. Atyrau, 5. East Kazakhstan, 6. Zhambyl, 7. West Kazakhstan, 8. Karaganda, 9. Kostanai, 10. Kyzylorda, 11. Mangistau, 12. Pavlodar, 13. North Kazakhstan, 14. South Kazakhstan (Astana City and Almaty City are included in Akmola Oblast and Almaty Oblast, respectively.)

3) Flow of transit containers

The number of transit containers amounted approximately to 45,000 in 2006. As shown in Table 3.8 and Figure 3.4, the flow from the Dostyk station to South Kazakhstan (Shimkent) is dominant, followed by the flow from Aktobe to South Kazakhstan and from West Kazakhstan to South Kazakhstan. Also, a considerable amount of transit containers are seen from South Kazakhstan to West Kazakhstan. At present, the majority of transit containers in Kazakhstan is moving only along the southern edge of the Country and going out to Uzbekistan, along the southern corridor or the TRACECA route (Figure 3.5).

Note: The width of an arrow does not necessarily indicate the exact magnitude of container flow.

Figure 3.3 Major Flow of Exported Containers in Kazakhstan (2006)

Table 3.8 Origin and Destination of Transit Containers in Kazakhstan (2006)

Unit: No. of containers (20ft, 40ft)

Name & No. of Station		To	4	6	29	44	57	64	65	74	75	83	86	100	117	
			Aksarayskaya	Aktau (port)	Dostyk	Ilezk	Kulunda	Lokot	Lugovaya	Oazis	Ozinki	Petropavlsk	Sary-Agash	Tobol	Nikel-Tau	Total
	From	Oblast No.	4	11	3	7	12	2	6	4	7	13	14	9	2	
4	Aksarayskaya	4	0	0	0	0	0	0	0	279	0	0	0	0	0	279
6	Aktau (port)	11	0	0	0	0	0	0	96	0	0	0	0	0	0	96
29	Dostyk	3	25	0	0	94	64	73	1993	0	277	75	17647	13	1	20262
44	Ilezk	7	0	0	0	0	0	0	1009	1241	0	0	2433	0	0	4683
57	Kulunda	12	0	0	0	0	0	0	42	0	0	0	186	0	0	228
64	Lokot	2	0	0	0	0	0	0	550	0	0	0	7068	0	0	7618
65	Lugovaya	6	0	4	29	9	0	116	0	0	293	0	49	9	0	509
74	Oazis	4	351	0	0	22	0	0	0	0	363	0	0	0	0	736
75	Ozinki	7	0	0	0	0	0	0	1018	1513	0	0	2063	0	0	4594
83	Petropavlsk	13	0	0	0	0	0	0	1	0	0	0	0	0	0	1
86	Sary-Agash	14	0	0	566	715	29	741	384	0	3411	2	0	0	18	5866
100	Tobol	9	0	0	0	0	0	0	22	0	0	0	3	0	0	25
	Total		376	4	595	840	93	930	5115	3033	4344	77	29449	22	19	44897

Source: JICA Logistics Study Team

Note: 1. Akmola, 2. Aktobe, 3. Almaty, 4. Atyrau, 5. East Kazakhstan, 6. Zhambyl, 7. West Kazakhstan, 8. Karaganda, 9. Kostanai, 10. Kyzylorda, 11. Mangistau, 12. Pavlodar, 13. North Kazakhstan, 14. South Kazakhstan (Astana City and Almaty City are included in Akmola Oblast and Almaty Oblast, respectively.)

Note: The width of an arrow does not necessarily indicate the exact magnitude of container flow.

Figure 3.4 Major Flow of Transit Containers in Kazakhstan (2006)

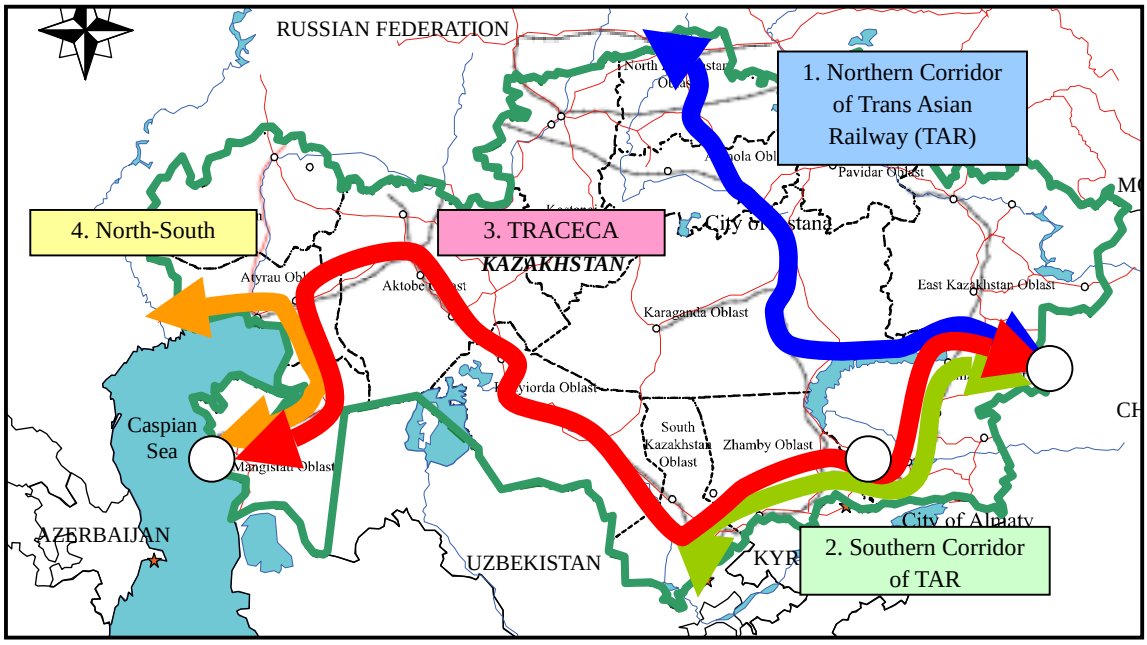


Figure 3.5 Main Freight Transport Corridors of Kazakhstan

(2) Flow of general cargoes through railway

The generated general cargoes for export and domestic use in Kazakhstan by Oblast are shown in Table 3.9. In 2006, the generated domestic cargoes amounted to 133 million ton, while export cargoes amounted to 83 million ton. Kostanai, Karaganda and East Kazakhstan Oblasts generated

a large portion of domestic cargoes. The major commodities are grains, iron and steel products and non-ferrous ores, respectively. Pavlodar and Karaganda Oblasts generated a majority of export cargoes such as aluminum and iron/steel products. The cargoes generated from Mangistau Oblast are not recorded as the data on Mangistau Oblast, which are included in the Atyrau Department of KTZ and some may be included in the unknown.

Table 3.9 Generated General Cargo Volume by Oblast

Unit: 1000t

	Oblast	2005 Import	2005 Domestic	2006 Import	2006 Domestic
1	East Kazakhstan	1,434	4,490	1,211	6,494
2	Almaty	4,011	2,211	3,104	2,283
3	Zhambyl	615	1,186	671	1,666
4	South Kazakhstan	1,145	2,171	901	2,419
5	Kyzlorda	340	82	304	80
6	Karaganda	1,439	23,311	1,651	24,632
7	Akmola	2,195	13,044	1,535	11,932
8	Pavlodar	1,502	10,857	1,401	10,576
9	North Kazakhstan	36	0	63	0
10	Kostanai	1,156	14,337	1,081	11,645
11	Aktobe	1,722	1,209	1,361	1,299
12	Mangistau	649	0	585	61
13	West kazakhstan	365	230	251	427
14	Atyrau	1,149	896	826	1,941
	Unknown	19	51,940	111	54,214
	Total	17,777	125,964	15,056	129,669

Source: ibid.

Major types of general domestic and export cargoes in Kazakhstan in 2006 are shown in Tables 3.10 and 3.11. For domestic cargoes, coal, construction materials, non-ferrous ores, and iron ore have large shares. For export cargoes, on the other hand, oil, coal, iron ore, ferrous metals, and grains hold large shares.

Table 3.10 Types of General Domestic Cargo in Kazakhstan (2006)

Type of cargo	%	Type of cargo	%
Coal	38.9	Grain	1.7
Construction materials	11.3	Chemicals and soda	1.6
Non-ferrous ore	10.3	Ferrous metals	0.8
Iron ore	8.3	Non-ferrous metals	0.0
Oil	5.9	Other	21.3
		Total	100.0

Source: ibid.

Table 3.11 Types of General Export Cargo in Kazakhstan (2006)

Type of cargo	%	Type of cargo	%
Oil	16.6	Chemicals and soda	1.9
Coal	7.5	Non-ferrous ore	1.2
Iron ore	6.0	Non-ferrous metals	1.0
Ferrous metals	5.4	Construction materials	0.9
Grains	4.5	Other	53.1
Ferrous metal scrap	1.9	Total	100.0

Source: ibid.

The volume of attracted (or arrival) general cargoes for imports and domestic use by Oblast in

Kazakhstan is shown in Table 3.12. In 2006, domestic cargoes amounted to 130 million ton, while import cargoes amounted to 15 million ton. Karaganda, Akmora, Kostanai and Pavlodar Oblasts are major destinations. The volume of attracted cargoes for import to Mangistau Oblast amounted to 649,000t in 2005 and 585,000t in 2006, corresponding to 3.6% and 3.8% of the total import, respectively.

Table 3.12 Attracted General Cargo Volume of Railway by the Oblast

Unit: 1000t

		2005		2006	
	Oblast	Import	Domestic	Import	Domestic
1	East Kazakhstan	1,434	4,490	1,211	6,494
2	Almaty	4,011	2,211	3,104	2,283
3	Zhambyl	615	1,186	671	1,666
4	South Kazakhstan	1,145	2,171	901	2,419
5	Kyzlorda	340	82	304	80
6	Karaganda	1,439	23,311	1,651	24,632
7	Akmola	2,195	13,044	1,535	11,932
8	Pavlodar	1,502	10,857	1,401	10,576
9	North Kazakhstan	36	0	63	0
10	Kostanai	1,156	14,337	1,081	11,645
11	Aktobe	1,722	1,209	1,361	1,299
12	Mangistau	649	0	585	61
13	West kazakhstan	365	230	251	427
14	Atyrau	1,149	896	826	1,941
	Unknown	19	51,940	111	54,214
	Total	17,777	125,964	15,056	129,669

Source: ibid.

Major types of attracted general imported cargoes in 2006 are shown in Table 3.13. In both Kazakhstan and Mangistau Oblast, ferrous metal, oil cargoes, building materials and chemical soda have large shares.

Table 3.13 Type of Attracted General Imported Cargo (2006)

Unit: %

Type of Cargo	Kazakhstan	Mangistau Oblast
Ferrous metal	12.4	19.5
Oil cargoes	15.0	11.2
Building material	8.7	9.3
Chemical soda	6.3	4.7
Grain	0.9	1.3
Fertilizers	1.7	0.8
Coal	1.6	0.0
Iron ore	1.0	0.0
Non Ferrous metal	0.3	0.0
Breakage/scrap of Ferrous metal	0.2	0.0
Others	52.1	53.3
All Cargo	100.0	100.0

Source: ibid.

(3) Transportation cost for containers

According to interviews with local forwarders in Aktau, the direct transportation costs for containers will be roughly estimated as shown in Table 3.14. The cost between Shanghai (East Coast of China) and Aktau amounts to US$6,725 per 40 feet container and lead-time is about 28-30

days. This route uses ships from Shangai to Bandar Abbas (port of Persian Gulf, Iran), then trucks to Bandar Anzali (port of Caspian Sea, Iran), and finally ships again to the Aktau port.

In the case that railway is used from Shaghai to Aktau through the Dostyk station, it costs US$6,950-7,150 per 40 feet container and takes about 35-40 days, more costly with a longer time than the case using ships and trucks. More detailed analysis on transportation cost will be conducted based on the output of the Distribution and Logistics Industry Survey entrusted as sub-contract work.

Table 3.14 Transportation Cost for Containers

From (Origin)	To (Destination)	Direct Transportation Cost (US$/40 feet container)	Time (Days)	Transportation Mode	Note
(Domestic)					
Almaty	**Aktau**	1,615	5-6	Railway	
Almaty	Atyrau	1,310	5-6	Railway	
Almaty	Aktobe	1,265	4-5	Railway	
Almaty	Astana	940	2-3	Railway	
Almaty	Karaganda	754	2-3	Railway	
Almaty	Shimkent	640	2-3	Railway	
(International)					
Shanghai (China)	**Aktau**	6,725	28-30	Ship & Truck	Shanghai-Bandar Abbas-Bandar Anzali -Aktau
Dubai (UAE)	**Aktau**	5,600 - 5,850	25-30	Ship & Truck	Dubai-Bandar Abbas-Bandar Anzali-Aktau
Shanghai (China)	**Aktau**	6,950 - 7,150	35-40	Railway	Beijing-Dostik-Aktau
Beijing (China)	**Aktau**	6,950 - 7,100	35-40	Railway	Shanghai-Dostik-Aktau
Urumqi (China)	**Aktau**	5,510	30-35	Railway	Ulmuqi-Dostik-Aktau

Source: JICA Study Team based on interviews
Note: Total transportation cost is comprised of direct transportation cost, cargo terminal fee, customs charge, insurance and so on.

3.2.3 Commodity flow in Mangistau Oblast

(1) Commodity flow through Aktau port

The handling volume and cargo flow at the Aktau port are shown in Table 3.15. The total handling volume of cargoes amounted to 11.2 million ton in 2006, increased at the annual average rate of 12.5% between 2003 and 2006. Oil occupies the majority with a share slightly less than 90%, followed by metals and grains. The volume of container cargoes is still small but has increased recently.

Table 3.15 Volumes of Cargoes Handled at Aktau Seaport (2003-2006)

Unit: ton

Type of Cargo	In/Out from Russia (Mahachakara, Astrahan and Olya)	In/Out from Baku	In/Out from Iran (Bandar Anzali, Amirabad and Neka)	Others	Total	Share (%)
2003						
Oil	3068199.0	2852094.6	1050407.1		6970700.6	89.0
Grain		2364.2	3077.0		5441.2	0.1
Metal		11274.8	810339.7	13983.3	835597.9	10.7
Containers				2609.3	2609.3	0.0
Others		682.2	7619.7	9329.0	17630.8	0.2
Total	2866415.7	1871443.5	1871443.5	25921.6	7831979.7	100.0
Share (%)	36.6	23.9	23.9	0.3	100.0	
2004						
Oil	3709100.0	3044218.3	1535837.7		8289156.0	88.7
Grain			13030.5		13030.5	0.1
Metal		11483.3	958953.4	41111.3	1011548.0	10.8
Containers	215.3		4818.9	908.9	5943.1	0.1
Others	117.9	378.6	3136.4	22804.7	26437.5	0.3
Total	3709433.2	3056080.2	2515776.8	64824.9	9346115.1	100.0
Share (%)	39.7	32.7	26.9	0.7	100.0	

Unit: ton

Type of Cargo	In/Out from Russia (Mahachakara, Astrahan and Olya)	In/Out from Baku	In/Out from Iran (Bandar Anzali, Amirabad and Neka)	Others	Total	Share (%)
2005						
Oil	3770644.3	3028452.0	2105326.2	8352.8	8912775.3	89.4
Grain			33250.6		33250.6	0.3
Metal		15246.1	958356.5		973602.6	9.8
Containers		8.9	9380.3	2036.7	11425.9	0.1
Others		1833.3	6745.7	28365.0	36944.0	0.4
Total	3770644.3	3045540.3	3113059.3	38754.5	9967998.4	100.0
Share (%)	37.8	30.6	31.2	0.4	100.0	
2006						
Oil	3454079.4	2204310.1	4301985.4		9960374.9	89.2
Grain			116671.6		116671.6	1.0
Metal		9066.9	929754.1	89867.0	1028687.9	9.2
Containers		139.8	14431.3	2220.1	16791.3	0.2
Others	152.1	1615.8	10765.4	26534.1	39067.3	0.4
Total	3454231.4	2215132.6	5373607.7	118621.2	11161592.9	100.0
Share (%)	30.9	19.8	48.1	1.1	100.0	

Annual Growth Rate between 2003 and 2006 Unit: %

Type of Cargo	In/Out from Russia (Mahachakara, Astrahan and Olya)	In/Out from Baku	In/Out from Iran (Bandar Anzali, Amirabad and Neka)	Others	Total
Oil	4.0	-8.2	60.0	-	12.6
Grain	-	-	236.0	-	177.8
Metal	-	-7.0	4.7	85.9	7.2
Containers	-	-	-	-5.2	86.0
Others	-	33.3	12.2	41.7	30.4
Total	6.4	5.8	42.1	66.0	12.5

Source: The Aktau International Seaport State Enterprise

According to interviews with officials of the Aktau port, a large part of metal products and grains is shipped to Iran. Metal products come from industries located in the Specialized Economic Zone (SEZ) near the port.

The handling volume through Iranian ports has increased rapidly, while the volume through Russian ports and the port of Baku have deceased. Locations of main coastal ports in the Caspian Sea such as Astrakhan and Olya in Russia, Baku in Azerbaijan, Bandar Anzali and Amirabad in Iran and Turkmenbashi in Turkmenistan are shown in Figure 3.6. According to the JICA Logistics Study Team, the freight volume from the Aktau port for the proposed logistics terminal is estimated at 0.5 million ton in 2011 and 1.14 million ton in 2017.

(2) Commodity flow through other transportation modes

The freight transport volume at the Aktau airport is shown in Table 3.16. In 2006, the handling volume amounted to 3,357t. The volume is still small compared to those by railway, ship or truck, although the growth rate is high. Arrival cargoes, increased at about 18% between 2002 and 2006, are much larger than dispatch cargoes.

Table 3.16 Volumes of Cargo Handled and Commodity Flow at Aktau Airport

Unit: ton

	2002	2003	2004	2005	2006	Annual growth rate (02-06) (%)
Handled cargo, total including	1,899.1	2,091.2	2,611.1	2,412.1	3,357.1	15.3
Arrival cargo	1,603.9	1,916.6	2,314.0	2,140.1	3,082.8	17.7
Dispatch cargo	295.2	174.6	297.1	272.0	274.3	-1.8

Source: Aktau International Airport

The commodity flow by truck will be discussed in the subsequent stage of the Study based on the

output of the Distribution and Logistics Industry Survey and the Traffic Survey sub-contracted.

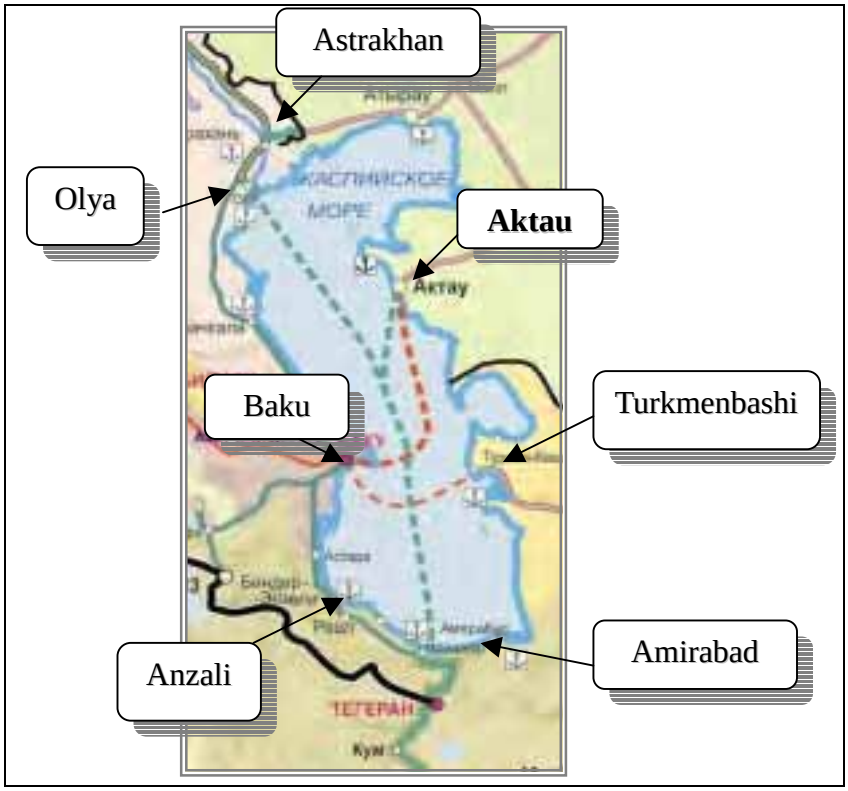


Figure 3.6 Locations of Coastal Ports in Caspian Sea

3.2.4 External trade of Mangistau Oblast

As shown in Table 3.17, the external trade value in Mangistau Oblast in 2006 amounted to US$6,689 million, consisting of US$4,419 million export and US$2,270 million import. In recent five years, the external trade value of the Oblast has remarkably increased by 4 times with annual growth rate of total volume at 32.5%, export at 29.6% and import at 35.5%, respectively. The value of external trade is defined here as registered value of product/commodity for exports or imports within the Oblast.

Table 3.17 Export and Import Values in Mangistau Oblast, 2006

Unit: US$10[6]

	2001	2002	2003	2004	2005	2006	Annual growth rate (01-06) (%)
Total external trade	1,704	1,711	2,376	3,288	4,412	6,689	31.5
Export	1,207	1,292	1,784	2,010	3,229	4,419	29.6
Import	497	419	593	1,278	1,183	2,270	35.5
Balance	710	873	1,191	732	2,046	2,149	24.8

Source: Customs Office in Mangistau Oblast

There are ten customs posts in Mangistau Oblast. They are located at the Aktau airport, Zhanaozen, Kara Shekpen (Bautino port), the Mangishrak railway station, the Aktau seaport, the energy check point of Aktau seaport, Beineu, the Aktau Center of Custom Registration, Temir Baba (at the border with Turkmenistan), and Tazhen (at the border with Uzbekistan).

The share of total external trade of the Oblast in the Country was 10.8% in 2006 (Table 3.18). This is the third largest in the Country after Atyrau Oblast and the Almaty city, and much larger

than the share of GRDP at 6.2% in the Country.

Table 3.18 External Trade in Kazakhstan by Oblast: 2006

Unit: US$1000

Oblast	External trade total		Export		Import	
	Total	Share (%)	Total	Share (%)	Total	Share (%)
Republic of Kazakhstan	61,927,210.3	100.0	38,250,352.0	100.0	23,676,858.4	100.0
Akmola	750,011.3	1.2	365,965.4	1.0	384,045.9	1.6
Aktobe	5,440,081.4	8.8	4,100,943.8	10.7	1,339,137.6	5.7
Almaty	1,170,286.8	1.9	223,236.6	0.6	947,050.2	4.0
Atyrau	12,052,618.2	19.5	10,477,853.8	27.4	1,574,764.3	6.7
East Kazakhstan	2,535,931.9	4.1	1,549,479.4	4.1	986,452.5	4.2
Zhambyl	359,005.3	0.6	195,211.1	0.5	163,794.2	0.7
West Kazakhstan	1,860,775.7	3.0	976,604.1	2.6	884,171.6	3.7
Karaganda	5,452,131.2	8.8	4,223,812.5	11.0	1,228,318.7	5.2
Kostanai	1,776,822.0	2.9	1,021,881.0	2.7	754,941.0	3.2
Kyzylorda	2,450,944.7	4.0	2,205,995.3	5.8	244,949.5	1.0
Mangistau	6,689,237.0	10.8	4,419,130.5	11.6	2,270,106.5	9.6
Pavidor	1,734,116.4	2.8	955,947.2	2.5	778,169.2	3.3
North Kazakhstan	906,481.0	1.5	237,382.2	0.6	669,098.8	2.8
South Kazakhstan	1,756,581.0	2.8	1,082,334.5	2.8	674,246.4	2.8
Astana city	5,606,623.8	9.1	3,416,028.4	8.9	2,190,595.4	9.3
Almaty city	11,385,562.7	18.4	2,798,546.2	7.3	8,587,016.6	36.3

Source: ibid.

Major export destinations in 2006 were European countries (85.9%) such as Switzerland (55.1%) and Italy (24.6%) and Asian countries (9.5%) such as Iran (Table 3.19). Major import origins in 2006 were CIS countries (66.7%), of which Russian Federation occupied the dominant part, EU countries (15.5%) and Asian countries (7.9%) including China and Japan (Table 3.19).

Table 3.19 Exports and Import in Mangistau Oblast by Country Group, 2006

Unit: US$1,000

Country/group of countries/region	External trade total	Share (%)	Export total	Share (%)	Import total	Share (%)	Balance
Total	6,689,237.0	100.0	4,419,130.5	100.0	2,270,106.5	100.0	2,149,024.0
CIS Countries	1,536,889.7	23.0	23,661.8	0.5	1,513,227.9	66.7	-1,489,566.1
EAEC Countries	1,408,613.3	21.1	7,326.1	0.2	1,401,287.2	61.7	-1,393,961.1
Belarus	14,670.7	0.2	117.5	0.0	14,553.3	0.6	-14,435.8
Kyrgyzstan	75.5	0.0	8.8	0.0	66.7	0.0	-57.8
Uzbekistan	2,730.1	0.0	1,200.9	0.0	1,529.3	0.1	-328.4
Russian Federation	1,391,136.9	20.8	5,998.9	0.1	1,385,138.0	61.0	-1,379,139.0
Non-EAEC Countries	128,276.5	1.9	16,335.7	0.4	111,940.7	4.9	-95,605.0
Azerbaijan	65,438.6	1.0	4,126.4	0.1	61,312.2	2.7	-57,185.8
Armenia	1,157.6	0.0	-	0.0	1,157.6	0.1	-1,157.6
Georgia	1,023.2	0.0	368.5	0.0	654.7	0.0	-286.2
Moldova	1,029.8	0.0	292.6	0.0	737.1	0.0	-444.5
Turkmenistan	24,386.9	0.4	2,535.4	0.1	21,851.5	1.0	-19,316.0
Ukraine	35,240.4	0.5	9,012.8	0.2	26,227.6	1.2	-17,214.9
Europe	4,184,667.1	62.6	3,796,530.9	85.9	388,136.1	17.1	3,408,394.8
EU countries	1,669,867.4	25.0	1,317,920.9	29.8	351,946.5	15.5	965,974.4
United Kingdom	223,780.4	3.3	179,534.7	4.1	44,245.7	1.9	135,289.0
Germany	74,155.7	1.1	8,847.1	0.2	65,308.7	2.9	-56,461.6
Italy	1,181,786.7	17.7	1,087,940.5	24.6	93,846.2	4.1	994,094.3
Netherlands	46,705.5	0.7	6,943.8	0.2	39,761.8	1.8	-32,818.0
Poland	36,275.9	0.5	3,336.0	0.1	32,939.9	1.5	-29,604.0
Others	107,163.1	1.6	31,318.9	0.7	75,844.2	3.3	-44,525.4
Non-EU countries	2,514,799.7	37.6	2,478,610.1	56.1	36,189.6	1.6	2,442,420.4
Switzerland	2,440,459.3	36.5	2,435,511.9	55.1	4,947.4	0.2	2,430,564.5
Others	74,340.4	1.1	43,098.2	1.0	31,242.2	1.4	11,856.0

Unit: US$1,000

Country/group of countries/region	External trade total	Share (%)	Export total	Share (%)	Import total	Share (%)	Balance
Asia	597,718.1	8.9	419,180.9	9.5	178,537.2	7.9	240,643.8
Iran	357,641.2	5.3	355,604.5	8.0	2,036.8	0.1	353,567.7
China	74,928.1	1.1	188.4	0.0	74,739.7	3.3	-74,551.3
Hong Kong	59,414.6	0.9	59,405.0	1.3	9.6	0.0	59,395.4
South Korea	6,882.1	0.1	-	0.0	6,882.1	0.3	-6,882.1
Singapore	29,231.2	0.4	-	0.0	29,231.2	1.3	-29,231.2
Japan	27,450.2	0.4	244.7	0.0	27,205.5	1.2	-26,960.7
Others	42,170.7	0.6	3,738.3	0.1	38,432.4	1.7	-34,694.1
America	361,424.8	5.4	179,139.2	4.1	182,285.6	8.0	-3,146.3
Canada	171,458.7	2.6	155,203.0	3.5	16,255.6	0.7	138,947.4
USA	143,751.6	2.1	3,433.8	0.1	140,317.8	6.2	-136,884.0
Others	46,214.6	0.7	20,502.4	0.5	25,712.2	1.1	-5,209.8
Africa	759.8	0.0	615.3	0.0	144.4	0.0	470.9
Australia & Oceania	7,777.5	0.1	2.2	0.0	7,775.3	0.3	-7,773.1

Source: ibid.

The main and almost only significant export commodity from the Oblast is crude oil with a 98% share. Petroleum gases, ferrous wastes and scraps, tubes and pipes, copper, iron and steel products follow as shown in Table 3.20.

Table 3.20 Exports in Mangistau Oblast by Commodity/Product in 2006

No	HC Code	Commodity/product	Monetary term (US$1,000)	Share (%)	Weight (ton)	Share (%)
1	2709	Crude oil from petroleum and bituminous minerals	4,333,503.9	98.06%	10,345,692.3	94.91%
2	8430	Mach nesoi, moving, grad etc, pile-dr, snowplow etc (machinery)	17,835.6	0.40%	1,938.4	0.02%
3	2711	Petroleum gases & other gaseous hydrocarbons	17,461.6	0.40%	412,748.6	3.79%
4	7204	Ferrous waste & scrap, remelt scrap iron/steel ingot	10,782.2	0.24%	82,889.1	0.76%
5	7304	Tubes, pipes etc, seamless, iron nesoi & steel	5,542.2	0.13%	6,506.1	0.06%
6	8431	Parts for machinery of headings 8425 to 8430	3,951.0	0.09%	214.4	0.00%
7	3903	Polymers of styrene, in primary forms (plastic)	3,851.4	0.09%	3,158.9	0.03%
8	9015	Survey, hydrogr, meteoro etc inst, rangef etc, pts	3,186.1	0.07%	53.2	0.00%
9	3102	Mineral or chemical fertilizers, nitrogenous	2,341.0	0.05%	17,233.5	0.16%
10	7326	Articles of iron or steel, nesoi	2,166.3	0.05%	15,672.7	0.14%
11	8904	Tugs and pusher craft (Ships and Boats)	1,979.2	0.04%	273.0	0.00%
12	8481	Taps, cocks, valves etc for pipes, tanks etc, pts	1,006.4	0.02%	11.9	0.00%
13	8705	Special purpose motor vehicles nesoi	990.5	0.02%	108.2	0.00%
14	8413	Pumps for liquids, liquid elevators, parts thereof	935.2	0.02%	238.0	0.00%
15	8901	Vessels for the transport of persons or goods	801.1	0.02%	496.0	0.00%
16	8483	Transmission shafts, bearings, gears etc, parts	782.3	0.02%	655.0	0.01%
17	2814	Ammonia, anhydrous or in aqueous solution (Inorganic chemicals)	758.5	0.02%	5,886.7	0.05%
18	9406	Prefabricated buildings (Furniture, bedding, etc.)	625.1	0.01%	38.1	0.00%
19	8207	Interchange tools for hand- or machine-tools, bmpt (Tools, spoons, etc.)	577.3	0.01%	17.0	0.00%
20	7307	Tube or pipe fittings, of iron or steel	508.7	0.01%	90.7	0.00%
		Sub-total (1-20)	4,409,585.4	99.78%	10,893,922.0	99.94%
		Others	9,545.0	0.22%	7,000.2	0.06%
		Total	4,419,130.5	100.00%	10,900,922.2	100.00%

Source: ibid.

Major import commodities in 2006 were also crude oil, vessels for transport, tubes and pipes, iron and steel, parts for machinery, electric generating sets and so on as shown in Table 3.21.

It should be noted that import of crude oil keeps large shares in both monetary and physical terms.

According to the customs office, this is only for economic reason. The Russian oil companies make efforts to promote crude oil exports to Kazakhstan since the export tariff for crude oil, which is usually US$240/t, is not charged by the Russian Government for export to CIS countries and, thus, a large profit margin is expected.

Table 3.21 Imports in Mangistau Oblast by Commodity/Product in 2006

No	HC Code	Name of commodity/product	Monetary term (US$1,000)	Share (%)	Weight (ton)	Share (%)
1	2709	Crude oil from petroleum and bituminous minerals	1,090,605.7	48.04%	4,234,966.0	89.27%
2	8901	Vessels for the transport of persons or goods	107,312.4	4.73%	39,446.2	0.83%
3	7304	Tubes, pipes etc, seamless, iron nesoi & steel	100,306.9	4.42%	55,585.5	1.17%
4	8431	Parts for machinery of headings 8425 to 8430	49,072.0	2.16%	3,687.8	0.08%
5	8502	Electric generating sets and rotary converters	46,995.6	2.07%	1,826.8	0.04%
6	8413	Pumps for liquids, liquid elevators, parts thereof	43,004.8	1.89%	6,050.8	0.13%
7	8906	Vessels nesoi incl warship/lifeboat ex row boats	42,355.3	1.87%	4,075.9	0.09%
8	8904	Tugs and pusher craft (ships/boats)	41,020.7	1.81%	12,684.1	0.27%
9	7308	Structures nesoi & parts thereof, of iron or steel	36,465.3	1.61%	16,420.3	0.35%
10	2710	Oil (not crude) from petrol & bitum mineral etc,	30,440.2	1.34%	39,115.4	0.82%
11	8430	Mach nesoi, moving, grad etc, pile-dr, snowplow etc (machinery)	29,753.0	1.31%	3,829.9	0.08%
12	9015	Survey, hydrogr, meteoro etc inst, rangef etc, pts	27,837.2	1.23%	162.1	0.00%
13	8703	Motor cars & vehicles for transporting persons	24,940.1	1.10%	4,180.1	0.09%
14	3811	Antiknock preps & other additives for mineral oils (chemical product)	24,196.5	1.07%	6,256.7	0.13%
15	8705	Special purpose motor vehicles nesoi	21,570.2	0.95%	3,477.4	0.07%
16	8704	Motor vehicles for transport of goods	20,712.2	0.91%	5,981.5	0.13%
17	8481	Taps, cocks, valves etc for pipes, tanks etc, pts	19,372.6	0.85%	1,330.0	0.03%
18	3917	Tubes, pipes & hoses & their fittings, of plastics	17,959.6	0.79%	3,259.0	0.07%
19	7326	Articles of iron or steel, nesoi	14,934.5	0.66%	1,516.6	0.03%
20	8421	Centrifuges, filter etc mach for liquid or gases, pts (machinery)	14,527.4	0.64%	1,459.3	0.03%
		Subtotal (1-20)	1,803,382.0	79.44%	4,445,311.1	93.70%
		Others	466,724.5	20.56%	298,893.4	6.30%
		Total	2,270,106.5	100.00%	4,744,204.5	100.00%

Source: ibid.

3.3 Spatial Development Structure and Mangistau's Position

3.3.1 Characteristics of macro regions

The territory of Kazakhstan is spatially divided into three macro regions; that is, North, South and West regions. These macro regions are further divided into seven sub-regions as depicted in Figure 3.7.

(1) Basic spatial economic structure of Kazakhstan

Only one seventh of the total population resides in the West Region, while other regions are inhabited more or less evenly. Although the amounts of GRDP were almost equal among three regions, economic activities of the West Region are significantly behind compared to other regions, except for the mining sector. The considerably low agricultural production and the extraordinarily high mining sector gross production against the small population share are the key characteristics of the West Region. Agricultural production is nearly the same in the North and South regions. The North Region is advantageous in processing industry, while the South Region, especially its Syr Dariya sub-region, is weak in this sub sector. The commerce sector is dominated by the city of Almaty that is at the top of the country's commercial hierarchy. The performance of the

Western Region is backward in the commerce sector, but its service sector gross production is on a par with GRDP interestingly.

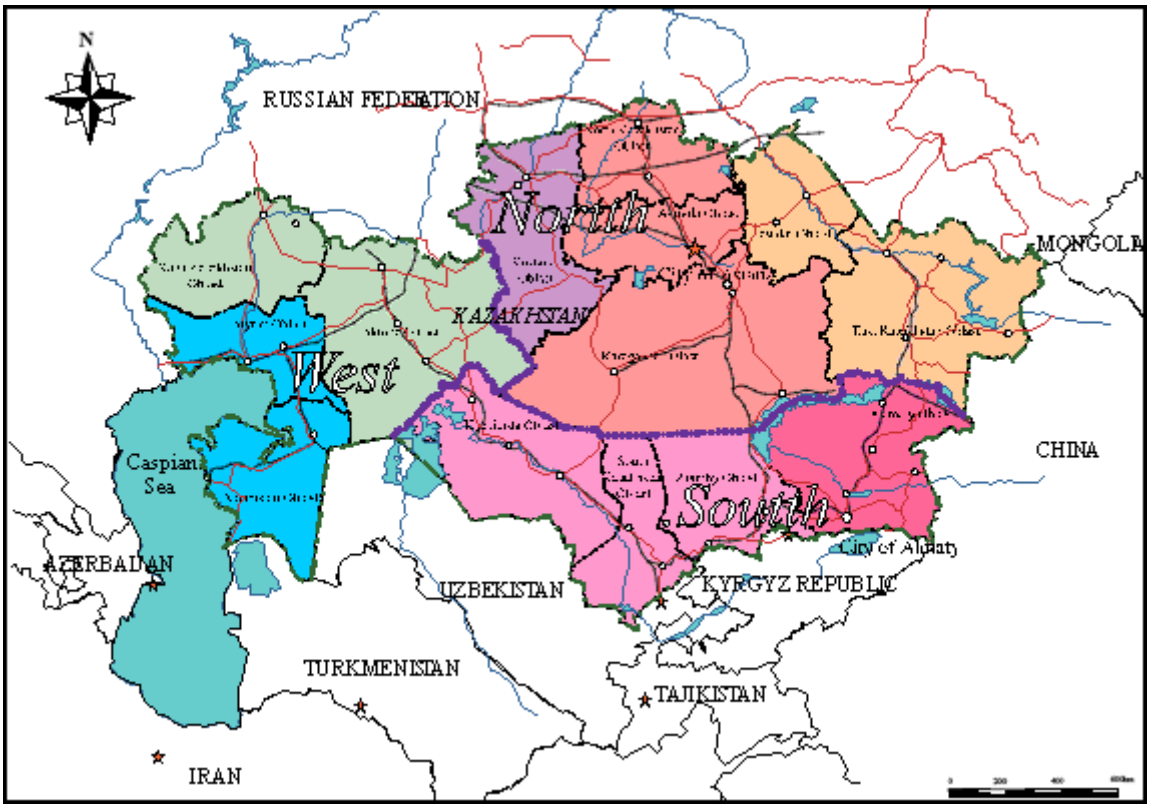


Figure 3.7 Definition of Macro and Sub Regions in Kazakhstan

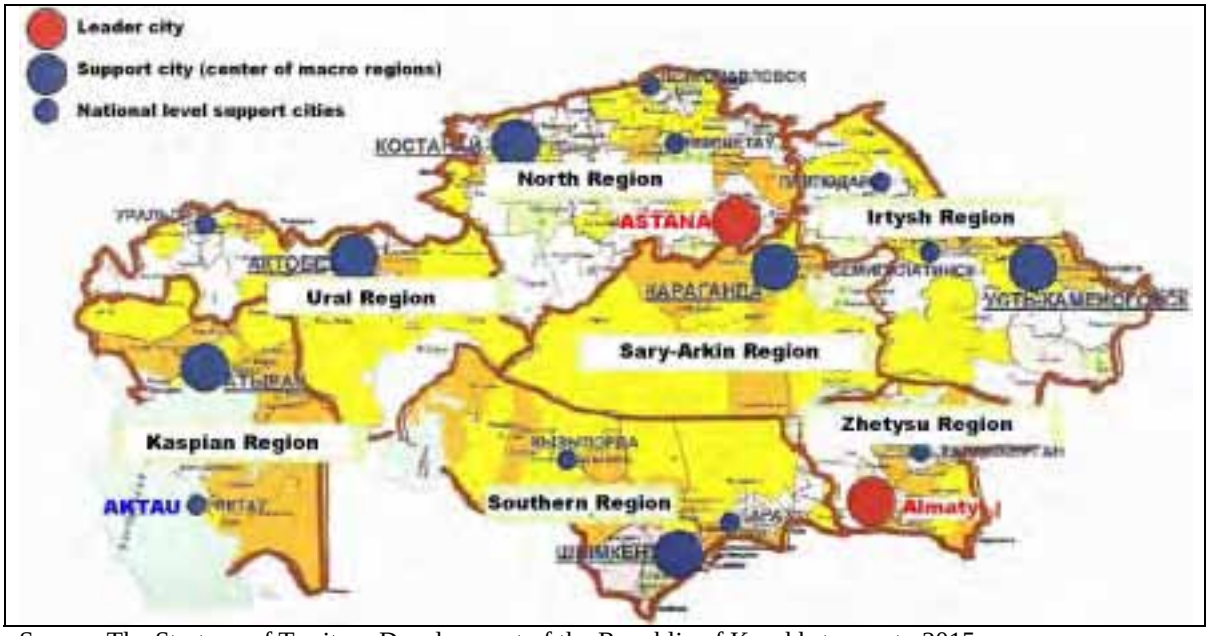
(2) Urban hierarchy

The Strategy of Territory Development of the Republic of Kazakhstan up to 2015 stipulates the planned urban hierarchy in the Country as shown in Figure 3.8. In the West Region, the status of "the center of sub-region" was given to the cities of Aktobe and Atyrau. Aktau, along with the Ural city of the West-Kazakhstan oblast, is designated as the third position, which is defined as "the national level support city".

3.3.2 Position in international and national transport systems

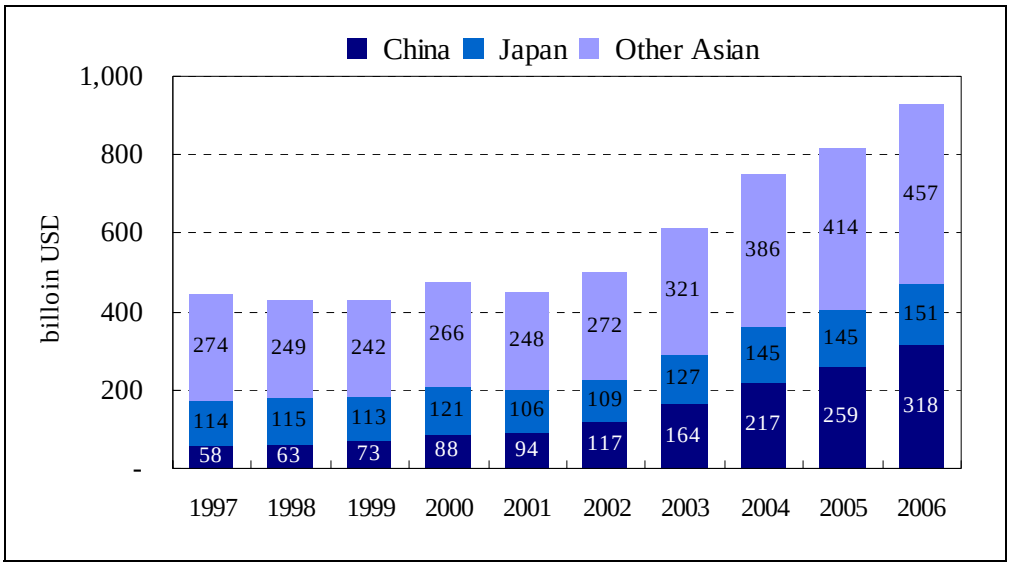
(1) International artery transport system

The trade between Asia and EU countries has been increasing steadily in recent years (Figure 3.9). It increased from US$475 billion in 2000 to US$926 billion at the average annual rate of 12%. Most trade is carried out by marine transportation as the least cost means, although it takes much longer than land based transportation. For instance, it takes about 40 days on an average from the Chinese port of Lianyungang to Berlin. It is said that the transport by railway can reduce the travel time by 11 days.



Source: The Strategy of Territory Development of the Republic of Kazakhstan up to 2015

Figure 3.8 Future Urban Hierarchy System According to the Strategy of Territory Development of the Republic of Kazakhstan up to 2015



Source: International trade statistics

Figure 3.9 Merchandise Trade between Asia and EU

Main trans-continental transport corridors are the trans-Asian railways and the TRACECA corridors comprising roads and railways crossing Kazakhstan, Uzbekistan and Turkmenistan (Figure 3.10). The TRACECA corridor north passes through Kazakhstan from Dostyk near the

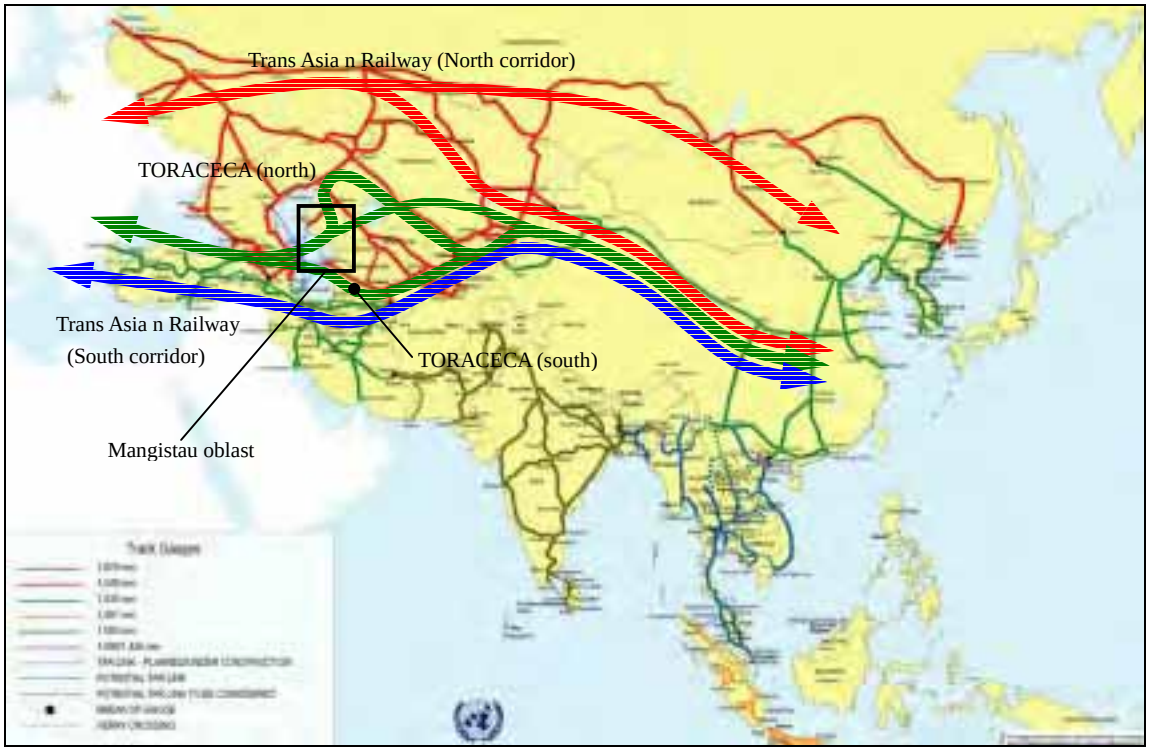


Figure 3.10 International Corridor from Asia to EU

Chinese border to Baku in Azerbaijan, and the TRACECA south passes through Uzbekistan and Turkmenistan to connect to Baku from Turkmenbashi. Both corridors are supported by roads and railways going side by side. The service level of the TRACECA north railway sections in the western Kazakhstan is low and the distance longer due to meandering alignments. A new rail link between Shalkar and Beineu has been planned, which will reduce the distance by some 700km.

Road sections of the TRACECA north are also planned and partly implemented. The improvement of the Atyrau-Beineu section is under construction in Mangistau Oblast. Another section in Mangistau between Beineu and Sayutes is also unpaved. The TRACECA north is considered advantageous as it passes through only one country and involves only one transit fee.

There exist the Central Asian corridor connecting EU and Russia to Central Asia and the north-south corridor connecting the Persian Gulf to EU and Russia (Figure 3.11). The north-south corridor connects the Indian Ocean and the Persian Gulf to Russia and EU through Kazakhstan, which provide a partial alternative to the TRACECA north corridor.

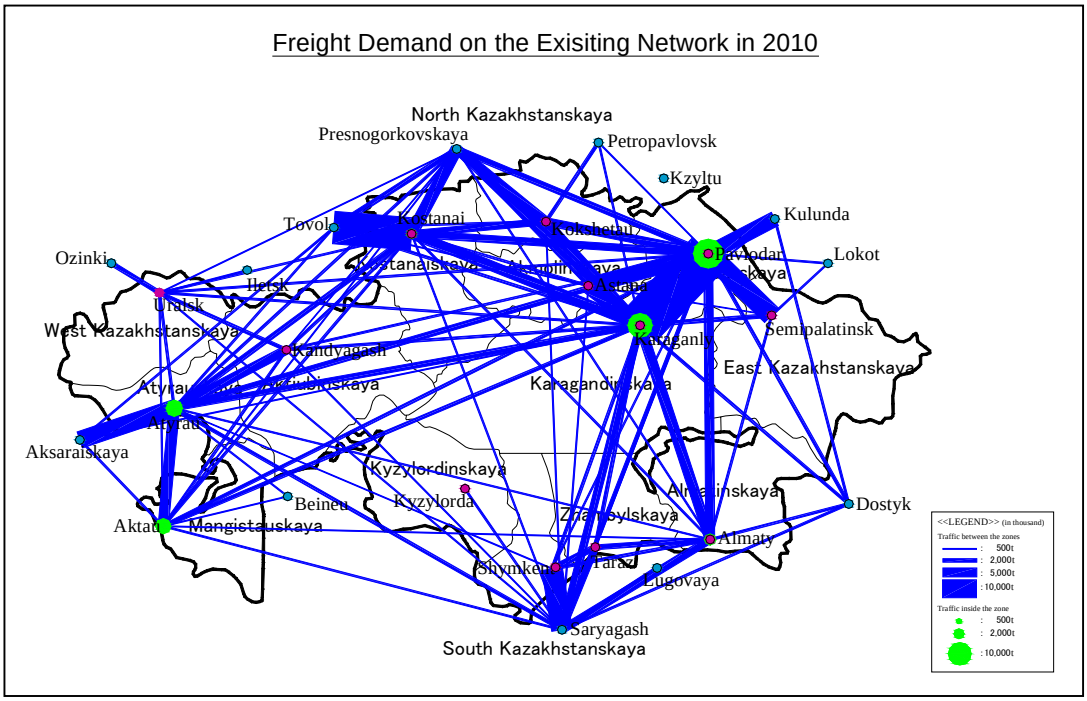
The railway from Shimkent to Russia through Kandyagash is a major national corridor. The railway from Mangistau to Uzbekistan is not functioning as part of the Central Asian corridor. No rail link exists between Kazakhstan and Turkmenistan, but the construction of a new railway connecting Russia and Iran through Mangistau in Kazakhstan and Turkmenistan from the section in Turkmenistan is expected.

(2) National transport system

As shown in Figure 3.12, there are four major trade gateways in Kazakhstan: Pavlodar, Kostanai, Atyrau, and Simkent. These gateways are not well connected each other and thus economy of the Country is rather separated to these four gateways with industrial cores situated in their respective catchment areas. This is one of the major causes of the current trade structure of Kazakhstan, characterized by the fact that the same goods and commodities are exported to and imported from

the same trade partner, especially Russia.

Figure 3.11 Railway Planning around Caspian Sea



Source: Interim Report, Study for The Project of the Integrated Logistics System and Marketing Action Plan for Container Transportation

Figure 3.12 Freight Demand on the Existing Network, 2010

Currently Mangistau is well connected to northern regions including Atyrau and Kostanai, by both railways and motor roads. Regarding the connection to the southern regions including Shimkent and Almaty, it is necessary to take a roundabout way up to the north, but after reaching Kandyalash,

the route heads to Shimkent and Almaty almost directly. The eastward route has not established yet, and thus the access to central and eastern parts of the Country is very inconvenient.

In the Strategy of Territory Development of the Republic of Kazakhstan up to 2015, the east-west connection was planned as depicted in Figure 3.13. Once the east-west railway connection is established, the nature of commodity flow might be significantly changed by improved cost and time efficiency. If the change involves the flow of raw materials, effects to the manufacturing industry in the West Region may be significant.

Source: The Strategy of Territory Development of the Republic of Kazakhstan up to 2015

Figure 3.13 Railway System Development Plan in the Strategy of Territory Development of the Republic of Kazakhstan up to 2015

3.4 Mangistau's Position and Prospects in the Surrounding Regional Context

3.4.1 Size of socio-economies in the surrounding countries/regions

In this section, the size of socio-economies in the surrounding countries and regions centering on Mangistau Oblast (referred to as the surrounding zone) is described from the macroscopic viewpoint. The surrounding zone, which extends east and west, is comprised of Belarus, Ukraine, large part of the Russian Federation, Caucasian countries, Central Asian countries and Xinjiang Uyghur Autonomous Region in China. Basic socio-economic data for these countries and regions are shown in Table 3.22.

According to the data in Table 3.22, the total land area, population and combined gross domestic product (GDP) of this zone amounted to 13.2 million km^2, 269 million and US$791 billion, respectively in 2005.

As for the population, a total of several economic regions in Russia has the largest share at 44%, followed by Ukraine (18%), Uzbekistan (10%) and Xinjiang Uyghur Autonomous Region (7%). Regarding the GDP, a total of the Russian economic regions accounts for a dominant 68% share, followed by Ukraine (11%), Kazakhstan (7%), Belarus (4%) and Xinjiang Uyghur Region (3%).

Table 3.22 Socio-economic Indicators in Surrounding Countries/Regions (2005)

	Area ($000km^2$)	Population (000 persons)	Pop. density ($/km^2$)	GDP (US10^9$)
Total of Surrounding Countries/Region	**13224**	**269210**	**20.4**	**791.2**
Kazakhstan (Total)	2725	15219	5.6	57.1
Total of western part of Kazakhstan	736	2143	2.9	15.9
Mangistau Oblast	166	374	2.3	3.2
Atyrau Oblast	119	472	4.0	6.4
Aktobe Oblast	301	687	2.3	2.9
West Kazakhstan Oblast	151	609	4.0	3.4
Xinjiang Uyghur Autonomous Region, Chi	1660	19631	11.8	26.6
Part of Russian Federation (Total)	6564	118859	18.1	539.9
Central Economic Region	483	29948	62.1	175.9
Central Black Soil Economic Region	168	7270	43.3	22.3
North Economic Region	1477	5033	3.4	27.4
North Caucasia Economic Region	355	18876	53.2	36.7
Volga Economic Region	540	16153	29.9	65.0
Volga-Vyatka Economic Region	265	7649	28.9	20.9
Ural Economic Region	823	19331	23.5	69.3
West Siberia Economic Region	2454	14600	5.9	122.3
Azerbaijan	87	8400	97.0	13.2
Georgia	70	4500	64.6	6.4
Armenia	30	3000	100.7	4.9
Ukraine	604	47100	78.0	86.1
Belarus	208	9800	47.2	29.6
Kyrgyz Republic	200	5100	25.5	2.5
Tajikistan	143	6600	45.6	2.3
Turkmenistan	488	4800	9.8	8.1
Uzbekistan	447	26200	58.6	14.6

Sources: JICA Study Team based on official statistical sites in World Bank and realted countries.
Note: Figures of GDP in economic regions of Russian Federation are estimated.

The size of economy in the surrounding zone is almost equivalent to that of MERCOSUR, an economic block in South America, which started in 1995 as a custom union and consists of Brazil, Argentina, Uruguay and Paraguay. The ultimate objective of MERCOSUR is to formulate a common market that allows free movement not only of trade, but also of production factors such as capital and labor. In 2005, the total land area and population of MERCOSUR amounted to 11.9 million km^2 and about 234 million, respectively. The combined GDP is about US$1.09 trillion.

3.4.2 Accumulation of industries in the surrounding countries/regions

This section focuses on accumulation of industries or clusters in the surrounding zone. Although a wide range of industries is located in the zone as shown in Table 3.23, the following features by industrial sector are seen.

(1) Oil and gas production and processing

Some countries such as Azerbaijan and Turkmenistan or Caspian Sea Rim countries, and western part in Kazakhstan are predominant in oil and gas production and processing. Economic regions such as Volga, Ural and West Siberia in Russia and Xinjiang Uyghur Autonomous Region in China share the similar feature. In terms of the gross domestic or regional production, this sector plays an important role in the surrounding zone.

(2) Iron and steel industry

Iron and steel industry is located in several economic regions in Russia, Ukraine and Kazakhstan.

At Lipetsk in Central Black Soil Economic Region, Novolipetsk Steel, one of the four largest steel companies in Russia, is located. Kiev in Ukraine is known for iron and steel industry and chemical industry. Karaganda in Kazakhstan is a major industrial center, which produces ferrous metal, cast iron and steel.

Table 3.23 Major Industries Accumulated by Region and Major Cities

Countries/Regions	Major industries	Major Cities
Western part of Kazakhstan		
Mangistau Oblast	Oil and gas production	Aktau, Zhanaozen
Atyrau Oblast	Oil production and processing with the Atyrau Refinery; building material; fish industry (sturgeon product)	Atyrau
Aktobe Oblast	Oil and gas production; ferrous metallurgy; food industry; livestock production	Aktobe
West Kazakhstan Oblast	Oil, condensate and gas production; agricultural machinery; food industry	Oral
Xinjiang Uyghur Autonomous Region, China	Oil and gas production; agriculture (fruits, cotton, wheat, silk, walnuts, etc.) and live stock	Urumqi, Karamay
Part of Russian Federation (Economic Regions)		
Central	Interlinked manufacturing industries; agriculture (crop) and livestock	Moscow, Ryazan
Central Black Soil	Iron-ore mining; ferrous metallurgy; machinery; chemical industries; agriculture (wheat) and livestock	Lipetsk, Voronezh, Kursk
North	Oil and gas production; mining (apatite, iron, nickel, titanium); machinery; wood processing; paper and pulp industries; chemical industries; livestock	Arkhangelsk, Vologda, Murmansk, Petrozavodsk
North Caucasia	Machinery; metal processing; gas and oil production; mining (coal, tungsten, molybdenum); agriculture (crop, vegetable, fruits) and livestock	Rostov-on Don, Nalchik
Volga	Machinery; oil production and processing; chemical industries; agriculture (crop) and livestock	Astrakhan, Volgograd, Samara, Kazan
Volga-Vyatka	Machinery; metal processing; wood processing; paper and pulp industries; chemical industries; livestock	Vyatka, Nizhriy-Novogorod
Ural	Iron, copper, nickel metallurgy; machinery; chemical industries; oil-chemical industries; oil and gas production & processing; wood processing; livestock	Yekaterinburg, Kurgan, Chelyabinsk, Omsk
West Siberia	Oil and gas production; iron, mercury, gold metallurgy; machinery; wood processing; paper and pulp industries; chemical industries; agriculture (wheat) and livestock	Novosibirsk, Tomsk, Mansiysk, Tyumen
Azerbaijan	Oil and gas production; mining (iron, copper, titanium, chromium, etc.); food industry; fishing industry	Baku
Georgia	Agriculture and food industry; tourism and service industries	Tbilisi
Armenia	Processed food; synthetic rubber; textile; precious stone processing and jewelry making; machinery	Yerevan
Ukraine	Steel; machinery; transportation vehicles including shipbuilding; agriculture	Kiev, Sevastopol
Belarus	Machinery; electronics; food industry; textile; wood processing	Minsk, Gomel
Kyrgyz Republic	Agriculture and livestock; mining (gold, etc.); metallurgy	Bishkek, Osh
Tajikistan	Agriculture (cotton); production of aluminum	Dushanbe
Turkmenistan	Oil and gas production; agriculture (cotton) and live stock	Ashgabat, Turkmenbasy
Uzbekistan	Agriculture (cotton); oil and gas production, mining (coal, copper, gold, silver, uranium, etc.)	Tashkent, Bukhara, Samarqand

Sources: JICA Study Team based on various websites, reports and materials.

(3) Machinery and chemical industry

An accumulation of machinery and chemical industries on a large scale is mainly seen in economic

regions in Russia, Belarus and Ukraine. Chelyabinsk in Ural Economic Region, for example, is one of the major centers of heavy industry, especially metallurgy and machinery. The Chelyabinsk metallurgical complex, Chelyabinsk tractor plant and Chelyabinsk electrode plant are located there. Volgograd in Volga economic region is an important industrial city encompassing manufacture of machinery, oil refining, chemical production, shipbuilding, steel and aluminum production, and vehicles. Also, Samara in Volga economic region is known for chemicals, oil and gas, machinery, and confectionery (Nestlé) industries. Minsk in Belarus is a major production site for trucks, tractors, gears, optical equipment, electrical appliance, bicycles and motorcycles.

3.4.3 Current and future macroscopic products flow in the surrounding zone

This section focuses on macroscopic flow of products in the surrounding zone based on trade data among CIS countries, although they are not exactly accorded with the zone. China is not included since Xinjiang Uyghur Autonomous Region is small part of the entire China.

The first part shows the features of trade among CIS countries. The second part provides an analysis of trade specification index. Finally, the third part describes the future macroscopic flow of products.

(1) Features of trade among CIS countries

The volume and shares of trade in 2006 among CIS countries by destination or origin are shown in Table 3.24. It should be noticed from the table that the transaction among CIS countries except Russia is rather small.

As for exports, the shares of transaction among CIS countries are less than or around 10 % except Georgia and Kyrgyzstan, and the shares of trade through other countries is more than 50 % for all CIS countries. The trade with Russia shows shares ranging widely in 1-35 %. This comes from historical and functional allocation of industries in the former Soviet countries.

Regarding imports, most countries except Tajikistan, Georgia and Kyrgyzstan hold less than 15 % shares among CIS countries and more than 50 % shares through other countries. The shares of imports to Russia varied among CIS countries from 4 to 59 %. The share of Kazakhstan at 38 % is rather high among CIS countries.

On the trade balance, countries that export oil and mineral products such as Azerbaijan, Kazakhstan, Russia, Turkmenistan and Uzbekistan show surplus in total. All the countries except Uzbekistan show trade deficits with Russia.

(2) Analysis by trade specification index

The preceding section just shows the trade volume and direction among CIS countries, but does not show the flow of specific products and structure of trade. In order to clarify flow of products, the trade specification index is calculated. This index is defined as follows: (Export – Import) / (Export + Import).

Here, export means that total export amount (monetary terms) of specific product from a country (reporter) to the world (partner) and import means that total import of specific product from the world to a country. Thus, if the index = 1, the product is totally exported. If the index = 0, the product is equally exported and imported. If the index = -1, the product is totally imported.

Table 3.24 Volume and Shares of the CIS and Other Countries of the World in Total Exports and Imports (2006)

	Total	*Russia*	*CIS countries (except Russia)*	*Other countries*	*Total*	*Russia*	*CIS countries (except Russia)*	*Other countries*
	Exports (US$10^6)				*Exports (%)*			
Azerbaijan	6372	259	671	5442	100	4.1	10.5	85.4
Armenia	985	103	109	773	100	10.5	11.1	78.5
Belarus	19734	6850	1759	11125	100	34.7	8.9	56.4
Georgia	993	68	327	598	100	6.9	32.9	60.2
Kazakhstan	38250	3839	1735	32676	100	10.0	4.5	85.4
Kyrgyzstan	794	194	185	415	100	24.4	23.3	52.3
Moldova	1052	323	101	628	100	30.7	9.6	59.7
Russia	302000	-	42285	259715	100	-	14.0	86.0
Tajikistan	1399	125	61	1213	100	8.9	4.4	86.7
Trukumenistan	7581	79	N/A	7502	100	1.0	N/A	99.0
Uzbekistan	6605	1289	N/A	5316	100	19.5	N/A	80.5
Ukraine	38368	9218	3446	25704	100	24.0	9.0	67.0
	Imports (US10^6)				*Imports (%)*			
Azerbaijan	5268	1375	723	3170	100	26.1	13.7	60.2
Armenia	2192	392	304	1496	100	17.9	13.9	68.2
Belarus	22351	13084	1428	7839	100	58.5	6.4	35.1
Georgia	3681	570	834	2277	100	15.5	22.7	61.9
Kazakhstan	23677	8969	2095	12613	100	37.9	8.8	53.3
Kyrgyzstan	1718	560	431	727	100	32.6	25.1	42.3
Moldova	2693	664	357	1672	100	24.7	13.3	62.1
Russia	137500	-	22348	115152	100	-	16.3	83.7
Tajikistan	1725	377	723	625	100	21.9	41.9	36.2
Turkumenistan	5681	229	N/A	5452	100	4.0	N/A	96.0
Uzbekistan	4696	1086	N/A	3610	100	23.1	N/A	76.9
Ukraine	45039	14979	5206	24854	100	33.3	11.6	55.2
	Balance (US10^6)							
Azerbaijan	1104	-1116	-52	2272				
Armenia	-1207	-289	-195	-723				
Belarus	-2617	-6234	331	3286				
Georgia	-2688	-502	-507	-1679				
Kazakhstan	14573	-5130	-360	20063				
Kyrgyzstan	-924	-366	-246	-312				
Moldova	-1641	-341	-256	-1044				
Russia	164500	-	19937	144563				
Tajikistan	-326	-252	-662	588				
Turkumenistan	1900	-150	N/A	2050				
Uzbekistan	1909	203	N/A	1706				
Ukraine	-6671	-5761	-1760	850				

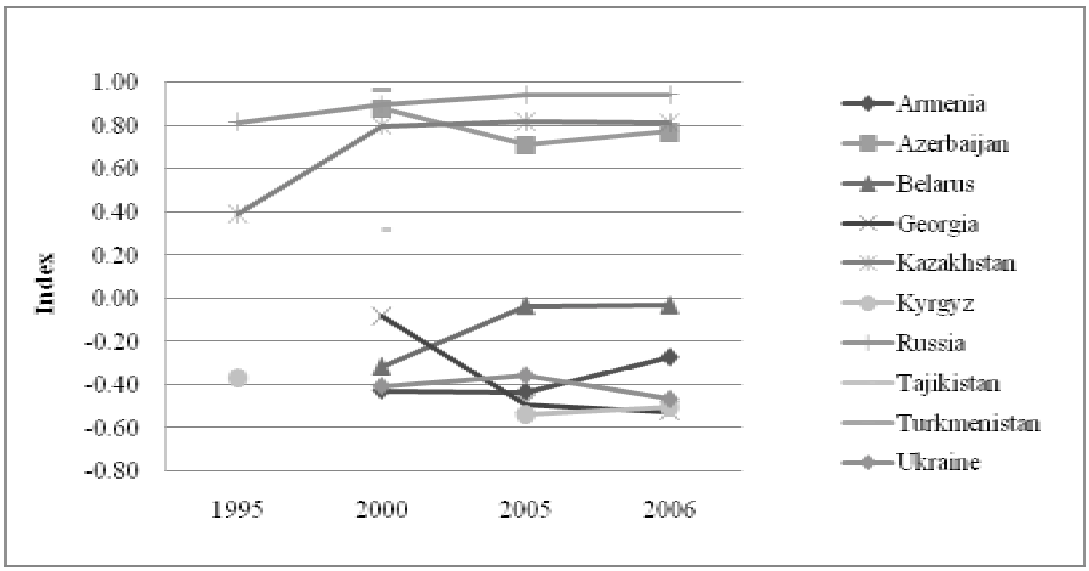
Source: JICA Study Team based on data from Interstate Statistical Committee of the CIS, Federal State Statistics Service of Russia and World Bank
Note: As for Turkmenistan and Uzbekistan, data on export/import to CIS coutries (except Russia) is not specified.

In other words, if the index is near 1 or near -1, the structure of trade shows a vertical specialization; the products of a sector are on a one-way transaction. If they are near or around zero, it shows a horizontal specialization; the products of a sector are transacted mutually among other countries. Generally the latter is regarded as a more developed style of trade. The result is shown

through Figures 3.14 to 3.17 by broad-based type of production such as fuel and mineral product, iron and steel, chemicals, and machinery and transport equipment.

Fuel and mineral product

Exporting countries and importing countries are clearly divided. Four countries such as Russia, Kazakhstan, Azerbaijan and Turkmenistan show positive indexes at around 0.8. Other countries are slightly positive or negative.

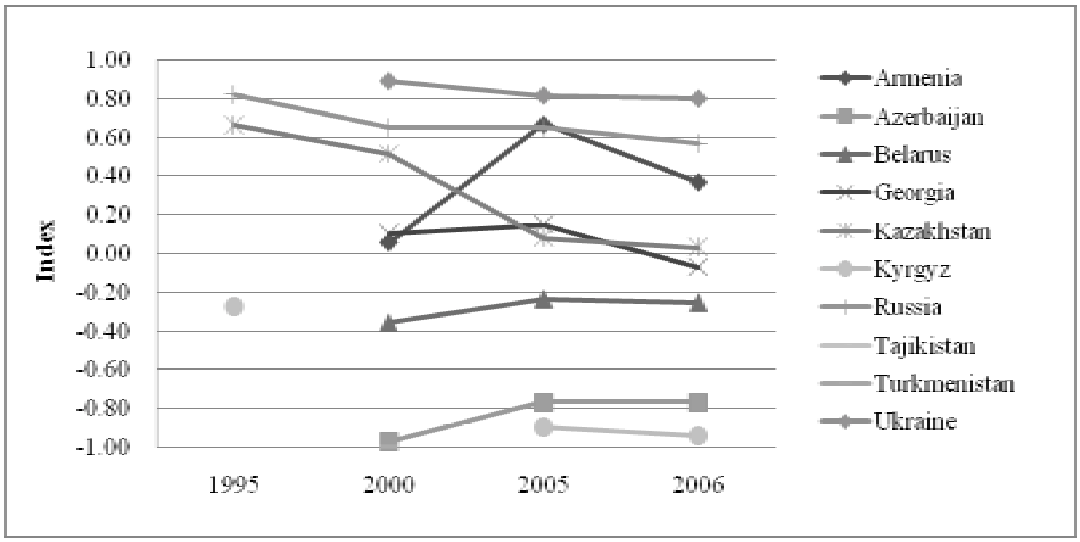


Source: JICA Study Team based on Statistics Database of World Trade Organization

Figure 3.14 Change of Trade Specification Index for Fuel and Mining Products

Iron and steel

There are three groups identified in 2006. The first group consists of Ukraine, Russia and Armenia, which are between indexes of 0.4 and 0.8. The second one comprises Kazakhstan, Georgia and Belarus, having the index around zero. They are almost transacted horizontally. The third one comprises Azerbaijan and Kyrgyz. They imported iron and steel more than exported.

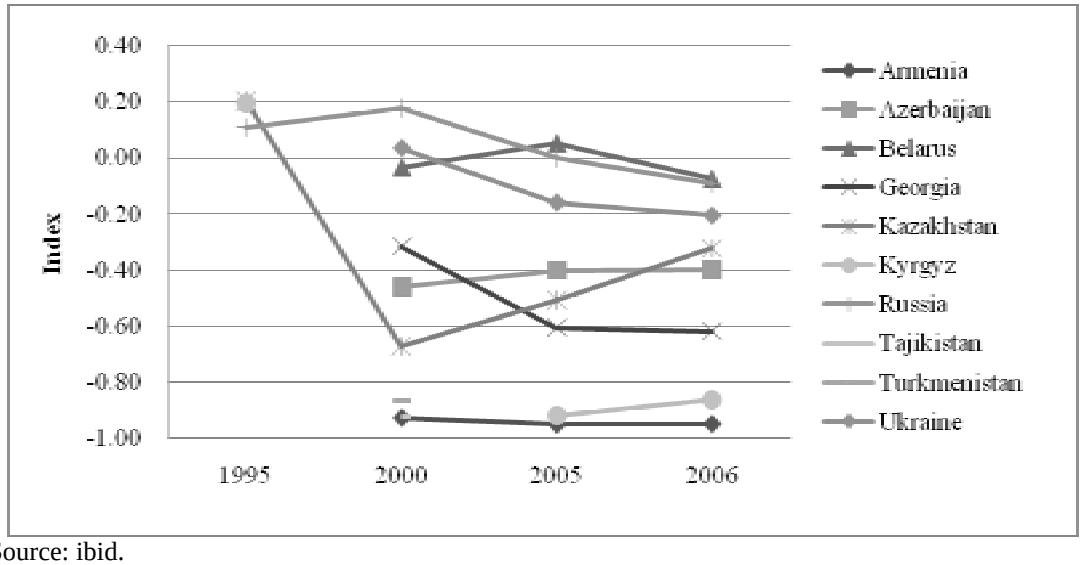


Source: ibid.

Figure 3.15 Change of Trade Specification Index for Iron and Steel

Chemicals

In 2006, Belarus, Russia and Ukraine had the index value around zero. They are transacted horizontally. Other countries are between -0.32 and -0.95. Indexes of chemicals are on a downward trend since imports have been increased rapidly in this decade.

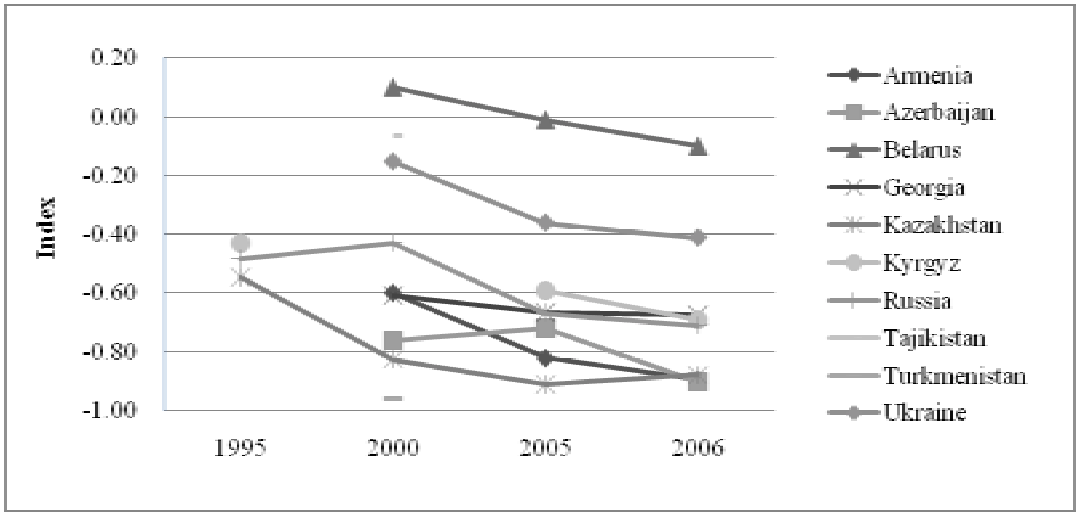


Source: ibid.

Figure 3.16 Change of Trade Specification Index for Chemicals

Machinery and transport equipment

In 2006, only Belarus has the index near zero. All other countries are between -0.41 and -0.90. Same as chemicals, indexes of machinery and transport equipment are on a downward trend since imports have been increased in this decade.



Source: ibid.

Figure 3.17 Change of Trade Specification Index for Machinery and Transport Equipment

In conclusion, the trade structure of CIS countries or the surrounding zone is not horizontal, but rather vertical based on the analysis of trade specification index by iron and steel, chemicals, and machinery and transport equipment. Fuel and mineral products usually show the vertical specialization since resources are unevenly allocated.

(3) Future macroscopic products flow

Another JICA study analyzed the international transport corridors in terms of the trans-Kazakhstan route as shown in Table 3.25. According to this table, from East Asia to Central Asia or Caucasian countries, the Aktau route and the Turkmenistan route within the TRACECA Routes are competitive each other or advantageous compared to other routes. On the other hand, in the North-South route (from Russia to Iran), the Aktau route is competitive with the Astrakhan route.

These situations indicate that the future flow of products in the surrounding zone, especially transit cargo or container cargo from East Asia (China in particular) to Europe, will increase in the medium and long-term perspective as the cost and transit/lead time are reduced, although the routes are still underdeveloped and not fully functioned in terms of management, coordination and infrastructure.

Consequently, in terms of trade or flow of products, two directions may be seen for the development in the future in the surrounding zone. The first one is that transaction of products (raw materials, intermediate materials and final products) will be activated and trade structure in the zone will be more driven to the pattern of vertical specialization since they imports more from China, Russia, European countries or Turkey.

The second one is that countries and regions in the surrounding zone may head in the direction for regional economic integration to promote more balanced economic structure in accordance with the development of industries and institutional arrangements such as cross border trade agreements. Then, transaction or flow of products within the zone will increase. Establishment of Economic Union of the CIS and Eurasian Economic Commonwealth (EurAses) are along this direction, although the integration has not been fully deepened. Experiences in exiting economic blocs show that the first direction appears in the initial stage, and the second one comes in the next stage.

Table 3.25 Results of Comparative Analysis of International Transport Corridors in Terms of Strengths of the Trans-Kazakhstan Route

	Japan/ Korea	China (Coast)	China (Inland)	West Europe	East Europe	Russia	Iran	Caucasus	Central Asia
Japan/ Korea	N/A	N/A	N/A	Water	Water T-Siberian	T-Siberian	Water	T-Aktau T-Turkmen	TRACECA
	China (Coast)	N/A	N/A	Water	Water T-Asian T-Siberian	T-Asian T-Siberian	Water T-Aktau T-Sarakhs	T-Aktau T-Turkmen	TRACECA
		China (Inland)	N/A	Water T-Asian	T-Asian	T-Asian	T-Aktau T-Sarakhs	T-Aktau T-Turkmen	TRACECA
			West Europe	N/A	N/A	N/A	N/A	N/A	N/A
				East Europe	N/A	N/A	N/A	N/A	N/A
					Russia	N/A	NS-Aktau NS-Astrakhan	N/A	N/A

Small potential Competitive Advantageous

Source: Final Report on the Study for the Project of the Integrated Logistics System and Marketing Action Plan for Container Transportation, December 2007, JICA
Notes:
1) Water: All Water Route, T-Asian: Trans-Asian Route, T-Siberian: Trans-Siberian Route
2) T-Aktau: TRACECA Aktau Route, T-Sarakhs: TRACECA Sarakhs (Iran) Route, T-Turkmen: TRACECA Turkmen Route, TRACECA: TRACECA All Routes
3) NS Aktau-North-South Aktau Route, NS Astrakhan Route: North South Astrakhan Route

3.4.4 Envisaged potential products and markets for Mangistau Oblast

Based on the discussion in the preceding sections, costs of container cargo or transit cargo in the surrounding zone will decrease in accordance with development of several international routes. However, costs of long-haul transportation of heavy or large cargo or products, which may not be conveyed in ordinary containers, seem to be kept at high levels.

Thus, Mangistau Oblast, utilizing the existing SEZ and Aktau Seaport, may have competitiveness in costs in terms of the products of heavy weight such as machine, steel, chemicals and construction materials. In fact, manufacturers already located in SEZ are producing steel pipes and glass fiber pipes.

A potential market for the products of Mangistau Oblast seems to be Caspian Sea Rim countries. This is because (1) Mangistau Oblast is in proximity to these countries and (2) the Oblast can produce substitutes of the above-mentioned products, which are currently exported from Russia and European countries to these countries.

As for the functional division of industries in the western part of Kazakhstan, Atyrau Oblast may concentrate on chemical industries as oil refinery is located there, while Mangistau Oblast may specialize more in machinery, steel products and construction materials.

CHAPTER 4 DEVELOPMENT DIAGNOSIS BY RAYON OF MANGISTAU

The existing conditions of Mangistau are examined, major constraints to development clarified, and promising prospects are identified by rayon. The rayon of Munajlinsky was newly established, separated from the former Aktau rayon, and the diagnosis is provided for the new rayon as well although the data are limited. Bases of the analysis are readily available study reports and other materials and statistics, and limited hearings from government officials and field observations. An early version prepared during the inception work period was shared by the JICA Study Team members. Also, the development prospects by rayon were discussed at a joint team meeting with the Kazakh experts. Based on their comments and additional information, the diagnosis has been revised.

4.1 Aktau

4.1.1 Existing conditions

(1) Overview

Aktau is located in the middle of the western coast of the Caspian Sea, occupying the land area of 801km^2. The population in Aktau was 187,600 in 2006, and the population density 234.2/km^2. Aktau city, the capital of Mangistau Oblast, was established in 1963, and it has developed rapidly to reach a population of 164,500 by 2006. Two other settlements in Aktau, Mangistau and part of Umirzak have been separated from the city to create a new rayon of Munaylinski in July 2007 together with the villages of Bayandi, Kyzyltobe, Daulet, Atameken and Baskudyk.

The population growth in the Aktau city is rather low in recent years averaging 2.83% per annum during 2002-06, while the neighboring Mangistau settlement increased its population at the average annual rate of 11% over 2002-06. The urbanization ratio has decreased from close to 100% until 2005 to below 90% presumably due to changes in administrative definitions.

The Aktau port, commissioned in 1963 and undergone major re-construction in 1997, has been functioning as the only international port of Kazakhstan since 1991. Main cargoes handled at the port are petroleum exported at 7 million ton in 2006 constituting some 80% of the total cargo volume, dry cargoes of 1.5 million ton, and other commodities including grains of 200,000t exported mainly to Iran. Container cargoes constitute a small portion with 13,000t. Ferry services are available three times a week to Baku. Trains roll on-roll off services are also available. The planning for the port expansion to the north is at advanced stage, and the expansion to the south has been conceived. The port has an inherent constraint due to the water depth of 6m naturally available.

(2) Economy

Despite the small land area, Aktau has the largest cropped area of the six rayons as of 2005, totaling 117ha. This consists of 66ha under vegetables, 59ha under fruits & berries and the rest for grape vines and potatoes. Livestock activities are naturally insignificant in the rayon. The agricultural land in Aktau occupies only 4.3% of the rayon land, of which 71% is pastureland (Table 4.1). The Department of Agriculture of Oblast is promoting fishery development including processing.

Table 4.1 Land Resources in Mangistau Oblast

	Total area		Settlement		Agriculture land						Land reserve					Other	
Rayon	ha	%	ha	%	ha	%	Arable	Hay	Pasture	Other	ha	%	Arable	Hay	Pasture	ha	%
Beineu	4,051,933	24.5	230,940	5.7	276,039	6.8	0	100	268,647	7,292	3,308,671	81.7	4	186	2,344,661	236,283	5.8
Karakiya	6,329,262	38.2	240,741	3.8	3,819,092	60.3	36	0	2,906,921	912,135	1,995,467	31.5	0	0	1,608,979	273,962	4.3
Mangistau	4,789,122	28.9	190,412	4.0	3,447,163	72.0	104	0	3,170,411	276,649	1,096,311	22.9	0	0	434,450	55,236	1.2
Tupkaragan	1,259,596	7.6	33,423	2.7	891,997	70.8	158	0	675,627	216,212	252,426	20.0	0	0	203,289	81,750	6.5
Aktau	80,629	0.5	21,941	27.2	3,438	4.3	113	0	2,454	871	4,408	5.5	0	0	0	50,842	63.1
Zhanaozen	51,549	0.3	9,011	17.5	331	0.6	100	0	13	218	0	0.0	0	0	0	42,207	81.9
Total	16,562,091	100.0	726,468	4.4	8,438,060	50.9	510	100	7,024,072	1,413,377	6,657,283	40.2	4	186	4,591,379	740,280	4.5

Source: Monitoring of rural territory development in Mangistau Oblast. 2006.

The industrial production in Aktau accounts for 61% of the total industrial production in Oblast. Mining, mostly of fuel & energy production, is by far the dominant sub-sector, accounting for 94% of the total industrial production in Aktau in 2006. The manufacturing sub-sector has the most diversified structure, led by electric, electronic and optical equipment, followed by food & beverages, other non-metallic products, and rubber & plastic products. Other smaller sub-sector industries include leather products, chemicals, metallurgy and machinery. Utilities have slightly larger production than manufacturing, led by electricity. The number of active small enterprises is recorded to be 1,312 in 2006, accounting for 88% of the total number in Oblast.

Specific manufacturing industries existing in Aktau include glass-fiber pipes, glass-reinforced plastic pipes, polystyrene (UPM, PSM, PSV), chemical products (coolant, shampoos, detergents etc.), textile & sawing (clothing, bed sheets etc.), leather products (shoes), machinery (pumps, small equipment for oil/gas industries, spare parts etc.), metallurgy, diary & confectionery products, carbonated soft drinks, meat products (sausages), ornamental bricks, wood products (windows, doors etc.), fertilizer, and electrical equipment. There exists a large desalinization plant producing water at 75,000m^3/day together with heat & hot water supply.

According to the employment statistics, of the total employment of 59,760 in 2005, mining employs 15,258 or 25.5% of the total, followed by 8,148 in transport & communications, 7,466 in construction, 5,851 in education, 5,609 in utilities and 5,251 in real estate & renting. Manufacturing has much smaller employment with 2,908. All other service sub-sectors have recorded employment with 2,745 in public administration, 3,582 in health & social works and others.

(3) Social aspects

The population in Aktau as of 2006 consists of 70% Kazakh, 20% Russian, and other ethnic groups constituting the rest. Large in-migration, over 5,000 into the city and over 7,000 into the rayon annually in recent years, has been sustained partly due to the large number of Kazakh returnees. Out-migration is also sustained from the city in recent years but decreasing from the rayon.

The unemployment in Aktau is reported to be 9,054 in 2006. With the total employment of 59,760, the unemployment rate is calculated to be 13.2%. The labor force as the sum of the employment and unemployment, however, corresponds only to 36.7% of the total population, considerably lower than expected for a major city offering large employment opportunities for

residents and job-seeking in-migrants. If the labor force is taken to be 50% of the population, the unemployment is calculated to be 9.7%. The youth unemployment (15-24 years old) is reported to be 3,254.

Aktau dominates the provision of education and health services in Oblast. There exist in Aktau 23 pre-schools out of total 34 in Oblast with 5,700 children or 76% of all the children in pre-schools in Oblast as of 2005. There are 47 general education schools in Aktau, enrolling 40,300 pupils or 45% of the total enrollment in Oblast. In 11 vocational education establishments in Aktau, 13,100 students are enrolled, accounting for 86% of the Oblast total. All the three higher education institutes in Oblast are located in Aktau with 17,700 students in 2005.

Aktau has 72% of physicians and 68% of other medical personnel in Oblast as of 2005. The medical facilities in Aktau consist of 13 out of 33 medical institutes and 30 out of 54 outpatient clinics available in Oblast in 2005.

4.1.2 Constraints

The exclusive reliance on the desalinated water is an inherent weakness of Aktau, making its urban life and economy vulnerable to external conditions. The existing desalinization plant, commissioned in 1963, has been deteriorated to undermine the development potential of the capital area.

Sewage treatment at present is inadequate in Aktau as some of existing capacity is not utilized due to malfunction. Most sewage, some 40,000m^3/day after mechanical and limited biological treatment is sent to an aeration lagoon of Koshkar-Ata near the airport for further decomposition of organic contents. The wastewater effectively covers the radioactive wastes accumulated in the area to prevent the spread of radioactivity by wind. A new sewage treatment facilities project has been formulated, where the re-use of treated sewage is contemplated.

Radioactive wastes from an uranium processing plant has been historically accumulated in the Koshkar-Ata tailing pit. Since 1965, approximately 52 million ton of radioactive wastes with 11,000 curies have been disposed in the pit. The pit will be reclaimed before the new Aktau city is constructed near the area, and monitoring should be conducted for radioactive and other hazardous materials.

Solid wastes management is also considered inadequate. At present, collected solid wastes are disposed by simple landfill without any intermediate treatment. Infrastructure and utilities improvement has not kept pace with the increasing number of Kazakh returnees. In particular, power supply expansion is necessary.

At the bottom of these and other problems is the weak city administration, which at present does not have planning capacity and cannot effectively control construction activities. The new Aktau city has been planned and promoted by the Oblast initiative.

4.1.3 Prospects

With the planned expansion of the Aktau port, its capacity will increase significantly. Due to the inherent constraint of the water depth, however, the port would not be effectively utilized for much increased export of oil from the Kashagan field, which is expected to be handled at the Kuryl port to be expanded. The Aktau port is expected to be specialized more in general cargoes and increasing amount of containerized cargoes.

The expansion of the existing special economic zone (SEZ) is planned. At present, two major industries, glass-fiber and reinforced plastic products and metal pipes, are located in the FEZ, and

several more industries have applied for establishment such as special metal products, electrical cables, transport and logistics, welding rods and galvanized bolts. The planned expansion will establish four zones for an industrial city, export-oriented industries, support industries for oil industries, and transport and logistics center with border trade area as well.

As the transport links are improved with the central part of Kazakhstan, particularly with new railway lines, Aktau is expected to become the trade and distribution center in a much larger geographic context than Mangistau Oblast. This prospect may be realized in steps over medium and long terms. Import processing type industries may establish earlier to process raw materials and intermediate goods imported from the port for domestic market. Some of them would effectively substitute existing industries in the more developed areas of the Country. Development of the import processing type industries may trigger the development of related services to pave the way for more broad-based logistic industry development.

The Aktau city will continue to provide higher order service functions for the entire Oblast. The higher order services include advanced education and research, specialized health care, international conference, communications and tourism, and others. The planned Caspian Sea Institute of Technology and Engineering should be effectively utilized to strengthen the advanced education and research functions to support ICT industries essential for logistic functions, specialized services such as consulting, financial and other business services, and environmental education and research. A separate institute may be established for specializes medical research as well.

The Aktau city with its port and the planned new Aktau city should be specialized in different functions to serve the socio-economic development of Oblast as a whole. The city itself should pursue more service-oriented development, including particularly business services, foreign trade, insurance and finance. The port area should be specialized in logistics function as well as import processing and export-oriented industries. The new Aktau city may be specialized as a financial center and/or high-tech industrial area in international conference, communications and tourism as well as commercial activities and high-end housing.

4.2 Munaylinsky

4.2.1 Existing conditions

(1) Overview

The Munaylinsky rayon was created in July 2007. Its territory covers the settlements of Mangistau, Bayandi, Kyzyltobe and part of Umirzak formerly belonging to the Aktau rayon, and also part of territories of Mangistau, Karakiya and Tupkaragan rayons. The total land area is 4,922km^2, and the total population 52,353 as of December 1st, 2007. The population density is 10.6/km^2.

The population growth is rather high at the average annual rate of 11% over 2002-06 in the Mangistau settlement neighboring on the Aktau city having low population growth averaging 2.83% per annum during 2002-06. This is due primarily to the large number of Kazakh returnees who settled in the area. In fact, this is the main reason why the new rayon was created to deal with the Kazakh returnees

The Munaylinsky rayon consists of the villages of Mangistau and Bayandy, and the rural districts of Kyzyltobe, Daulet, Atameken and Baskudyk. The population as of December 1st, 2007 was 15,466 in Mangistau, 13,581 in Kyzyltobe, 1,159 in Bayandi, 4,257 in Daulet, 12,846 in Atameken and 5,044 in Baskudyk.

(2) Economy

The Munaylinsky rayon is all rural. There are 142 peasant farms in the rayon, engaging in livestock and crop production. The livestock population consists of 7,899 sheep, 669 camels, 235 cattle, 207 horses and 1,487 chickens.

There exist 124 small business entities in Munaylinsky. Of this total, 99 are shops, and others consist of 14 gas stations, five drug stores, five hair dressing salons and a fashion salon.

In the Mangistau village, there are six manufacturing bases, an asphalt plant, and the Kazakhstan Temir Zholy (KTZ) JST with nine enterprises in the field of railway transportation. In the Kyzyltobe village, there are four manufacturing bases of oil and transport agencies and also eight industrial enterprises. In the Daulet village, one transport agency is located. A metalware plant is to be established with the planned production capacity of 7,000t of metalware per year and 200,000m^2 of frame panels annually. In the Atameken village, 15 enterprises are in operation in the fields of power generation, construction and manufacturing.

As of January 1st, 2008 there are 158 legal entities registered with the Munaylinsky rayon. They include four JSC's, 10 state enterprises, 36 state institutions, six public associations, four industrial cooperatives, three consumer cooperatives and 91 companies of limited liability. Most enterprises are engaged in construction, power generation, and services to oil and transport agencies.

(3) Social aspects

The population is about 90% Kazakh. The Munaylinsky is the largest recipient of in-migration of Kazakh returnees, estimated to be over 10,000 in the past year.

The labor statistics of the Munaylinsky rayon are incomplete with only 145 unemployed recorded as of January 1st, 2008 together with 98 employed, 162 sent for public works, and 24 sent for retraining. There are 2,089 pensioners, 1,487 social benefits recipient, and 2,567 special grants recipients in the rayon.

The education institutes in Munaylinsky consist of four general secondary schools with 6,093 pupils, kindergarten with 143 children, one art school and youth sport school. The public health services in the rayon are supported by the Rayon Central Hospital, Rayon Central Clinics, two medical ambulance stations, first aid station and rayon sanitary and epidemiologic service station. The rayon has 110 medical workers, consisting of 35 doctors and 75 medical personnel.

The Council of Oralmans was created under the Akim of Rayon in February 2008, and a Youth Center is planned to be established. There exists a mosque in the Kyzyltobe village, and the Kyzyltobe rural cultural center also exists.

4.2.2 Constraints

The improvement of infrastructure and utilities in Munaylinsky has not kept pace with the rapid increase of population due to the large number of Kazakh returnees. Electrification and gasification have been undertaken for both existing villages and new residential complexes for the new settlers. Water supply systems are developed mainly for existing villages, while new residential complexes rely on water delivery by tank lorries. Road improvement is also undertaken mainly for existing villages for both new construction and repair of existing roads.

These improvement works have been undertaken mostly by the local budget, which is limited as compared to the large and increasing needs. The construction of a high school in the Mangistau village for 1,200 students has been supported by the Republican budget. Enterprises are also

supporting the construction of infrastructure, utilities and high schools as well as residential complexes, but their contributions are constrained naturally by the lack of major enterprises in the rayon.

4.2.3 Prospects

The proximity to the capital city of Aktau is a major advantage of the Munaylinsky rayon with respect to access to various services and job opportunities, proximity to cultural and recreational facilities, and supply extension for water and electricity. Another advantage relates to construction activities due to the availability of construction industries and construction materials. This applies to new residential development and infrastructure improvement such as roads.

The increasing population and the large number of Kazakh returnees represent potential advantage for the development of Munaylinsky. To support the settlement and training of Kazakh returnees, more supports by the Republican budget are expected. The large land area as compared to the Aktau city is an advantage to promote a wide range of economic activities including agriculture. The latter would benefit from the proximity to the large urban market of Aktau.

The Mangistau village has been a center of trade with the main railway station of the western Kazakhstan. KTZ JSC has been operational for many years, and is expected to develop further as the Oblast economy develops.

The Munaylinsky rayon is at the focal point of the Oblast administration for SME development. In particular, a branch of the Atameken Union of Businessmen and Employers will establish an industrial park for SME on the 200ha land supported by the Oblast Akimat. In the park, some 50small enterprises are planned to develop their activities.

4.3 Zhanaozen

4.3.1 Existing conditions

(1) Overview

Zhanaozen occupies largely a plateau area in the central part of Mangistau Oblast. Its land area is 515km^2, the smallest of the six rayons. The population of Zhanaozen was 79,400 in 2006 to make the population density 154.2/km^2. The Zhanaozen city and its neighboring settlement of Tenge have the combined urban population of 74,300 in 2006 to make the urbanization ratio 95%. The population increased particularly in Tenge after 2004 at 6% per annum during 2004-06. The in-migration is large but declining, while the out-migration is increasing in recent years. The in- and out-migration almost balanced in 2006. Some 3,500 Kazakh returnees have settled in Zhanaozen.

Zhanaozen receives water transferred from the Volga river in Russia in about 10,000m^3/day. It is combined with the similar amount of groundwater to supply the city and neighboring areas. The wastewater treatment plant started in 1983 is now in critical conditions, and a new plant is planned. The re-use of treated sewage is contemplated with the new treatment plant.

A general plan was prepared in 2003 for the target year of 2020 and the target population of 100,000. The plan covers the entire rayon, of which 80ha are planned as an urban area including Tenge. The planned population has been almost reached by 2007.

(2) Economy

No crop cultivation was recorded in Zhanaozen until 2005. A new farm was established in the Kyzylsai village in 2006, which covers now 200ha. The area of 20ha is under drip irrigation and the rest under furrow irrigation to produce various vegetables such as potatoes, carrots, cabbages and eggplants, and watermelons. Zhanaozen has the largest poultry population, which is still insignificant. Other livestock population is also small and insignificant. The agricultural land in Zhanaozen occupies only 331ha with negligible pastureland (Table 4.1).

The industrial production in Zhanaozen is the second largest, next to Aktau, and accounts for 37% of the Oblast total in 2005. Mining is by far the dominant sub-sector, accounting for 98.2% of the industrial production. Manufacturing is dominated by refined petroleum products. Other sub-sectors are small and include non-metallic mineral products, machinery, chemicals, food & beverages, textile, and wood products. Specific industries in Zhanaozen include fertilizer, machinery, limestone products, sheep and camel wool blankets, food products and sawing.

Utilities are dominated by water supply, which exceeds the production of the same sub-sector in Aktau. Production of electricity is small as the rayon does not have a power plant. There are only 91 active small establishments in Zhanaozen in 2006, incomparable to Aktau.

Of the total employment of 21,535 in 2005, 12,723 or 59% are engaged in mining, followed by 2,187 in education, 1,699 in real estate & renting, 1,527 in construction, and 1,190 in health. There are also small employments in trade & repair services, hotels & restaurants, transport & communications, and community & social services as well as manufacturing and utilities.

(3) Social aspects

The population in Zhanaozen is mostly Kazakh with a 97% share. There are 1,248 Russians recorded in 2006. Zhanaozen is a net in-migration area with relatively large in- and out-migration, but the difference has been reduced in recent years.

The unemployment is reported to be 1,414 in 2005, of which 1,196 are female. Based on the employment and unemployment data, the unemployment rate is calculated to be 6.2%. The labor force as the sum of the employment and unemployment corresponds only to 28.9% of the total population. Probably, most self-employed are not reflected in the employment statistics. If the labor force is taken to be 45% of the total population, the unemployment rate is calculated to be 4.0%.

Zhanaozen has six pre-schools with 1,400 children as of 2005. It has 19 general education schools enrolled by 21,700 pupils in 2005, corresponding to 27.3% of the total population. More than a few schools have been constructed after 2005. There are four vocational education establishments in Zhanaozen attended by 2,200 students, but no higher education institute exists. The number of physicians per 10,000 population is the second largest in Zhanaozen, next only to Aktau, but the number of other medical personnel per 10,000 is only about the average of the five rayons except Aktau.

4.3.2 Constraints

Zkanaozen relies on the water transferred from the Volga river in Russia. This could be a fundamental constraint to the development of the rayon. As the groundwater reserves are limited, it is desirable to establish alternative sources of water. A new wastewater treatment plant is planned as the existing plant is not functioning properly as mentioned earlier. Use of treated sewage would be an important option to ensure more reliable water supply.

The over-dependence on the fossil fuel based economy would constrain the sustainable development of Zhanaozen just as Oblast as a whole. Recently, irrigated agriculture has been introduced including drip irrigation. So far, the initiative is supported by the akim (mayor) of Zhanaozen in cooperation with Kaztransoil providing the water transferred from Volga, and Kazhagrofinance supporting the investment into irrigation facilities. Marketing of products is undertaken by farmers individually. Weak organization of farmers is a constraint.

A few manufacturing activities have also established recently. Effective support measures are lacking to foster these and other industries due to the weak local administration.

The total of 2.1 million m^3 of oil wastes is generated in Zhanaozen, most of which concentrate in the Uzen oil field. Only limited amount of wastes is used for paving roads in the oil field area, and the rest is accumulating.

4.3.3 Prospects

Irrigated agriculture, resources-based processing industries and related services should be promoted to diversify the rayon's economy together with industries supporting the oil and gas industries. For irrigated agriculture, farmers' organizations should be strengthened for effective procurement, management and marketing. Resources-based processing industries include construction materials, food products, textile & sawing such as sheep and camel wool products, and leather products. These industries as well as machinery and engineering related to the oil and gas industries would induce a wide range of services activities.

Urban development holds a key for developing resources-based processing and support services, and also providing support services for irrigated agriculture. As a prerequisite, water supply capacity needs to be expanded. At present, the water supply of Zhanaozen relies almost equally on the water transfer from the Volga river and local groundwater, providing some 20,000m^3/day water. Both water sources are associated with some uncertainties.

Suppose a total of 15,000m^3/day water can be ensured reliably from these sources on the long-term basis. If the supplied water is fully recycled by using the treated sewage, this firm supply of water may be used only to compensate for the loss due to seepage, evaporation and other. The total loss would be 30% of the amount of water supplied. Thus, a total of some 50,000m^3/day water will be made available. This amount of water can support a population of 200,000 at the unit water use of 250ℓ/capita/day.

With the water supply ensured, Zhanaozen would be developed as the inland base for socio-economic development of Oblast supported by the strong oil and gas industries, high value-added agriculture, viable resource processing industries and increasingly wide range of services. Complementary development of the Aktau and the Zhanaozen cities would be most instrumental for the balanced regional development of Mangistau Oblast.

4.4 Beineu

4.4.1 Existing conditions

(1) Overview

Beineu occupies the northern-most part of Mangistau Oblast with the land area of 40,519km^2. With a population of 37,100 in 2006, the population density is 9.2/km^2. No urban population exists, although the Beineu village has the growing population reaching 23,400 in 2006, as the result of the highest growth in Oblast over 10% per annum during 2002-06. Beineu is a net

in-migration area with increasing in-migration, while out-migration stays at the similar level in recent years.

The Beineu rayon has extensive lowland with coastal lowland and elevated plains separated by escarpments. Large area of salty marshes exists in the lowland along the Caspian Sea and also in the inland. Clay desert spreads in the inland close to the borders with the Aktobe oblast. Patches of relatively thick shrubs exist in the elevated plains.

(2) Economy

No crop cultivation is recorded in Beineu. The rayon is the most significant livestock area in Mangistau with the largest cattle population (43% share in the Oblast total in 2005) and the second largest sheep and goat population (24%) of the six rayons. Practically all the agricultural land in Beineu is classified as pastures, occupying only 6.8% of the total land in the rayon, while 82% of the rayon land is under land reserve (Table 4.1).

Mining is by far the dominant sector, including both fuel and energy production and other mining activities. Other mining activities of Beineu account for 54% of the total Oblast production in this sub-sector, supported by the extraction of limestone including shell limestone. Utilities largely make up the balance of the industrial production, while manufacturing is negligible. Manufacturing of plastic products such as window/door frames, machinery repair and other activities are recorded in recent years. There exist 36 active small enterprises recorded in 2006.

Of the total employment of 5,081 in 2005, 1,972 or 38.8% are employed by the mining sector, followed by education (33.1%), transport and communication (19.9%), and health and social works (8.3%). Other services are non-existent.

(3) Social aspects

The population in Beineu is almost all Kazakh (99.4% in 2005), while all other ethnic groups combined total 206 in 2006. The significant and increasing in-migration in recent years accounts for the high population growth.

Beineu faces serious female unemployment. All the unemployment recorded in 2006 totaling 2,763 is female. The unemployment rate is calculated to be 35.2% in 2006. The labor force corresponds only to 21.1% of the population based on the employment and unemployment data.

Close to 10,000 pupils are enrolled in general education schools in Beineu in 2005, corresponding to 26.4% of the total population. There exists no vocational or higher education establishment in Beineu. The number of medical personnel per 10,000 population is the lowest in Beineu of the six rayons. The number of physicians and other medical personnel is 65.3 in Beineu, much lower than the corresponding numbers of 195.2 in Aktau and 122.3 in Oblast.

4.4.2 Constraints

The distance from the Oblast capital of Aktau and the lack of urban center pose a fundamental constraint to the development of Beineu. Poor road conditions constrain the marketing of livestock products. The economy of Beineu at present relies almost wholly on mining, although activities have diversified from petroleum and energy resources as the exploitation of shell limestone has expanded. The dominance of these mining activities is an obvious reason for large unemployment among women in the rayon.

Basic education is well provided in Beineu, but no opportunities exist in the rayon for higher education. Medical services are insufficient in the rayon as well.

4.4.3 Prospects

Beineu is located favorably along the railway lines linking the northern part of the Country and further to Russia and Uzbekistan, and also to the central part of Mangistau. Once the new railway link to/from Chelkar of the Aktobe oblast is established, the Beineu village will become the crossroad between the north-south and east-west transportation. The completion of the Beineu-Aktau road is expected in 2008 to strengthen the link with the main part of Mangistau.

Centering on the transport and distribution, a wide range of services activities would develop in Beineu. Recently, a trade firm was established to provide various services including transport, machinery repair, procurement of roughage, and construction of houses and livestock pens. This may prove to be a forerunner of the forthcoming development of the similar activities.

Beineu will continue to be an important livestock area in Mangistau with extensive land and relatively thick vegetation cover due to soil and topographic conditions. The population of cattle and sheep & goats are increasing rapidly in recent years. It can be increased further subject to the availability of water and the procurement of roughage.

Increasing land productivity would be essential to ensure sustainable development of livestock raising in Beineu. Management of pastures and tree planting should be carefully undertaken by the Oblast initiative in selected areas categorized at present as reserve lands to reduce wind erosion of topsoil. These activities, while no immediate benefits are expected, would have significant long-term effects, including expansion of opportunities for crop cultivation between trees. The Beineu National Forest and Animal Protection Area are proposed and may also be effectively utilized to enhance the land productivity in the rayon.

Urban development holds another key for the development of the rayon. The Beineu village should be planned to become an urban center providing business and social as well as administrative services to the rayon as a whole. It would also provide outlets for products of agro- and other resources-based activities in its rural hinterland.

4.5 Karakiya

4.5.1 Existing conditions

(1) Overview

Karakiya is located in the southern part of Mangistau bordering on Uzbekistan to the east and Turkmenistan to the south. It has the largest area of 65,836km^2, accounting for 39.7% of the Oblast land. The population was 25,800 in 2006 to make the population density 0.39/km^2. The population growth is 3% per annum more or less in recent years. Despite the population growth, the urbanization stays at the 53% level in recent years.

The large territory of Karakiya is broadly divided into three areas: the lowland in the central part of the rayon, and the eastern and the western parts thereof. In the central lowland, salt water is intruded from the Caspian Sea in the north and the Kara-bogaz lake of Turkmenistan in the south. Salty marshes and a small salt lake exist in the area. The border between the central lowland and the western area constitutes deserts due to rain-shadow effects of the plateau.

The eastern part is covered extensively by thin shrubs, used for grazing of sheep and camel, and also cattle during summer. In the western part, plateaus occupy to the east and the south (Kendyrli-Kayasanskoye plateau) along the border with Turkmenistan. The deepest Karagiye depression, reaching minus 132m below the world sea level, exists in the northwestern corner,

where a large saltpan spreads at the bottom. Some springs are found in and around this area, but the water is generally lightly salty.

(2) Economy

The agricultural production in Karakiya is very limited, accounting for 16.6% of the total agricultural production in Mangistau. Crop production is least developed, but vegetables are cultivated in 25ha. Livestock activities are more popular, although no livestock population is dominant in the Oblast total. There are comparatively more horses and camels, reflecting the drier and harsher climate. The agricultural land in Karakiya occupies 60% of the total land, of which 70% is pastureland (Table 4.1). The large pastureland is under land reserve.

A collective farm in Senek covering 3.5 milion ha has been producing milk and meat of camel and sheep for 49 years. The farm also has a factory to produce leather products such as hats and coats. As these products are sold exclusively to Uzenmunaigas, a national oil company, the price competitiveness is not high. During the Soviet era, pasture resources in the eastern Karakiye were utilized during summer for livestock production with water delivered from Akkuduk. Currently the pastures are not used due to lack of water for animals.

The industrial production in Karakiya is comparatively even smaller with only 0.1% share in the Oblast industrial production in 2005. Practically only mining and utilities exist as of 2005. In addition to fuel and energy resources, shell limestone (in Sauro) and selestite are extracted. Recently, sheep and camel wool and furs manufacturing have been developing in Senek. Also, manufacturing of steel pipes, bars and other products has been established with a port in Kuryl. There are 10 active small enterprises recorded in 2006.

Of the total employment of 2,339 in 2005, 826 or35.3% are employed by education, followed by real estate & renting (17.5%) and mining (16.4%). Other services are non-existent.

(3) Social aspects

The population in Karakiya is almost all Kazakh (99.6% in 2005). Both in- and out-migration are relatively large, and the rayon is a net in-migration area. The population growth is slightly lower than Oblast as a whole in recent years.

The total unemployment in Karakiya was 2,068 in 2005 to make the unemployment 46.9% calculated from the employment and unemployment data. The youth unemployment (age 15-24 years old) is also significant at 1,201. The labor force corresponds only to 17.1% of the population based on the employment and unemployment data.

Karakiya is the only rayon in Mangistau without a pre-school. Only daytime general education schools exist with 6,300 pupils in 2005, corresponding to 24.4% of the total population. The number of physicians and other medical personnel per 10,000 is 79.5, second lowest of the six rayons. There are relatively large numbers (7) of outpatient clinics in Karakiya.

4.5.2 Constraints

The vast territory with minimal rainfall is the inherent constraint faced by Karakiya. The eastern part of the rayon is hard to reach from anywhere. The central lowland area suffers from salt-water intrusion and also rain-shadow effects. In the western part, saltpans spread in the depressions, while other areas suffer from inherent soil salinity.

The lack of employment opportunities and very high unemployment rate are serious constraints for the development of Karakiya. Other constraints include the lack of pre-school and higher education establishments, and insufficient medical personnel.

4.5.3 Prospects

The Kuryk port complex development has been conceived and its general plan by Kazmunaigaz is near completion. The port will be used to ship oil from the Kashagan oil field to be transported by 740km pipelines to utilize the water depth of 20-25m available at the port allowing 40,000t class vessels to berth. Related industries are expected to develop, including shipbuilding and repair, navigational aid services, petrochemical plant and others as well as flare gas export. A rail connection will be established from Yeraliyev with 14km extension. The population of Kuryk is expected to increase to 30,000 in the first stage, and 45,000 in the second stage.

The Kendyrli tourism complex is another large-scale development conceived by Kazmunaigaz with Mangistaumunaigaz. At present, 180-bed capacity is available in the resort complex. This is expected to be expanded significantly to generate thousands of employment opportunities.

The inland areas have various potential tourism resources that have not been much developed yet. There exist three nature reserves: 1) Karagiye-Karakolsky state zoological reserve (137,500ha partly in the Aktau rayon), 2) Kendyrli-Karasanskoye state reserve zone (1,231,300ha), and 3) Ustyurt state reserve (233,000ha). There are also several heritage areas and the sacred Biketata site for the Moslem in the central lowland and the eastern part of the rayon. These resources may be combined with varied topography and landscape, ranging from monument-like hills to the deserts as well as salty marshes and a salt lake. The central and the eastern parts of Karakiya may offer potentials for experience/action-oriented tourism that may be developed in the medium to long-term future.

The coastal area of Karakiya south of Kendyrli would offer important links with Turkmenistan. The road to the border with Turkmenistan is expected to complete by 2010, and a new railway link is planned. This area would become part of the major north-south artery linking Turkmenistan, through Mangistau, all the way to Russia.

4.6 Mangistau

4.6.1 Existing conditions

(1) Overview

The Mangistau rayon occupies the large territory in the middle of Mangistau Oblast, stretching from the border with Uzbekistan in the east to the Buzachi and the Mangyshlak peninsulas in the west. The total land area is 47,596km^2, the second largest next to Karakiya. The population was 28,900 in 2006 and the population density 0.61/km^2.

The rayon has no urban population, although it has the Shetpe village with over 10,000 population. Shetpe was established in 1928 as the first modern settlement in Mangistau Oblast. The rayon has five other larger settlements with the combined population of some 18,000 as of 2006 and additional five smaller settlements. The rayon is a net out-migration area in recent years, and consequently the population stays practically at the same level in recent years.

The lowland with salt-water intrusion separates the Mangistau rayon in the middle. The eastern part is largely flat land, while the western part has complicated topography with higher hills up to

over 500m above the world sea level. The Buzachi peninsula in the northern part has lowland with salty marshes and sandy areas.

(2) Economy

Crop cultivated area is recorded in the Mangistau rayon with 28ha under vegetable production and additional area under fruits & berries and grape vines for a total of 40ha in 2005. This has increased to some 70ha by 2007, according to the rayon akim. The Mangistau rayon is the most significant livestock area in Oblast, having the largest population of sheep & goats (43.8% of the Oblast total in 2005), horses (50.8%) and camels (38.8%). The agricultural land in the rayon is practically all pastures, occupying 66% of the total land area, which accounts for 45% of the Oblast pasture area (Table 4.1).

The rayon had seven collective farms during the Soviet era, which have not been fully restored. At present, there are 220 farmers registered in the rayon, and also three agricultural cooperatives and five agricultural companies limited.

The Mangistau rayon has the smallest industrial production of the six rayons, accounting for less than 0.01% of the total industrial production in Mangistau Oblast. No fuel & energy production exists, while the oil exploration has been proceeding. The mining production supported by the quarrying of shell limestone and other gravels is smaller than the production in the utilities sub-sector. No manufacturing activities are recorded in the 2005 statistics. Sheep and camel furs and leathers are collected by a private firm in Shetpe for export to Russia and China. There exist assembly plant for plastic products (windows, doors, etc.), and furniture manufacturing from wood chips imported from China. The statistics show 25 active small enterprises in the rayon in 2006.

According to the employment statistics, the most significant sub-sector in the Mangistau rayon is education employing 1,279 or 56.2% of the total employment 2,274, followed by agriculture with 519, health with 290, utilities with 119 and community services with 67. The major railway station of Shetpe offers additional employment. Increasing number of workers are employed by oil exploration companies in recent years.

(3) Social aspects

The population in the Mangistau rayon is practically all Kazakh (over 99.9% in 2005), and only 12 non-Kazakh population is recorded in 2005. The rayon is a net out-migration area, but the net out-migration has decreased from over 500 per year until 2003 to around 400.

The unemployment was 1,641 in 2006, which corresponds to the unemployment rate of 41.9%. Clearly, good numbers of employments, presumably mostly self-employed, are not included in the statistics as the labor force based on the recorded employment and unemployment corresponds only to 13.5% of the population. If the labor force is taken to be 40% of the population, the recorded unemployment corresponds to the unemployment rate of 14.2%. The rayon has more female unemployment, while the youth unemployment is relatively small.

The Mangistau rayon has relatively large number (21) of general education schools with 7,400 pupils enrolled, corresponding to 25.6% of the total population as of 2005. One technical college was established recently. The number of physicians per 10,000 population is the lowest in the rayon at 14.2, compared to 52.3 in Aktau and 31.7 in Oblast. The rayon, however, has a relatively large number (6) of medical institutes, including the rayon general hospital, and additional five outpatient clinics.

4.6.2 Constraints

Although the Mangistau rayon has extensive pastureland, the large flat land in the east is not easily accessible from the more developed coastal areas of the Mangistau Oblast, separated by the salt water intruded area in the middle and rolling terrains in the west. The flat land in the Buzachi peninsula is less suitable for livestock activities as it contains large salt marsh and sandy areas.

The water supply for Shetpe relies on springs, but the quantity is not sufficient. New water sources are planned to be established by sinking 17 wells into the groundwater aquifer some 7km away from the settlement to provide for additional 10,000 population. No treatment is provided for the sewage after the old pumping system established during 1960's became non- operational. A site for a new wastewater treatment plant has been selected. Dust pollution associated with the quarries was pointed out by the rayon akim.

While basic education is well provided in the rayon, opportunities for higher education are limited. Medical services are insufficient with smallest number of physicians in the rayon of the six rayons.

The lack of an urban center is another constraint to the development of the Mangistau rayon. To cover the large territory effectively for social and other services, strong urban functions should be established.

4.6.3 Prospects

The Mangistau rayon would continue to be the livestock center of Mangistau Oblast. As the urban functions are strengthened to serve the vast hinterland, the eastern part would be more effectively utilized for grazing. The existing processing industries would develop as the raw materials base expands in the rayon such as shell limestone and sheep and camel milk, wool and leather. Construction materials industries would diversify, including ornamental slabs, bricks and tiles as well as plastic construction materials.

Crop cultivation may be expanded in the western part, where the amount of rainfall is slightly higher, and groundwater aquifers exist. As the upland areas are generally of rolling topography, the land areas need to be carefully selected. Greenhouse agriculture for vegetables, ornamental plants and nurseries during off-summer season may deserve serious consideration in the lowland areas with groundwater potentials in or around Shetpe.

Aquaculture may be introduced in the lowland areas for caviars as well as fish. Brackish water aquaculture may be more promising to turn the disadvantage of salt water intrusion to the advantage. A possible way to pursue this is to encourage the oil exploration firms operating in the peninsula to incorporate this activity into their social program just as the road and other infrastructure supports associated with the exploration.

The Karatao Mountains with the highest peak of 532m having unique shape are potential tourism resources. The historical heritage of Shetpe as the oldest settlement in Mangistau Oblast may be combined to offer an attractive tour itinerary.

The Shetpe village should be planned to develop into a strong urban center serving the vast territory linked with other smaller settlements to be selectively strengthened as rural service centers. The latter should be strategically selected to cover the western part and the Buzachi peninsula effectively.

4.7 Tupkaragan

4.7.1 Existing conditions

(1) Overview

The main part of Tupkaragan occupies the northwestern corner of Mangistau Oblast along the coast of the Caspian Sea. It has also a detached area in the south of Aktau. The total land area is 10,379km^2. The population was 15,800 in 2006, and the population density 1.50/km^2. The population growth was stagnant in recent years, and the average annual growth was 1.32% during 2002-06. The population increased to 16,500 in 2007. The urban population in Tupkaragan is due to the two settlements of Fort Shevchenko and Bautino, and the urbanization ratio was 51.9% in 2006. Both in- and out-migration are relatively small, but the rayon is a net out-migration area.

Tupkaragan is subdivided into seven sub-districts: Fort Shevchenko as the administrative center, Bautino, Atash (with a population of 2,077), Tauchik (2,531), Karazhanbas (1,100), and Akshul with Sain (6,510). Fort Shevchenko, Akshukur village, Tauchik village and Sain village have general plans, respectinely.

The main part of Tupkaragan corresponds to the northwestern ends of the Buzachi and the Mangyshlak peninsula. The area at the tip of the Buzachi peninsula is largely salt marshes, and the area at the tip of the Mangyshlak peninsula is narrow lowland with some undulations. The small area in the south of Aktau is occupied by a depression.

The Baltimo port, in the natural harbor, has been used as the base for offshore oil exploration, ship repair and chandling, and other related services, allowing the use by ships of up to 12,000t class with the berthing depth of 6m and the anchoring depth of 9m. At present, the port handles over 1 million ton annually for offshore purposes. The port can be used also for commercial freight transport up to 250,000t annually. At present, the commercial use is limited to some 30,000t, represented by import of gravels from Turkmenistan, and special steel products for the pier, and the export of scrap metal. Small consignments from Germany are transported by containers on trucks and through the Don-Volga canal to Bautino rather than by sea.

(2) Economy

Crop cultivated area recorded in Tupkaragan consists of 23ha under fruits & berries and additional areas under vegetables and grape vines for a total of 38ha in 2005. This is found in the privatized former Sokhoz at the foot of low hill near Fort Shevchenko, where irrigated agriculture is undertaken by using the groundwater of lightly salty quality extracted from some 70m depth.

Livestock activities in Tupkaragan are characterized by comparatively large horses and camels population, corresponding to some 15% of the Oblast total, respectively. The agricultural land in the rayon occupies 71% of the total land, of which 76% is pastureland (Table 4.1). In the rayon, 300 families support their livelihood mainly by agriculture, of which about three-quarters rely on livestock.

The industrial production is very small in Tupkaragan, accounting only for 0.01% of the total industrial production in Oblast. In 2005, only recorded industrial activities are other mining supported by shell limestone and stones quarrying, food & beverages supported by camel and goat milk products (camel curd and goat cheese) and meat products (sausages) in Tauchik and utilities. Other manufacturing industries have developed in recent years such as concrete products and asphalt-concrete mix in Fort Shevchenko, meat products (sausages), and a small cement plant. A

desalinization plant exists in Bautino but no heat and hot water supply. Its operation is hampered by the quality of seawater taken from the stagnant waters of the harbor.

There is a laboratory in Fort Shevchenko to analyze the quality of concrete products for certification. The "business incubation" state enterprise was established in 2004 to provide office spaces and associated services for new enterprises.

Tupkaragan used to have a fish processing plant during the Soviet era. It employed some 2,500 workers to produce 35,000ton fish and 5,000ton fishmeal annually. After its bankrupt in 1991, the efforts to privatize it failed and the facilities were finally closed in 2000. The Oblast Akim intends to reestablish the fishery industry, and the Special Department of Fish Economy has been created in the Agricultural Department. At present, only one firm, Mangistau Fish Industry Co., Ltd., is operating for fishery without processing.

According to the employment statistics in 2005, most significant sub-sector is mining employing 537 or 30% of the total recorded employment of 1,778, followed by 452 in education, 338 in utilities, and 196 in health. Other services sub-sectors are non-existent as of 2005. A few hotels, restaurants and other service enterprises have been established recently to cater mainly for the workers for the offshore operations.

(3) Social aspects

The population in Tupkaragan is practically all Kazakh (98.3% in 2006), while 157 Russians are recorded. Mobility of the population is low as both in- and out-migration are small.

In the rayon in 2005, 537 persons were employed in mining, 452 in education, 196 in healthcare, and 338 in utilities. Tupkaragan faces serious female unemployment. Of the total unemployment of 1,320 in 2006, 1,169 are female and about the half of it is youth unemployment. The unemployment rate is calculated to be 42.6% based on the employment and unemployment records. The labor force as the sum of employment and unemployment corresponds only to 19.9% of the total population. If the labor force is taken to be 40% of the population, the unemployment rate is calculated to be 21.1%.

Six general education schools exist with 3,984 pupils enrolled, corresponding to 25.6% of the total population as of 2005. Three pre-schools are also available and two more under construction. There exists no vocational institute in the rayon, and the akim expects training particularly for offshore workers, ship captains, and leather works. A branch of Aktau Polytechnic College has been established and now has 319 students. The number of medical personnel per 10,000 population is 71.1, the second lowest in Tupkaragan, next only to Beineu, and much lower than 195.2 in Aktau and 122.3 in Oblast. A rayon hospital has been recently renovated.

4.7.2 Constraints

Tupkaragan has only narrow lands along the coast of the Caspian Sea. Most lands have constraints such as salt-water intrusion, depression and hilly and rolling terrains. The rayon land shares borders with Aktau.

Possible pollution of the Caspian Sea could be a constraint to the development of Tupkaragan and the Oblast. The Oblast takes the "zero waste" policy with oil exploration, but abatement measures should be built into exploration activities, anticipating the possible incidents.

Tupkaragan faces serious unemployment problem particularly among women. Clearly, this is due to the shortages of opportunities for unskilled labor, as reflected in the net out-migration. While the

basic education is well provided, the rayon lacks opportunities for vocational and higher education. It also suffers from the insufficient medical personnel.

4.7.3 Prospects

The Bautino port will continue to be used as a base for oil exploration, as there exist rich oil reserves yet to be developed in the Caspian Sea to the west and the southwest of the Kashagan field currently explored. The port may become also a construction base for inland areas of the Mangistau and the Beineu rayons as well as Tupkaragan, providing construction materials and other supplies for construction works as these rayons develop. The port may be utilized also for shipping out some construction materials produced in these rayons such as ornamental slabs, bricks and tiles, and plastic products.

The Bautino port will become important also as a base for fishery under the promotion policy of the Oblast, as it has good access to both the deep sea and shallow and less salty coastal waters. Aquaculture in brackish water may be established to expand the production of shrimps, fish and caviars. Fish processing and canning industries may be established in the port area.

Tourism may become a significant employment generator for Tupkaragan, if the landscape and beach resorts are combined with the historical heritage. The latter include the historical district of the Bautino port, the Armenian church and the oldest meteorological station. Some old buildings in the historical district need urgent attention for restoration and preservation. The improved access from the Aktau city would help to foster the tourism industry in Tupkaragan.

Tupkaragan is relatively favorable for water availability. The hilly areas of the Tupkaragan peninsula receives slightly larger precipitation, and the groundwater in the lowland is less saltier despite the intrusion of the sea water as the sea water itself is less saltier in this northern part of the Caspian Sea. Tauchik in the upland has some 40 wells, but the groundwater in the lowland should be tested for its quality. Irrigated agriculture, particularly by drip irrigation, may be expanded at the foot of low hills in the peninsula, utilizing groundwater.

According to the general development plan up to 2020, the population of Tupkaragan is planned to increase to 30,000. The urban development should be planned for Fort Shevchenko and Bautino together as a dual city. Fort Shevchenko should be strengthened for service functions necessary for the port area of Bautino as well. Construction materials and some consumer goods industries would be established in Fort Shevchenko.