No.

The State Agency on Architecture and Construction (SAAC)
The State Service of Geodesy and Cartography (SSGC)
The Kyrgyz Republic

Japan International Cooperation Agency (JICA)

THE STUDY ON

INTEGRATED DEVELOPMENT PLAN

OF ISSYK-KUL ZONE

IN THE KYRGYZ REPUBLIC

FINAL REPORT

MAIN REPORT

February 2006

KRI International Corporation
Nippon Koei Co., Ltd.
Aero Asahi Corporation

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Кыргызский
Научно-Исследовательский,
Проектный Институт по Архитектуре
и Градостроительству

Правительство Кыргызской
Республики
Государственная Комиссия по Архитектуре и
Строительству

Японское Агенство
Международного
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FEBRUARY 2006

VOLUME 1: FINAL REPORT SUMMARY

VOLUME 2: FINAL REPORT MAIN REPORT

VOLUME 3: FINAL REPORT SECTOR REPORT

VOLUME 4: FINAL REPORT GIS MAP SERIES

Currency Equivalents
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As of mid-2004

Unless otherwise specified

Preface

In response to the request from the Government of Kyrgyz Republic, the Government of Japan decided to conduct "The Study on Integrated Development Plan of Issyk-kul Zone in the Kyrgyz Republic" and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA dispatched a study team to the Kyrgyz Republic over the period from November 2003 to February 2006. The Study team consists of lKRI International Cooperation, Nippon Koei Co., Ltd., and Aero Asahi Corporation.

In Addition JICA set up an advisory committee headed by Mr. Shuji Koiso, Professor of Kushiro Public University between November of 2003 to November of 2004, which examined the study from specialist and technical point of view.

The study team held a series of discussions with the concerned officials in the Government of the Kyrgyz Republic and international partners, conducted related field surveys and trainings. After returning to Japan, the study team conducted further studies and compiled the final results in this report.

I hope that this report will contribute to Development of Issyk-kul Zone and to enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the concerned officials in the Government of Kyrgyz Republic for their close cooperation extended to the study team.

February 2006

Kazuhisa Matsuoka
Vice - President
Japan International Cooperation Agency

February 2006

Mr. Kazuhisa Matsuoka
Vice President
Japan International Cooperation Agency (JICA)

Dear Mr. Matsuoka

Letter of Transmittal

It is with great pleasure that we submit the Final Report of the "Study on Integrated Development Plan of Issyk-Kul Zone in the Kyrgyz Republic" which has been completed by joint efforts of the experts assigned by the State Commission on Architecture and Construction and the State Service of Geodesy and Cartography of the Kyrgyz Republic and the JICA Study Team from October 2003 to February 2006.

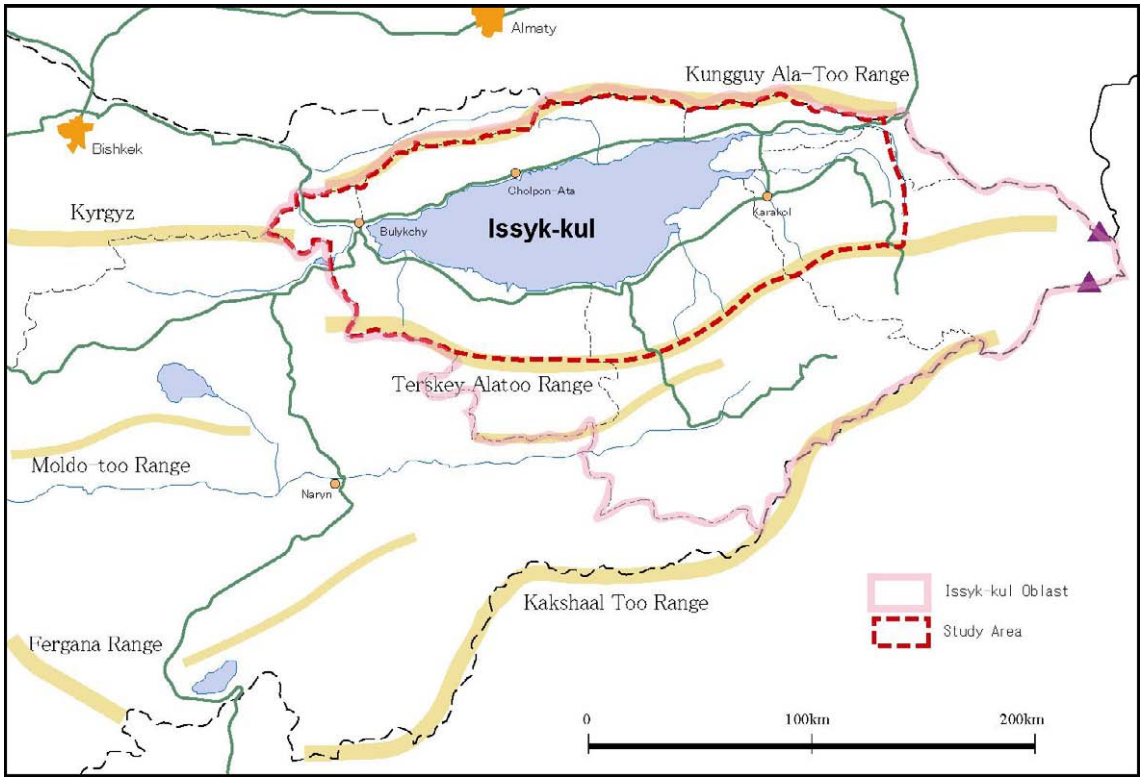
The Study has worked out strategies and programs to attain balanced development of the Issyk-Kul region which is endowed with a superb landscape of the Issyk-Kul Lake surrounded by the ever-snowed Tyan Shan mountain ranges. Digital topographic maps (1/25,000 and 1/100,000) have been newly prepared, and a master plan for integrated regional development has been formulated on the basis of assessments of resources available in the region. A participatory approach has been taken for the plan formulation, as well as for the pilot project operations.

Various actions are required to make the Issyk-Kul region more attractive to the people living in the region and visitors, and to make it more dynamic in economic and social activities. Our Study Team hopes that the Final Report would serve for implementation of the proposed programs by the initiative of stakeholders at the regional level as well as by the central agencies concerned.

Our Study Team wishes to take this opportunity to express our sincere appreciation for the kind assistance and cooperation extended by the people in Issyk-Kul, working group members, and all other parties concerned in the Kyrgyz Republic. This Final Report is a fruit of excellent collaboration of all participants in this Study.

Very Truly Yours,

Hajime KOIZUMI
Study Team Leader


Almaty
Kungguy Ala-Too Range
Bishkek
Kyrgyz
Cholpon-Ata
Karakol
Bulykchy
Issyk-kul
Terskey Alatoo Range
Moldo-too Range
Naryn
Kakshaal Too Range
Fergana Range
Issyk-kul Oblast
Study Area
0
100km
200km

Study Area

THE STUDY ON
INTEGRATED DEVELOPMENT PLAN OF ISSYK-KUL ZONE
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ABBREVIATIONS

CDF	Comprehensive Development Framework of the Kyrgyz Republic to 2010
FEZ	Free Economic Zone
FSU	Former Soviet Union
GOJ	Government of Japan
GOK	Government of Kyrgyzstan
GRP	Gross Regional Product
GTZ	German Agency for Technical Cooperation
IEE	Initial Environmental Examination
JICA	Japan International Cooperation Agency
JST	JICA Study Team
MAWRPI	Ministry of Agriculture, Water Resources and Processing Industry
MoEES	Ministry of Ecology and Emergency Situations
MEC	Ministry of Education and Culture
MoF	Ministry of Finance
MoH	Ministry of Healthcare
MEDIT	Ministry of Economic Development, Industry and Trade
MRDLSG	Ministry of Regional Development and Local Self-Management
MTC	Ministry of Transport and Communication
NBKR	National Bank of the Kyrgyz Republic
NPRS	National Poverty Reduction Strategy
NSC	National Statistical Committee
RT	Round Table
PCM	Project Cycle Management
PDM	Project Design Matrix
RIATB	Research Institute of Architecture and Town Building
SEA	Strategic Environment Assessment
SCAC[1]	State Commission on Architecture and Construction
SSGC	State Service of Geodesy and Cartography
SCSPDI	State Committee on State Property and Direct Investment
SCTSYP	State Committee on Tourism, Sports and Youth Policy
SRIC	State Research Institute of Construction
TACIS	Technical Assistance for the Commonwealth of Independent States
USAID	United States Agency for International Development
WG	Working Group

[1] SCAC was renamed as State Agency on Architecture and Construction (SAAC) after compilation of Final Report.

CHAPTER 1
INTRODUCTION

1.1 Study Background

The Kyrgyz Republic, with its population of about 5 million on the land of 194,119 km^2, became independent in 1991 as one of the Central Asian countries, transforming from a centrally planned economy to a market oriented economy. Though hardships were experienced during the initial transit period, the consistent efforts of the government and people have turned the Republic into the most liberalized state in Central Asia and a member of the World Trade Organization (WTO). However, various reforms and restructuring are still underway in the public administration and economic management systems. Decentralization of the administration system is promoted with the Issyk-Kul Oblast as a model.

The Issyk-Kul Oblast is one of the six oblasts (provinces) of the Republic extending to the east of the country. The Oblast (about 23,000 km^2) has a large lake called the Issyk-Kul Lake (about 6,250 km^2), surrounded by the ever-snowed mountain ranges of Tyan Shan. With its beautiful landscape, the Issyk-Kul zone is famous as a tourism zone not only for the people of the Kyrgyz Republic but also for the former Soviet Union and the world. A northern route of the Great Silk Road runs along the Issyk-Kul Lake. The social and economic activities in the Issyk-Kul zone, however, have remained stagnant, except for the summer tourism season of about three months.

To attain sustainable development in the Issyk-Kul zone, protecting the environment of the Issyk-Kul lake and mountainous areas, as well as to demonstrate administrative decentralization combined with development of social and economic activities, the Government of the Kyrgyz Republic requested the technical assistance of the Government of Japan in the formulation of an integrated regional development plan of the Issyk-Kul zone. The Japan International Cooperation Agency (JICA), the official agency responsible for implementation of the technical cooperation programs, agreed to executed this Study on Integrated Development Plan of the Issyk-Kul Zone based on the terms of reference defined in July 2003.

1.2 Objectives and Scope of Study

This study aims at formulating a Master Plan for Integrated Development of the Issyk-Kul zone and at preparing digital topographic maps on the scale of 1/100,000 and 1/25,000 that would be utilized for master planning and implementation, as well as for other purposes. The Master Plan is formulated with a target year set at 2025. The study comprises the following scope of works:

<Regional Development Planning>

(1) analysis of the present condition of the Issyk-Kul zone,
(2) formulation of development frameworks and strategies,
(3) operation of pilot projects/programs,
(4) formulation of a master plan for integrated development, and
(5) preliminary study on the selected priority projects/programs.

<Digitized Topographic Mapping>

(1) processing of satellite image.
(2) aerial photography and control point survey
(3) installation of mapping systems and symbolization,
(4) preparation of 1/100,000 scaled topographic maps for 14,000 km^2, and
(5) preparation of 1/25,000 scaled topographic maps for 2,300 km^2.

For the formulation of integrated regional development plan, the Strategic Environmental Assessment (SEA) has been applied with utmost attention to the physical and social environments in the study area. Information used in this study has been disclosed to all stakeholders and a participatory approach has been applied throughout master planning of the integrated development plan of the Issyk-Kul zone.

1.3 Execution of Studies

The executing agency of the Kyrgyz government for the regional development planning is the State Commission on Architecture and Construction (SCAC). The counterpart experts for development planning have been assigned by the Research Institute of Architect and Town Building (RITB), an institution organized under SCAC. On the other hand, the agency for the digitized topographic mapping is the State Service of Geodesy and Cartography (SSGC).

Since the integrated development planning covers a wide range of fields and requires coordination among sectors, the Kyrgyz government has formed a Steering Committee headed by the Prime Minister, H.E. Mr. Nicolay Tanayev. The members of the Steering

Committee and the counterparts assigned by SCAC, RITB and SSGC are listed on annexed Table 1.1.

JICA, on the other hand, has entrusted the study to the Study Team formed by KRI International Corp. (prime consultant), Nippon Koei Co., Ltd. and Aero Asahi Corp. For the execution of the studies in the field, the JICA Study Team organized local experts from public institutes and non-governmental organizations into six Working Groups for promotion of joint analysis, study and plan formulation with the JICA Study Team, i.e.,

(1) Macroeconomic study group,
(2) Environmental study group,
(3) Social and community development study group,
(4) Land use study group.
(5) Tourism development group, and
(6) Infrastructure development group.

Photo 1-1 Working Group Discussion

The members of the Working Groups and JICA Study Team are listed in annexed Table 1.2.

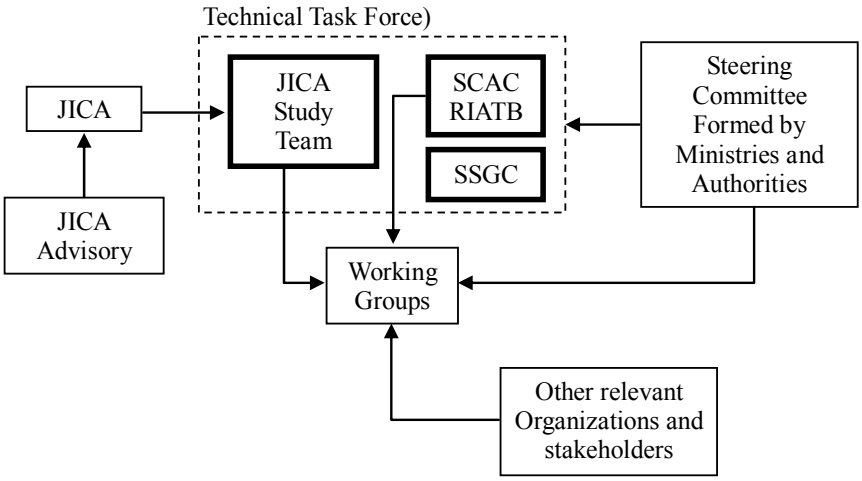


Figure 1.1 Study Organization

The regional development study by the JICA Study Team was initiated in November 2003, and the Master Plan was drafted out in December 2004 while the topographic mapping is scheduled to last until the beginning of 2006. The study and mapping are phased out as summarized in the following table.

Table 1.1 Work Phase of the Study

Stage	From	To	Major Task	
			Regional Dev. Planning	Mapping
First Phase	November 2003	March 2004	Analysis of present condition and formulation of development concept	Process of satellite image and preparatory work
Second Phase	April 2004	December 2004	• Preparation of development master plan • Preliminary Feasibility Study of priority projects /programs • Conduct of Pilot Projects/ Programs	• Aerial photography • Control point survey • Installation of mapping system
Third Phase	April 2005	February 2006	follow-up works	• Symbolization • Preparation of manual • Printing of topographic map

In the course of the study, five workshops (alternatively called the stakeholders' meetings) have been held to discuss with stakeholders on the major findings, progress and outcomes of the study and planning. Since stakeholders are numerous and their interests are diversified, their discussion has been held in a plenary session and in several groups at the first to fourth workshops. The final workshop has been held in a plenary session, jointly with the Steering Committee members and representatives of the international donor agencies. All the records of discussion have been made open to the public on the study website.

In view of the limited data made available, JICA Study Team conducted a questionnaire/interview survey on the social condition of the people in the study area (100 samples as a baseline survey).

Recognizing the vital role that the communities at the village level would play in the integrated development of the Issyk-Kul zone, JICA Study Team has operated the following two pilot projects in the course of the study, though limited to six months in their operation period from June to November 2004:

(1) Community-based development, with reactivation of community-based organization and rehabilitation of the community center and other activities, and
(2) Village nursery development, with nursery centers for herbs, fruit trees and seedlings for reforestation at the community level.

The results of the pilot project operation have been reflected in the formulation of the master plan, particularly in the community-based development and agricultural development, as well as in the strengthening of their linkages with the tourism industry.

1.4 Technology Transfer

JICA Study Team has transferred technology to the counterparts assigned by RIATB and the Working Group members regarding the methodologies for integrated regional development planning. Special seminars have been held on the Japanese experience in long-term national development policies and plans. Training on GIS assisted land use planning has also been extended to the RIATB counterparts.

Photo 1.2 Capacity Building in GIS assisted land use planning

1.5 Reports and Publications

In the course of the study, JICA Study Team has compiled reports and their summaries have been distributed to the stakeholders. They include (i) Inception Report, (ii) Progress Report 1 and 2, (iii) maps and diagrams showing the outcomes of the study and planning, and (iv) Interim Report that summarizes the master plan for integrated development of the Issyk-Kul zone. The digitized topographic maps are applied for approval on publication.

To keep the transparency and participatory approaches in planning and study, as required under the SEA, JICA Study Team has maintained a web-site on which the major outcomes of the study are reported and welcome any comment on the study from stakeholders and the public. The web-site will be kept open by the counterpart agency and/or the office of project implementation at the Issyk-Kul Oblast.

Web-site: http://www.jst-issykkul.web.kg/

This Interim Report summarizes all the results of master planning on the integrated development plan of the Issyk-Kul zone. This report is called “interim” as the final report is to be submitted after the completion of the digitized topographic mapping at the beginning of 2005. It is noted that the integrated development plan presented in this Interim Report will not change substantially in the final report of the JICA Study.

Details of the sector studies are presented separately in the Sector Papers in the following series:

A. State Governance and Institutions
B. Environmental Management Plan
C. Land Use Plan
D. Social and Community Development Plan
E. Investment Promotion and Financial Sector Issues
F. Agricultural Development Plan
G. Tourism Development Plan
H. Industrial Development Plan
I. Infrastructure Development Plan

The GIS-based maps used for the integrated development plan are presented in the Interim Report and Sector Papers in a reduced form, and they are reproduced in a larger scale for presentation to the executing agency and the Oblast administration.

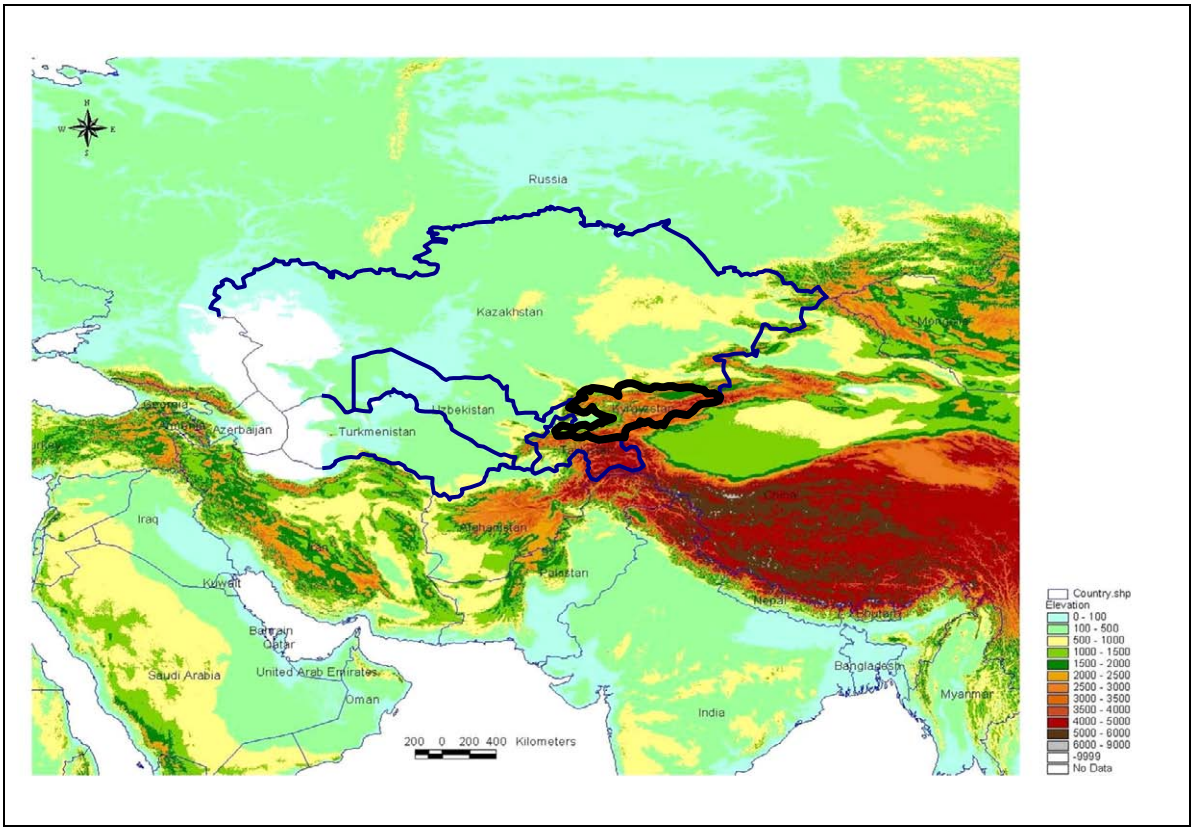
Photo 1.3 Steering Committee Meeting Chaired by Hon. Prime Minister

CHAPTER 2

NATIONAL DEVELOPMENT FRAMEWORK

2.1 Central Asia and the Kyrgyz Republic

Prior to the formulation of the Master Plan for Integrated Development of the Issyk-Kul Zone, the national and regional settings are reviewed in order to work out a strategic development plan for the specific region under the wider framework for development. The position of the Kyrgyz Republic is first reviewed in the development framework of Central Asia (Kyrgyz Republic, Kazakhstan, Tajikistan, Uzbekistan and Turkmenistan).

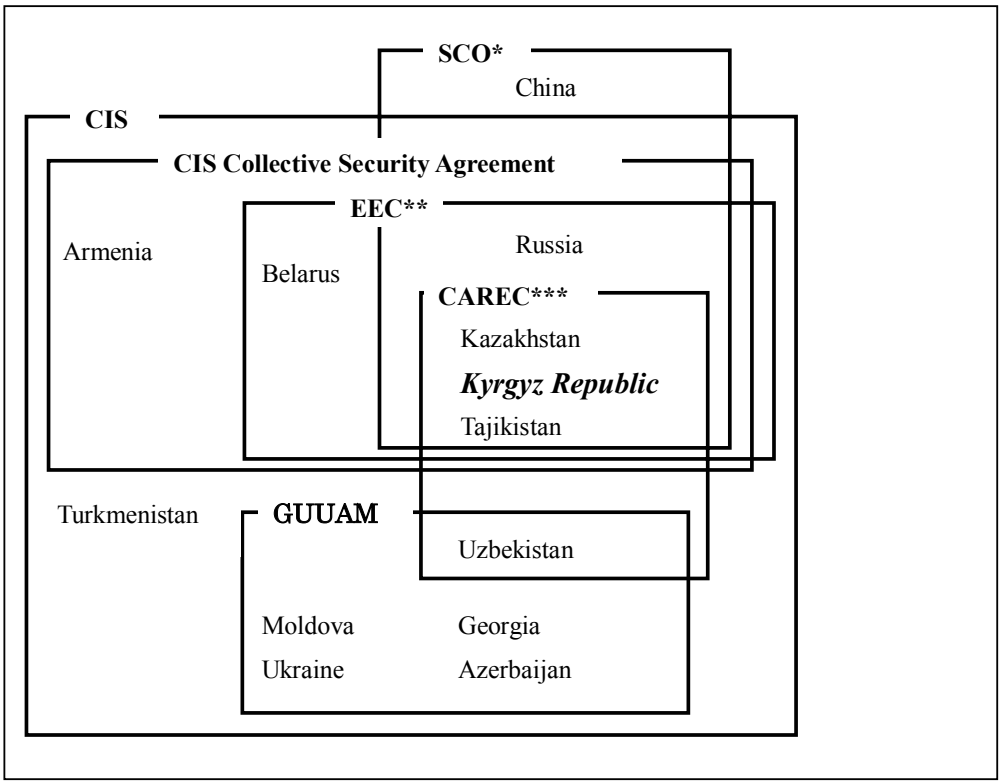


Source: Geographical Survey Institute, Global Mapping website

Figure 2.1 Topographic Map of West Asia

Central Asia is a region of high plateaus and mountains, vast deserts and grassy plains. All five countries are land-locked, resulting in difficulties in accessing the seaborne trade which is a substantial part of the international trade. Due to topographic conditions

and barriers in transportation/trades among five countries, regional integration in Central Asia is still in the initial stage. However, the political and economic relation surrounding Central Asia and the Kyrgyz Republic has been developed in search for regional cooperation. The current structure of international cooperation is illustrated in the following diagram:



* Shanghai Cooperation Organization (SCO)
** Eurasian Economic Community (EEC)
*** Central Asia Regional Economic Cooperation (CAREC)
Source: Tomohiko Uyama ed., 60 Stories of Central Asia, Akashi Shobo(2003.1), p.289.

Figure 2.2 Current Structure of International Cooperation

At the CIS Summit meeting in 2004, it was proposed that a common market be formed in Central Asia and/or CIS in order to strengthen the regional economic integration. Although it is still uncertain when such a common market is formed in this region, it is of vital significance that regional cooperation be promoted in Central Asia.

Central Asia had a total population of about 56 million in 2000 and it is estimated to grow at the average annual rate of around 1.0%. It is expected to reach 76 million in 2030. Most urban centers in this region are developed at the outskirts of mountain ranges due mainly to the access to water resources. In this context, it is envisaged that a Central Asia Piedmont Urban Belt would be formed encompassing such major urban centers as Almaty, Bishkek, Osh, Dushanbe, Tashkent and Samarkand, while developing a Central Asia Common Market or Economic Development Block in the mid to long-term.

Table 2.1 Population, Labor Force and Urbanization Measures

Country	Kyrgyzstan	Kazakhstan	Tajikistan	Uzbekistan	Turkmenistan
Population* ('000)					
Year 2000	4,700	16,200	6,200	24,300	4,500
Year 2030	6,400	18,000	9,400	35,100	6,600
Expected growth rate	1.0%	0.3%	1.4%	1.2%	1.3%
Labor force**(1980/2010)					
Employed Population	2,100/3,000	9,100/10,000	2,100/3,600	8,600/14,800	1,600/3,200
(growth rate)	1.8%	0.5%	2.7%	2.8%	3.5%
Labor force	1,500/2,600	7,000/7,700	1,500/3,300	6,500/13,200	1,200/2,900
(growth rate)	2.8%	0.5%	4.0%	3.6%	4.5%
Composition by sector ($1^{st}/2^{nd}/3^{rd}$)	55/15/30 (00 est.)	9/40/51 (02 est.)	19/26/55 (02 est.)	36/21/43 (01 est.)	27/50/23 (01 est.)
Elementary education	82%	89%	103%	n.a	n.a
Secondary education	n.a	83%	76%	n.a	n.a

Source: * Population: UN Population Fund
** World Bank, "World Development Indicator 2003", November 2003

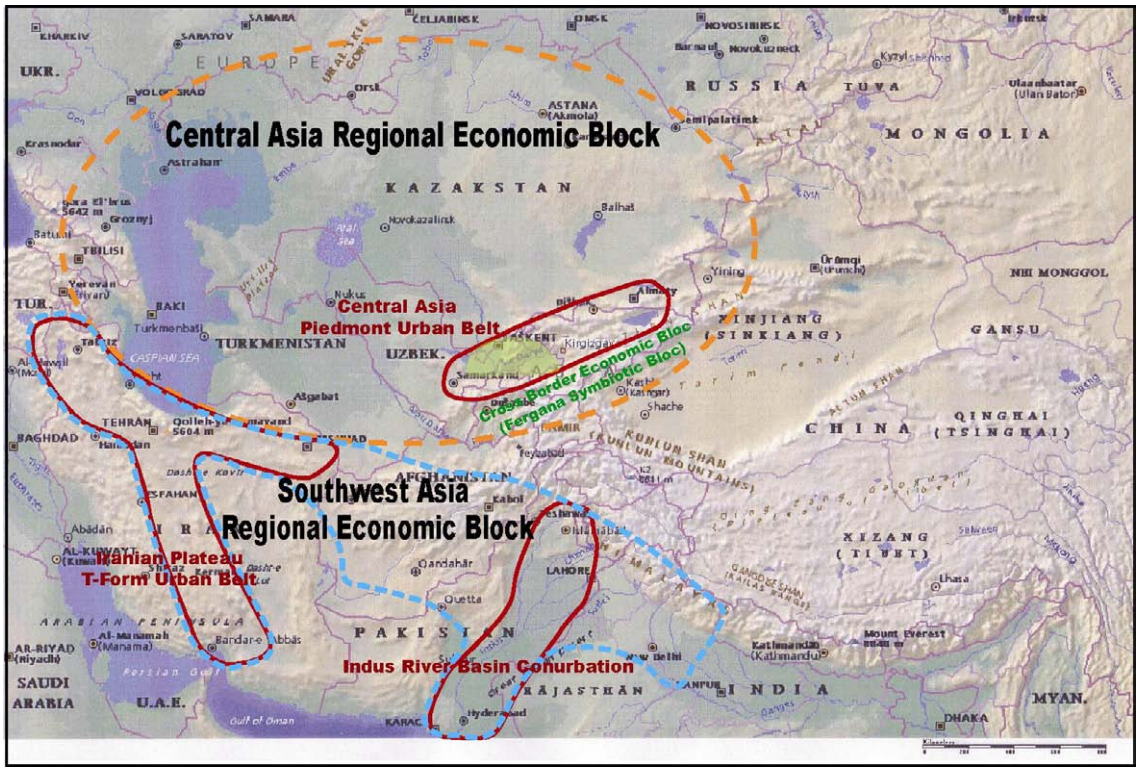


Figure 2.3 Location Map of Economic Zone

Formerly, the transportation network in this region had been developed towards Russia in the north. With the shift to the market economy and the economic growth in China, the recent improvement in the transportation systems is more oriented to the horizontal direction. Further, with the change in Afghanistan and the completion of the Karakolm highway in Pakistan, the seaborn transport in Central Asia would be more directed to the south, e.g., Karchi port in Pakistan and Bandare Abbas port in Iran.

The macroeconomic situation in Central Asia has changed drastically in the last decade. While the mineral (hydrocarbon) resource endowed countries (Kazakhstan, Uzbekistan and Turkmenistan) have attained a substantial growth, the economies of the less endowed countries (Kyrgyztan and Tajikistan) have lagged and are suffering from accumulated debt. Nevertheless, Kyrgyztan and Tajikistan are blessed with water resources and have potential for hydroelectric power.

Table 2.2 Major Economic Indicators

Country	Kyrgyzstan	Kazakhstan	Tajikistan	Uzbekistan	Turkmenistan
Nominal GDP size (100 mil.US$)					
1992	n.a	8,500	261	n.a	n.a
1994	1,113	11,635	918	5,691	2,076
1996	1,828	20,882	1,053	12,050	2,186
1998	1,643	22,052	1,319	10,380	2,386
2000	1,301	18,243	991	7,455	2,223
2001	n.a	n.a	n.a	n.a	n.a
Real economic growth rate （%）					
1992	-19.0	-2.9	-29.0	-11.3	-5.3
1994	-20.1	-12.6	-18.9	-4.2	-17.3
1996	7.1	0.5	-4.4	1.6	-6.7
1998	2.1	-1.9	5.3	4.4	5.0
2000	5.1	9.6	8.3	1.5	17.6
2001	4.0	6.0	4.5	1.0	6.0
GDP per capita (US$)					
1992	751	357	52	92.5	352
1994	249	721	159	255	517
1996	398	1,333	177	521	480
1998	350	1,452	218	433	511
2000	275	1,225	158	298	415
2001	n.a	n.a	n.a	n.a	n.a

Source : EBRD “Transition Report 2000” (November 2000) , EBRD “Transition Report Update”(April, 2001).

Inter-regional trade within Central Asia and Russia has remained relatively constant until 2000, except for exports of crude oil and natural gas. More recently, the import of Chinese products has increased in the countries with an open market policy, like Kyrgyztan.

The overview of economic settings in Central Asia, as summarized above, would bring us the following implication in the formulation of the integrated development plan in the Issyk-Kul zone in the Kyrgyz Republic:

Implication to the Issyk-Kul Zone Integrated Development

(i) Regional integration in Central Asia might be further promoted in the mid to long terms, and development of the Kyrgyz Republic and Issyk-Kul zone should be oriented towards the acceleration of inter-regional cooperation. The Issyk-Kul zone would be able to offer an ideal location for inter-regional dialogue.

(ii) Particular attention is to be paid to the future spatial development structure of the Central Asia Piedmont Urban Belt that would cover most of the urban centers in the Kyrgyz Republic. The Issyk-Kul zone would offer an ideal location for tourists and visitors from the Central Asia Urban Belt, and find markets there for the Issyk-Kul products.

(iii) The bulky products of the Kyrgyz Republic and Issyk-Kul zone would find access to ocean ports in Pakistan and Iran in the longer term. Development of transport networks would better be planned under such a long term perspective.

(iv) Water resources in the Issyk-Kul zone and Kyrgyz Republic is not only an asset of the zone and Republic but also a valuable asset of Central Asia. Hence, conservation of water resources and protection of the environment is of prime importance for development of the Issyk-Kul zone and the Kyrgyz Republic.

(v) Direct investments by the countries endowed with hydrocarbon resources should be promoted to the less endowed countries, like Kyrgyztan and Tajikistan, in order to attain balanced regional development. The Issyk-Kul zone and the Kyrgyz Republic should be prepared to offer attractive conditions for such investments.

2.2 Physical Development Framework of the Kyrgyz Republic

In order to strategically formulate the integrated development plan of the Issyk-Kul zone, it is being discussed how the national physical development of the Kyrgyz Republic would be framed in the mid and long terms. These discussions will lead to several implications to the Issyk-Kul zone development.

(1) Formation of the New Society

To respond to the changing economy and society of the Kyrgyz Republic, by alleviating poverty and creating a new society in the 21st century, the Republic is expected to form

a new Kyrgyz society based on the market-oriented economy and the information technology (IT) renovations.

In promoting the market economy, particular attention should be paid to the relatively high costs in transportation due to the land-locked position of the country, thus requiring higher productivity to face the global competition. IT renovations, on the other hand, will lead to the Ubiquitous, hence the society should catch up with the rapidly changing IT renovations.

Development of the nation as a whole is to be supported by its natural resources, human resources and legal/institutional systems. Judging from the endowed natural resources, the leading industries are the agro-based industry and tourism industry. Human resources should be further developed under the long-term perspectives so that the Kyrgyzstan people can take the ownership for development by themselves. Legal and institutional systems should also be renovated on the basis of the Kyrgyzstan culture and the global requirement for good governance.

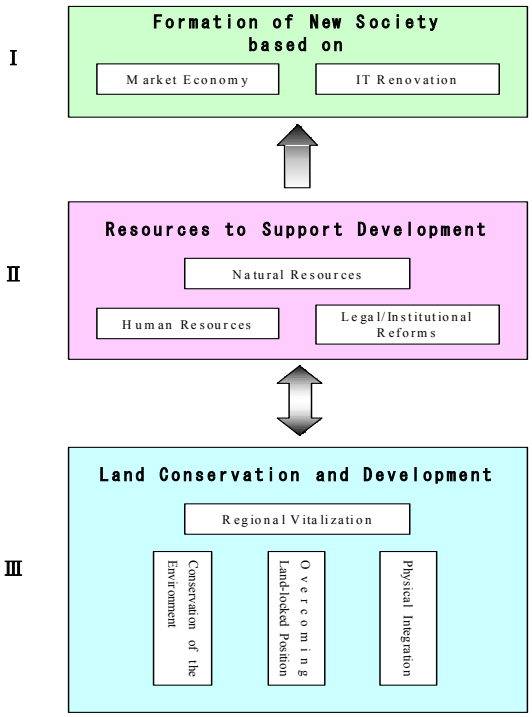


Figure 2.4 Issues to be Addressed for National Physical Development

From the viewpoint of national physical development, major issues are (i) conservation of the natural environment, (ii) overcoming the landlocked disadvantage, (iii) integration of the socio-economic centers, and (iv) vitalization of the rural economy and society. The natural environment should be conserved to the utmost extent, applying the scientific approaches, preventing pollution and disasters, and attaining the sustainable economic and social development. To overcome the geographical disadvantage, Kyrgyzstan should promote linkages and amicable relations with countries in Eurasia. Integration of the dual poles for development, one in the Bishkek area and the other in Osh area, will play a vital role in the spatial development structure. Rural areas should also be integrated into the spatial structure, revitalizing the economy and social services.

With the above concepts in view, the national physical development framework of the Kyrgyz Republic towards the year 2025 will be formulated with three objectives; i.e.,

(i) Protection of the environment, represented by the landscape of the Tyan Shan ranges and Pamirs, is a prerequisite. To attain this objective, it is necessary to accumulate scientific knowledge and let the people be even more aware of the environment and eventually develop a cyclical system into the society.

(ii) Utmost utilization of human resources is required to build a society where people live and work lively with vigor. Employment opportunities should be expanded with improved human resource capabilities. The most crucial is to cultivate core human resources capable of leading the country and region under a global economy.

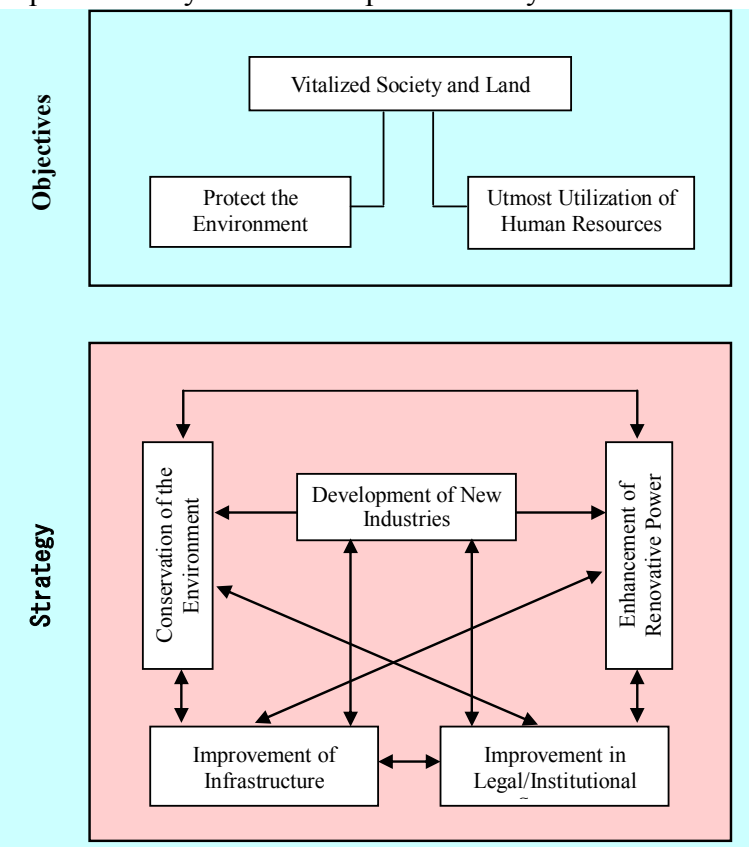


Figure 2.5 Objectives and Strategy for National Physical Development

(iii) Vitalized society and land should be attained to keep the country open, exchanging cultures and economic ties. Poverty alleviation will not be attainable without vitalization of the society and land.

To realize the above tasks, it is required that (i) the direction of development be clearly stated in the national development plans, (ii) industrial development strategies be established and implemented, and (iii) various systems should be institutionalized into the society by achieving governance and building infrastructure.

(2) Four Concepts for National Spatial Development

To attain the objectives and strategies for the national physical development, the Kyrgyz Republic is expected to take into account the development images to be formed in respective regions. In this context, four development images are presented to invite discussion and subsequent consolidation by the Kyrgyz people as follows:

(i) Metropolitan Area: Chui plain
(ii) Allied City Network: Osh plain
(iii) Core City Network: Issyk-Kul region
(iv) Collective Local Villages: Naryn district

Metropolitan Area: Chui Plain

The metropolitan area and its vicinity should be collectively developed without excessive concentration. From now on, further accumulation is expected to occur in Bishkek, i.e. industry, administration, service, information etc, which will continue to induce younger population flow into the city area.

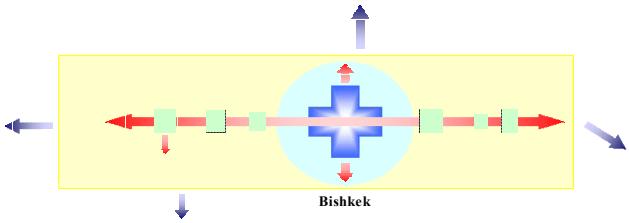


Figure 2.6 Metropolitan Area Types

First of all, the accumulation should not induce overpopulation. It is important to strengthen Bishkek's function as a centralized administrative hub and build up its international competitiveness to enter this globalizing world. Therefore many projects should be executed based on a comprehensive land planning strategy which includes restrictions and guidance towards land use to stop the disorganized expansion of the city area, to improve public infrastructures and residential environment by conserving the environment.

Secondly, there is a need to restrict excess concentration towards Bishkek. We should avoid the risk of reducing any local attempts/actions and under-population in mountainous areas. The point is to achieve a balanced growth between "urban concentration" and "regional decentralization" and to discuss this issue within the national land planning policy.

Allied City Network: Osh Plain

According to the Census 1999, the population of Osh, Jalal-Abad and Batken, the three southern cities was 2.43 million which makes up half of the total population. In particulat, Osh is the largest city in the south, is called "the Southern Capital of Kyrgyzstan". However, only Osh itself is still not sufficient to become the driving force of regional development. By strengthening mutual cooperation with surrounding cities, such as Jalal-Abad, Uzgen and Karasu, the region, as a whole, will be able to utilize its economies of scale to confront the Bishkek metropolitan area.

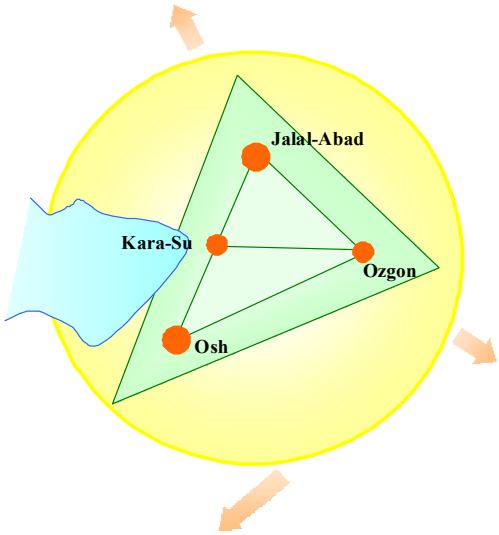


Figure 2.7 Allied City Network

Core City Network: Issyk-Kul Region

One of the most important issues for Kyrgyzstan in the 21 century is to proceed with the national land planning covering the whole area to build-up a vitalized society. The base of national development lies in regions. Not only does the nation provide the direction towards regional development, but the region itself is also taking the initiative, with various regional characteristics and independence.

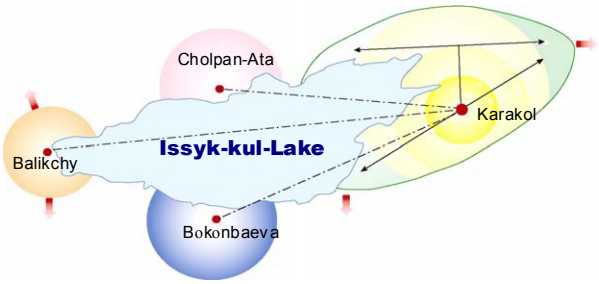


Figure 2.8 Networking of Local Cities

Collective Local Villages: Naryn District

Since the Kyrgyzstan population is comparatively sparsely inhabited, it is necessary to combine the urban, as a place for production, and the rural area, as for living, together into the development plan. As transport and communication grows rapidly than ever, the rural living space is expected to expand steadily. To attract people into the local regions, employment opportunity, convenience, access to public service close to urban level will be required. Thus it is vital to cross over the boundary of each district to develop a wide-spread living atmosphere.

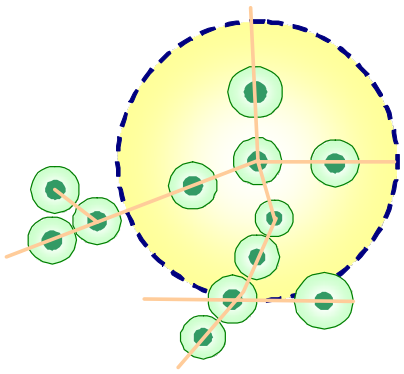


Figure 2.9 Network of Independent Local Villages

(3) Dual Development Poles for the Kyrgyz Spatial Structure

Development of the Kyrgyz Republic is currently polarized into the Bishkek area and Osh area. These development poles will be integrated into a single spatial structure in the mid to long terms, as shown in the diagrams.

Further, the Bishkek area will be linked with the Almaty area in Kazakhstan, while the Osh area will be linked with the Fergana Symbiotic/Convivial Community to be formed in and around the Fergana valley, thus contributing to the

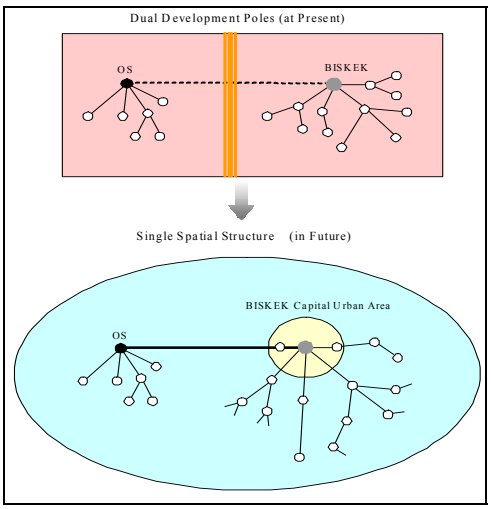


Figure 2.10 Kyrgyz Spatial Structure

consolidation of the Urban Belt Zone in Central Asia.

(4) Basic Strategy for National Physical Development

For national physical development of the Kyrgyz Republic, several strategies are proposed, i.e., (i) conservation of the environment, (ii) development of new industries, (iii) enhancement of renovative power, (iv) improvement of infrastructure, and (v) renovation of legal/institutional systems.

Endowed with the beautiful natural landscape, Kyrgyzstan should respect such an asset and pass it on to the next generations. Utmost attention should therefore be paid to the conservation of the natural environment in national and regional development. The accumulated knowledge must be utilized and the systems should be set up to monitor and preventively manage the environment. Formulation of a cycle-oriented type of society is to be pursued with the least pollutant from the economic and social activities.

Deployment of new industrial activities should be oriented towards the promotion of globally competitive products, as well as production of niche products to niche markets, ensuring the employment for the urban and rural people. Agricultural production and the processing industry will be accorded with priority as a basic Kyrgyz industry. The tourism industry should also be promoted with priority, making use of the endowed natural environment and cultural assets. Some processing industries and service industries must be promoted in urban areas, promoting linkages as industrial clusters. In the middle and long terms, IT related industries are to be promoted in some selected centers over the country.

Enhancement of the renovative power is to be attained through human resource development and dissemination of information technology, as well as through socialization or consolidation of the social capital by means of the participatory approaches. Particular attention is to be paid to the capacity building of personnel and institutions to become adequate enough to lead the market economy and balanced rural development. As IT becomes a common platform for industrial development, dissemination of IT knowledge is becoming indispensable for economic and social development. Socialization should be enhanced, as President Akayev emphasized at the annual budgetary speech (January 2004), and the social capital should be consolidated promoting mutual trust and passion for collective improvement. The participatory approach has been found to be effective in working out sustainable programs for development.

Improvement of infrastructure is of vital importance for national physical integration and enhancement of competitiveness in the markets. It will include transportation and communications networking, as well as development of water/sewerage systems and energy systems. As Kyrgyzstan is located outside the international transportation

networks, special attention should be drawn to the improvement of networks in and around the country. The telecommunications network should also be improved and IT services be disseminated. Endowed with water resources, it is possible for Kyrgyzstan to lead the world and regional development of hydrogen energy in the middle and long terms.

Legal and institutional systems should be improved as most of these systems are still inadequate in promoting the efficiency under the market economy. As discussed by the government, legislative improvement should cover the systems to make the market mechanism effective, legal settings to normalize the orderly market mechanism in financial, insurance and transaction of immobile assets, as well as decentralization and supporting systems for capacity building. Likewise, institutional improvement should be accelerated to effectively implement the short, middle and long term development programs. Legal and institutional improvement would result in good governance at the national and regional levels.

(5) Issyk-Kul Zone in the National Physical Development Framework

The Issyk-kul zone is located next to Chui Oblast which possesses the capital city of Bishkek. Its most distinctive feature is the beautiful scenery represented by the great deep blue-colored Issyk-kul lake surrounded by the mountains with glacier snow in all directions.

Chui basin owes its prosperity to the functions of Bishkek city which benefits from flat land, abundant water as well as wide-spread transport network. Thus, as Bishkek grows and plays a central role, both population and industry concentration is expected to continue.

On the contrary, Issyk-kul is a specialized region based on tourism, agriculture and livestock industry. Although Issyk-kul and Chui Oblast differ in the quality of accumulation and size, and will go through different development paths, they are expected to supplement each other in the long run. Thus the deepening of the two regions should be included in the discussion of the overall land planning of the Republic to have a spillover effect on the economy as a whole.

Further, the Issyk-kul area will strengthen its relationship with Almaty, the former capital of Kazakhstan. The formation of a cross-border interexchange zone will contribute towards the internationalization of Issyk-kul, and even more, of the Kyrgyz Republic.

More specifically, development of the Issyk-kul zone will be spatially characterized by the following four frameworks:

(i) Space for the natural environment and bio-diversity protection
In the Issyk-kul zone, wide nature is dominant anywhere. Thus, any human activity should be sensitive towards environment conservation. Buildings should also be balanced to the surrounding environment.

(ii) Space for biological production and processing
Development of the local industry should be based on agricultural land and grass field. Tourism should also be developed with close connection to this bio-environment. Further, the IT-related industry such as software business is expected to emerge in the long run.

(iii) Space for humanity restoration and enhancement
For those who live in the modern urbanized, highly industrialized society, the Issyk-kul zone is an ideal place to vitalize its humanity. Trekking, marine/lake sports, eco-tourism, and rehabilitation facilities, once developed, can provide a healing both mentally and physically.

(iv) Space for international cooperation and exchanges to create new knowledgeable value for the regional and global issues.
It is easy to imagine that in the near future, there will be more people coming in and out of this region than people reside locally. In addition, if Issyk-kul succeeds in hosting conferences and forums, both domestic and international, it will be a great opportunity to promote exchange between various people from various countries, which would lead to the establishment of an intellectual creation cycle.

From the viewpoint of the national physical development framework as discussed above, the Issyk-kul zone will be set in the position as summarized below.

Issyk-kul Zone under the National Physical Development Framework

(i) The Issyk-kul zone is located just beside the Urban Belt Zone in Central Asia and it could be developed in line with the enhancement of the Belt Zone;
(ii) While the Bishkek area will be developed as a principal development pole of the country, the Issyk-kul zone can be developed as a polarized zone with specific industrial development;
(iii) Major Issyk-Kul industries are agriculture/livestock and tourism industry, judging from the natural endowment in the region. Infrastructure to support these industries should be adequately improved;
(iv) Industries in the Issyk-kul zone can be developed as a cluster, promoting vertical and horizontal linkages in the region;
(v) In addition to the linkage with the Bishkek area, the Issyk-kul zone would be linked with the Almaty area in Kazakhstan. Possible linkage with China along the historical Silk Road is also envisaged;

(vi) The environment in the Issyk-kul zone should be protected to the utmost extent, particularly in and around the Issyk-Kul Lake.
(vii) Legal and institutional settings should be improved in the zone in line with the national improvement in these respects;
(viii) Capacity building should be promoted to attain sustainable development and environmental conservation;
(ix) Development programs should better be formulated and implemented through participatory approaches to make them sustainable; and
(x) The Issyk-kul zone is expected to contribute to the national, regional and global promotion of human security and a formation of symbiotic/convivial community.

It is proposed that the basic concept and strategy for the Issyk-kul zone development would be formulated in line with the national framework as proposed in this Section.

2.3 Comprehensive Development Framework (CDF)

The CDF for the Kyrgyz Republic is an approach aiming at more effective poverty reduction which embraces a diverse range of elements of development, - social, structural, human, governance, environmental, economic and financial. The government of the Kyrgyz Republic prepared the CDF in close collaboration with international donors. As the first phase implementation of the CDF, the government also prepared the National Poverty Reduction Strategy (NPRS) for 2003-05. CDF and NPRS are briefly reviewed, together with the socio-economic performance in the past.

(1) Socio-economic Performance

At the end of 2003, the total population of the Kyrgyz Republic approached five million. Of the five million Kyrgyz people, 67 percent are ethnic Kyrgyz, 14 percent are Uzbek and 11 percent are Russian; more than 90 nationalities reside in the Republic. The ethnic structure of the population has undergone considerable changes since the independence in 1991. Migration processes were accompanied by a decline in production and the closure of enterprises which resulted in a sharp decrease in Russian, Ukrainian, German and others.

Table 2.3 Population by Nationalities in the Kyrgyz Republic

Nationalities	Population		Composition (%)		1999/1989 (%)
	1989	1999	1989	1999	
Total population	4,257,755	4,822,938			
Kyrgyz	2,229,663	3,128,147	52.4	64.9	140.3
Uzbeks	550,096	664,950	12.9	13.8	120.9
Russians	916,558	603,201	21.5	12.5	65.8
Dungans	36,928	51,766	0.9	1.1	140.2
Ukrainians	108,027	50,442	2.5	1.0	46.7
Uigur	36,779	46,944	0.9	1.0	127.6
Tatars	70,068	45,438	1.6	0.9	64.8
Kazakhs	37,318	42,657	0.9	0.9	114.3
Tadjiks	33,518	42,636	0.8	0.9	127.2
Turks	21,294	33,327	0.5	0.7	156.5
Germans	101,309	21,471	2.4	0.4	21.2
Koreans	18,355	19,784	0.4	0.4	107.8
Other nationalities	97,842	72,175	2.3	1.5	73.8

Source:First National Population Census of the Kyrgyz Republic of 1999

This sharp decrease in the Slavic community which lived in urban-type settlements influenced the total urban population. The portion of the urban population has decreased from 38.2 %(1989) to 34.7 % (2002). Nonetheless, the capital city of Bishkek has had significant population growth which is estimated to reach approximately one million inhabitants. In comparison with the 1989 census, a tendency has been observed for the ratio of children aged 0-15 to decrease and the economically active population to increase. As a result of the previously high fertility rates, a large young labor force requires employment opportunities. While international emigration may continue to destined countries such as Russia, immigrant workers are still in demand. The trend of increased urban migration will likely continue, which would cause rapid urbanization. Regional development strategies to create new job opportunities are urgently required.

Independence in 1991 was followed by a sharp decline in GDP, especially industry as brought by sharp reduction in resources for investment and production. Since 1996, gradual growth began largely by agriculture, gold mining and energy. The table below summarizes the basic facts of GDP and sector performance.

Table 2.4 Trend of Kyrgyzstan GDP from 1990 to 2002

								Annual growth rate	
	1990	1995	1998	1999	2000	2001	2002	1990-1995	1995-2002
GDP at Constant 1990 Factor cost (million soms)									
GDP	41.7	21.1	25.4	26.3	27.8	29.3	29.1	-12.7%	-3.0%
Agriculture	14.0	10.1	13.4	14.5	15.0	16.0	16.6	-6.3%	1.4%
Industry	14.6	4.3	5.4	5.4	5.7	6.1	5.3	-18.3%	-8.1%
Services	13.1	12.2	12.7	12.5	13.7	14.3	13.4	-1.4%	0.2%
Growth of Output annual change (%)									
GDP		-5.2	2.0	3.8	5.6	5.3	-0.7		
Agriculture		-1.9	2.3	8.2	3.4	6.7	3.8		
Industry		-10.4	0.0	0.0	5.6	7.0	-13.1		
Service		-6.9	1.5	-3.0	10.9	1.4	0.0		
Population	4.34	4.62	4.81	4.9	4.91	4.95	4.98	(million persons)	

Source: ADB : Key Indicators of Developing Asian and Pacific Countries

The mid-term macroeconomic projections have been prepared for the National Poverty Reduction Strategy as shown in the Table below. With a gradual decrease in public investment, private investment will have to fill the gap. While foreign direct investment is expected to play a large role, the investment climate and cooperation with neighboring countries need to be improved. The share of net exports as of GDP will also improve provided that exports will continue to grow. This projection is based not only on the assumption of the growth of gold production, but also of diversification on export positions. The most favored nation status needs to be fully utilized for increasing export goods. Simultaneously, the Republic needs to intensify the cooperation of newly emerged partners such as China, Turkey, Germany, and India as well as the Slavic countries.

Table 2.5 Projections of Investments, Savings, Exports and Imports

(as % of Kyryz GDP)

	2003 Actual	2004 Expected	2005	2006	2007
			Forecasted		
Nominal GDP, bln. Soms	83.4	91.8	100.5	110.5	121.47
Real GDP growth rate, %	6.7	4	4.5	5.3	5.2
GDP composition, %					
Private consumption	68.3	69	68.5	67.4	66
Government consumption	17.5	17.9	17.7	17.7	17.1
Gross investments	18	18.1	19.8	20.3	20.6
Public investment	5.3	3.9	3.5	3.1	3.2
PIP (external funding)	4.4	3.5	3.2	2.9	2.8
Private investment	12.7	14.2	16.3	17.2	17.4
Net export	-0.3	-5.2	-6.1	-5.4	-3.7
Export of goods and services	36.7	37.4	36.3	35.3	35.2
Import of goods and services	37	42.6	42.4	40.7	38.9

Source : NPRS Progress Report for 2003

(2) Comprehensive Development Framework towards 2010

The CDF is a long term strategy, implementation of which will allow existing problems to be overcome in a systematic way, and will provide for a dynamic development of the state and the society in the political, social and economic areas. The CDF document identifies the ideology, prospects and expected outcomes of the current and upcoming reforms aimed at meeting the people's needs. In essence, the CDF aims at resolving the main problems – poverty and debt – by first significantly improving the administration of the state. Secondly the CDF relies on substantial improvements in state budget management. The consequences of the measures proposed under the strategy have been quantified and set out as economic and financial projections to the year 2010. An average annual GDP growth rate of 5% in real terms is necessary to achieve the aims which premised on increase in private investment, including foreign direct investment and decrease in budget deficit.

(3) Poverty Reduction Strategy

The National Poverty Reduction Strategy (NPRS) for 2003-2005 prepared by the Republic in close collaboration with international donors is the first phase in the implementation of CDF. It was adopted as a medium-term action program for the government of the Kyrgyz Republic in conducting dynamic economic, social, and political reforms that will ensure human development and the reduction of poverty and avoid food insecurity in the country. The goals and objectives of CDF and NPRS are consistent with the Development Goals of the Millennium Declaration, known as Millennium Development Goals (MDGs).

NPRS has been assessed annually for its implementation progress in three pillars, namely (i) fostering economic growth and creating employment opportunities;

(ii)improving efficiency and equity of social protection and human development; (iii) improving governance, public sector efficiency and institutional and human capacity. The progress is assessed by a number of monetary and non-monetary poverty measures. Monetary poverty indicators use the data of the selective survey of over 3,000 households conducted by the National Statistical Committee (NSC) using a methodology agreed with the World Bank. The methodology uses the following parameters as welfare measurement criteria: (a) per capita expenditures (baseline criterion), (b) per capita consumption, and c) per adult equivalent consumption. Poverty level and extreme poverty level are calculated for all three criteria, which strengthens the validity of these measurements. The headcount index is primary used as prevalence of poverty. It denotes the percentage of households who are poor - as defined by the poverty line – as a proportion of total population.

Table 2.6 Measures of Welfare Defined by NSC

Measure of welfare	Poverty line 2001 soms	Food poverty line 2001 soms
a) Expenditure per capita	7,491	4,510
b) Consumption per capita	6,975	4,648
c) Consumption per adult equivalent	6,975	4,648

Source: "Enhancing Pro-Poor Growth in Kyrgyzstan", 2003,World Bank
Note : NSC defines the extreme poverty line utilizing the cost of the food basket that provides minimal nutrition

According to the NPRS, the national poverty level targeted for 2005 is 38.9%, down from 55.3 % in 1999 when more than half of the population was categorized as in poor condition. The change in the poverty level during the past four years from 2000-2003 is displayed in the following Table.

Table 2.7 Poverty Incidence by Oblasts from 2000 to 2003

	Persons below subsistence level				of these, extremely poor			
	2000	2001	2002	2003*	2000	2001	2002	2003*
Republic	52.0	47.6	44.4	40.8	17.8	13.5	13.8	9.4

* - according to preliminary data (1100 households)
Source: National Statistical Committee

The National Statistical Committee started to expand the survey sample from 3,000 to 5,000 in 2003. This will clarify the regional disparity in detail, which will be able to differentiate the poverty level village by village.

2.4 Institutional Frameworks of State Governance

The political system of the Kyrgyz Republic is a semi-Presidential democracy where both the President and Members of the Parliament are directly elected and the functions of the Executive Branch are coordinated both by the President and the Cabinet chaired

by the Prime Minister. There was a trend during the 1990s of transferring more powers to the President, but the Constitutional amendments in February 2003 shifted some powers back to the Cabinet and the Legislative Branch. For example, Vice Prime Ministers, Ministers and Chairpersons of State Committees are now nominated by the Prime Minister and appointed by the President after the approval of the Parliament, while before they were appointed by the President in consultation with the Prime Minister.

The Parliament, or Jogork Kenesh, consists of the Assembly of People's Representatives, the upper house of 45 members, and the Legislative Assembly, the lower house of 60 members. As a result of the Constitutional amendments of 2003, the Parliament will consist of one chamber of 75 members after the elections of February 2005. The Judicial Branch is comprised of the constitutional court, the supreme court and subordinate courts in Oblasts, Rayons and the two republican cities (Bishkek and Osh).

As our main interest is to review the existing institutional frameworks with a view toward considering a specific and sustainable framework for the integrated development of Issyk-Kul, we will focus on the structure and functions of the Executive Branch, or the public administration, in the descriptions below.

(1) Public Administration

The Government has been pursuing the policy of restructuring public administration bodies including mergers, abolition and privatization. The latest change to the structure of the Government was made by the Presidential Decree of 7 February 2004, an organogram of which is shown in the following page. The Cabinet is comprised of the heads of 12 Ministries and 2 State Committees. In addition to these state administrative organs, there are State Agencies and State Commissions. State Committees and State Commissions are basically inheritance from the Soviet times and the general trend is to transform the functions in these bodies and transfer them to Ministries and Agencies.

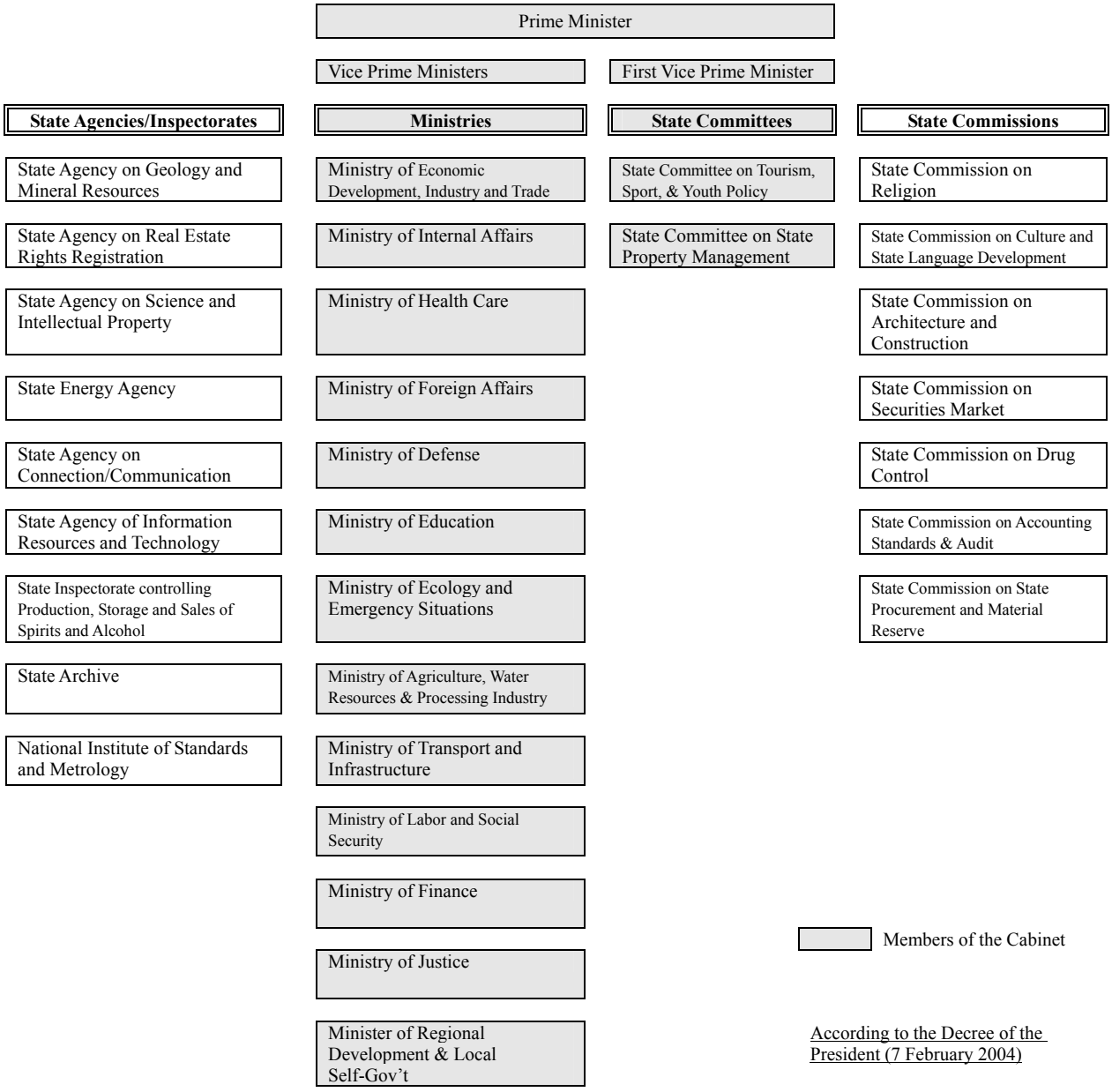


Figure 2.11 Government of the Kyrgyz Republic - Executive Branch

The Government places significant emphasis on public administration reform, which is one of the nine priority areas identified in the Comprehensive Development Framework (CDF). In recognition of the elimination of corruption and improving efficiency and effectiveness of public administration is indispensable for further progress toward the market economy, the Government has been embarking on a number of reform initiatives. One of them is Functional Review of 8 Ministries and State Committees conducted with the assistance of UNDP and DFID in 2002-03. The Review analyzed the functions of each of the state organs in the spheres of (i) policy making, (ii) regulation, (iii) coordination, inspection and control, and (iv) service delivery. The recommendations

that came out of this Review are being followed up steadily. For example, the recent organizational change of the Government involved a transfer of investment promotion related functions from the State Committee of State Property and Direct Investments to the newly expanded Ministry of Economic Development, Industry and Trade (MEDIT). The MEDIT acquired functions from other organs including the Ministry of Finance in terms of economic development policies and is poised to perform integrated functions related to industry, trade, investment and economic development. The State Committee on Tourism, Sports and Youth Policy is presently in the final stage of adopting new regulations to reflect the Functional Review. One result would be to transfer investment promotion related functions to the MEDIT. It is expected that investment promotion functions performed by other state organs will be merged into the MEDIT as well. This is a very positive step toward realizing the concept of "one stop shop" for foreign investors, which can at least consolidate the information on investment opportunities and present it, in a comprehensive and consistent manner, to potential investors. Another example that has come to the attention of the Study Team is the development in the Ministry of Ecology and Emergency Situations, which now has a new organizational set-up and regulations in an effort to eliminate duplications of functions.

While further review and actions to rationalize the functions of the state administrative bodies are necessary, potential or real duplications of functions in the Presidential Administration and the Executive Branch under the Prime Minister may need to be reviewed as well. During the transition process of the country, it may be prudent to locate key functions in the Presidential Administration for the sake of efficiency of policy making and implementation. Such "direct execution," however, may have to be pursued with caution so as not to undermine existing organizations at the national as well as sub-national levels.

(2) Decentralization and Local Government

The emerging system of state governance at sub-national levels in the Kyrgyz Republic is a hybrid of deconcentration and devolution. The structure of the three sub-national layers, Oblast, Rayon and Local Self-Government (LSG) is summarized in the table below.

Table 2.8 The structure of Oblast, Rayon and Local Self-Government (LSG)

Level	No. in Issyk-Kul	Administration	Kenesh (Parliament)	Head	Appointment of the Head
Oblast	1	State Administration + Oblast Office	Oblast Kenesh (30-45 Deputies)	Governor (Head of state admi.)	Appointed/removed by President upon agreement of respective local Kenesh & in consultation with Prime Minister
Rayon		State Administration + Oblast Office	Rayon Kenesh (15-30 Deputies)	Akim (Head of state admi.)	
LSGs					
City	0	City Administration	City Kenesh (30-45 Deputies)	Mayor	Elected by Kenesh
Republican	1			Mayor	"
Oblast-subordinated	2	Aiyl Okmotu		Head	"
Rayon-subordinated	58	Town Administration	(15-30 Deputies)	Head	"
Aiyl	5		(11-21 Deputies)	Head	"
Town (or Settlement)			Ayil Kenesh Town Kenesh (9-21 Deputies)		

Source: Communities at LSG level Congress of Local Communities (national level)

The state administration of the central government is represented at Oblast and Rayon levels. While each of the line Ministries/Agencies/Committees/Commissions are accountable to their supervisors in the central government, they are also accountable to the head of Oblast or Rayon, who is appointed by the President. The local state administration is also accountable to the elected councils, i.e. Oblast Kenesh and Rayon Kenesh. However, the elected councils play only a nominal or advisory role at the respective levels in the structure that is dominated by the deconcentrated functions and appointees of the central state. The functions of Oblast and Rayon are overlapping in many cases and it is said that the restructuring of these two layers is currently under consideration.

The devolved feature of the sub-national system is emerging at the level of Local Self-Government (LSG), comprised of cities, aiyls and towns (or "settlement of urban types"). The first democratic elections were held in LSGs in 2001 and a total of 8,184 representatives were elected. A national strategy titled "Decentralization of State Government and Development of Local Self-Governance in the Kyrgyz Republic through the year 2010" was adopted in 2002 and legal institutional reforms are in progress in line with the goals described in this strategy. The laws "on Local Self-Government and Local State Administration," "on Communal Property Ownership," and "on Economic and Financial Basis of Local Self-Government" were adopted in January 2002, March 2002, and September 2003 respectively, providing the foundations for administrative and economic autonomy of LSGs. Further legislative work is currently in progress with regard to the enactment of the laws "on Municipal Services" and "on Community Based Organizations" as well as amendments to the Budget Law, Tax Code and the Law on non-tax payments.

The areas that LSG is responsible for are described as "main affairs of local significance" in Article 15 of the Law on Local Self-Government and Local State Administration. They are:

- Organization of operation and development of the life support system and provision of social and cultural services
- Comprehensive social and economic development of local community territory
- Rational land use by local community
- Housing and utilities, territory improvement
- Communal transport and roads
- Creation of adequate conditions for the development of pre-school, secondary school and vocational education
- Creation of adequate conditions for the development of health care
- Maintenance and development of historical and cultural traditions of the local community

In order to fulfill functions in these areas, demarcation of responsibilities between LSG and the local state administration has to be clearly made and LSG needs to ensure adequate financial resources, locally generated and transferred from the state. Also, institutional and managerial capacity of LSG has to be enhanced. Several donors including UNDP and USAID are providing support toward this end.
In addition, Article 16 of the same law lists state powers that can be delegated once the necessary procedures of the state support are established in the spheres of social policies, agriculture and livestock, environment protection, tax and duty collection, law and order, and consumer and retail services.

(3) Legislative and Regulatory Powers

The legislative and regulatory powers of the state organs are summarized in the table below:

Table 2.9 Legislation as Regulatory Powers

Laws and Regulations	Issuing Authorities and Effects
Laws	The Parliament with the approval of the President (who has a veto power, exercise of which can be overridden by the Parliament with two-thirds of the votes).
Decrees	The President (It has the same effect as law. In the event of a conflict with a law, the law prevails.)
Regulations of the Government	The Cabinet
Acts of Ministries and Administrative Offices	Each Ministry, State Committee, State Agency and State Commission
Decisions of Local Government Administrations	The administrations of Oblast, Rayon and LSG.
Decisions of Local Self-Government	The Kenesh of LSG. (Oblast and Rayon Keneshes can also adopt decisions, though they are not part of LSG.)

Note: The wording of various regulatory tools listed above is in accordance with those described in the official English translation of the Law on Normative Legal Acts.

According to the Law on Government and the Law on Normative Legal Acts, the President can issue orders and resolutions in addition to the decrees, the cabinet resolutions, and the state administrative organs orders, instructions in addition to acts. The President has power to suspend or nullify the effects of these various regulatory instruments of the executive organs. The differences in the meaning and effects of these regulatory tools are not very clear, causing unnecessary or unjustified interventions of the state bodies.

Since the independence of the country, there have been 1,154 laws adopted by the Parliament, 2,932 decrees issued by the President, 9,267 resolutions and regulations issued by the Cabinet, and 3,420 acts issued by the central state organs (according to the TOKTOM database as of December 2003). While the speed of legislative and regulatory reforms is commended, the hastiness in drafting and issuing laws and regulations is often resulting in duplications and contradictions of related clauses in different laws and regulations. As part of the efforts to rectify such situations, an inter-departmental commission in the Ministry of Justice has been formed to deliberate on improvement of legislation. In addition, amendments to the Law on Normative Legal Acts are currently under consideration that would require publication and discussion of draft legislation regulating activities of business entities.

There is a tendency of proliferation of regulations at the sub-national levels as well. For example, in the area of economic and investment activities, the forum of foreign investors and government officials coordinated by the FDI Secretariat identified a total of 110 regulations issued by local state administration bodies, imposing licensing and permit requirements that are outside the scope of their authorities. A report of the World Bank in 2002 looked at administrative barriers experienced by the dairy industry, for instance. It concluded that small to medium dairy processing firms can reduce 33% of their cost by administrative barriers in the form of unjustified inspections and requirements removed. The Government is well aware of such situations and is taking measures to address them.

(4) Budgetary Arrangements

The Law on Basic Principles of Budget provides basic procedures for preparing the Republic Budget for the central state expenditures and the Local Budget for local level expenditures. There are transfers from the Republic Budget to the Local Budget in the forms of category grants (mostly to cover health and education related expenditures) and equalization grants. According to a study by ADB in 1999, 76% of the nation's spending was at the Republican level, while 4% at Oblasts, 3% at in Bishkek, 12% at Rayons, and 5% in LSGs. (Figures to update this breakdown as well as to see the allocations for Issyk-Kul by sub-national levels and by sectors are yet to be obtained.) The Government is preparing a Medium Term Expenditure Framework (MTEF) for a

three year period for the republic budget that guides budget allocations with a view to achieving the CDF goals.

For state government bodies, there are two kinds of revenues: regular revenue generated from taxes and duties and special funds revenue raised from issue of permits, licenses and certificates, imposition of fines, sale of products, rendering services and others. The mechanism of special funds encourages regulatory bodies to conduct frequent and excessive inspections and perform extra activities. The Government, through a Presidential Decree, has decided to prohibit formation and use of special funds unless specifically allowed by laws. Necessary legislative and institutional reforms must take place to implement this decision. In addition, there are fiscal operations not captured by the government budget. The Government will work on an action plan to address these extra budgetary funds.

Reforming the budget formulation process to increase the value of the budget as a strategic tool and to improve transparency is currently underway. Modernization of the treasury system, strengthening of budget execution processes, improving the effectiveness of external audits, and introducing proper internal audits are also on the agenda.

(5) Agenda for State Governance

To gain a broader perspective of the state governance reform currently being implemented and planned, major themes and tasks including those already mentioned above and respective development partners are summarized below.

Table 2.10 State Governance Reform

Themes & Tasks	Main Development Partners
Public administration reform ● Functional Review of Education, Health and two more Ministries including Oblast and Rayon branches ● Improving public access to official information ● Improving interaction between state bodies and businesses	World Bank, UNDP, DFID
Decentralization and Strengthening Local Self-Government	USAID, UNDP
Civil service reform ● Improving personal accountability ● Institutional reform on recruitment, promotion, etc.	World Bank, DFID, JICA
Budgeting, expenditure control, and financial management	DFID, World Bank, IMF
Increasing effectiveness of the legislatures	World Bank
Improving the electoral system	World Bank, UNDP, USAID
Judiciary reform	ADB as part of the Corporate Governance project

Source: The World Bank Bishkek Office

CHAPTER 3

CURRENT SITUATION OF ISSYK-KUL ZONE

3.1 Administrative and Geographical Settings

The entire area of the Issyk-kul zone is situated within the administrative boundary of Issyk-Kul Oblast, and all or parts of territories of the five constituent rayons are involved: the entire area of Issyk-Kul and Tup rayons, and the northern parts of Aku-Suu, Tong, and Jeti-Oguz rayons. As for the LSGs, there are three towns of Karakol, Balykchy, and Cholpon-Ata, 58 Ail-Okumotus and four SUTs. Almost all of the LSGs are situated along the flat lakeshore as depicted in the following figure:

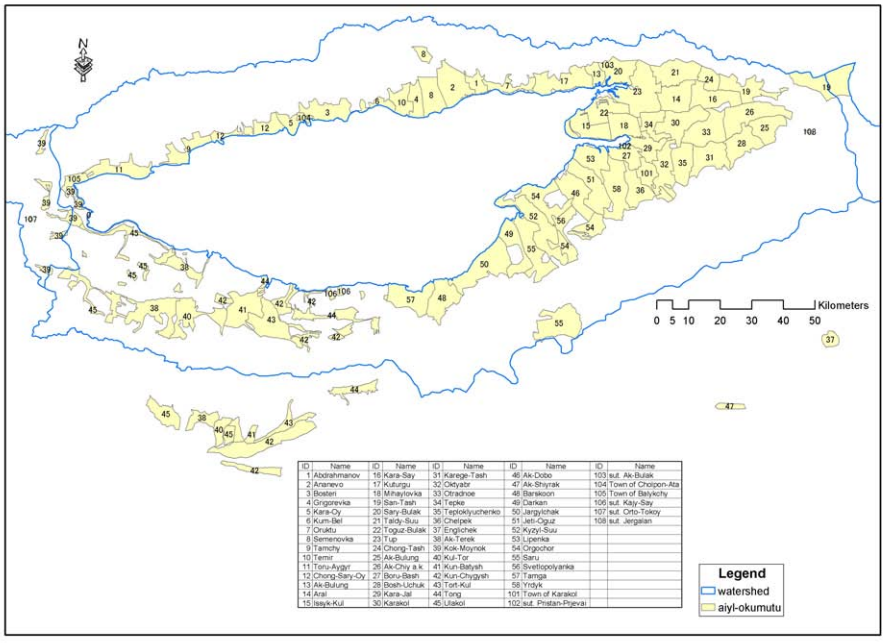


Figure 3.1 Administrative Setting of the Issyk-Kul Zone

The Study Area is defined as a complete basin of the Issyk-Kul Lake situated at around 1,600 m above mean sea level, surrounded by high mountains with a peak elevation of 4,747 m on the Teskev Ala Too mountain range at south western edge of the area. The land consists mainly of steep slopes and mountain surface. Based on the 1/500,000 topographic map, the area of gentle slope with less than 8 % gradient is limited to 5,399 km^2 or 31.6 % of the Study Area excluding the water surface of the Issyk-Kul lake.

Table 3.1 Composition of Land by Gradient Class

Classification	Gradient	Area (km^2)	Share (%)
Gentle		5,399	31.6
	0-2%	2,613	15.3
	2-4%	1,418	8.3
	4-6%	765	4.5
	6-8%	603	3.5
Steep		7,276	42.5
	8-10%	572	3.3
	10-15%	1,619	9.5
	15-20%	1,772	10.4
	20-30%	3,313	19.4
Mountainous		4,429	25.9
	30-40%	2,437	14.2
	Over 40%	1,992	11.6
Total	Total	17,105	100.0

3.2 Land Use and Regulative Conditions

(1) Land Use

Based on the GTOPO 30 data available from NASA, the land use of the Kyrgyz Republic and the Study Area in 1996 is measured as summarized in the following table. The major characteristics of the land use in the Study Area are:

- The composition of land use in the Study Area is similar to that of the entire Kyrgyz Republic; grassland/shrub covers more than 55% of the land:
- The area of agriculture land in the Study Area represents a larger share (14.4%) than that of the Republic (11.4%), resulting in a larger share of rural population (9.15%):
- The forestry area is smaller (5.3%) than that of the Republic (8.6%), reflecting the higher elevation especially in the mountain ridges; and
- Smaller composition of bare areas in the Study Area (3.7%), compared to the Republic (7.2%), implying less vulnerable conditions to the soil erosion.

Table 3.2 Land Use in Kyrgyz Republic and the Study Area (1996)

	All Kyrgyz (A)		Study Area (B)		(B)/(A)
	Area (km^2)	Share (%)	Area (km^2)	Share (%)	(%)
Drainage/Water	7,366.6	---	6,425.5	---	87.2
Land Subtotal	186,752.1	100.0	16,579.7	100.0	8.9
Forest	16,032.9	8.6	872.3	5.3	5.4
Mixture	31,727.2	17.0	3,404.9	20.5	10.7
Grassland/Shrub	103,333.7	55.3	9,195.0	55.5	8.9
Agriculture Area	21,260.0	11.4	2,382.0	14.4	11.2
Wetland	193.1	0.1	23.1	0.1	12.0
Bare Area	13,367.2	7.2	613.6	3.7	4.6
Built-up Area	838.0	0.4	88.7	0.5	10.6
Total	194,118.7	---	23,005.3	---	11.9

Source: GTOPO 30, NASA

In order to evaluate detailed conditions of the current land use, several existing maps have been used for the GIS data-base. These maps include:

- The land use thematic map of 1984 (1/500,000), which is the latest available thematic map issued by SSGC;
- 1/50,000 and 1/25,000 geographic maps; and
- Drawings of the present and recommended future plan of "Ecologically based Land Use in the Issyk-Kul Territory" produced by the GTZ sponsored biosphere project.

Areas of built-up urban and resort-use lands have been digitized from 1/2,500 and 1/50,000 maps, and then up-dated using the biosphere map. As for the agricultural land use, the result of 1984 thematic map shows close conformity with the results of the 2002 agricultural census conducted. The estimated composition of the current land use in the Study Area is now calculated as summarized in the table below.

Table 3.3 Estimated Composition of Current Land Use

	Aksuu	Issyk-kul	Jetioguz	Tong	Tup	Total
Water						6,255
Other lake	0	0	0	0	0	3
Issykkul lake	0	0	0	0	0	6,252
Land						
Built-up Land	48	70	64	36	57	275
Town	48	53	64	30	51	246
Recreation area	0	17	0.4	6	6	29
Agricultural Land	1,184	2,050	1,565	2,780	1,376	8,954
Farm land	546	330	446	301	522	2,147
Irrigated land	413	275	390	197	130	1,406
Non irrigated land	133	55	56	103	392	741
Pasture	638	1,720	1,119	2,479	854	6,810
Bushes	161	302	143	148	182	936
Dry land	18	5	0	74	121	218
Grass land	16	3	0	150	101	271
Low mountain	85	763	142	349	105	1,444
Middle mountain	357	647	834	1,759	344	3,940
Mountainous	2,012	1,490	1,995	1,728	651	7,876
Pebbles	9	19	10	43	6	87
Mountainous coniferous forest	196	111	447	104	81	938
Sparse growth of trees	87	42	29	28	156	343
High mountain	901	884	735	964	332	3,817
Zone of eternal snow	819	433	774	589	77	2,691
Total	3,244	3,610	3,625	4,544	2,084	23,361

Source: JICA Study Team

The current land use is also illustrated on the following figure.

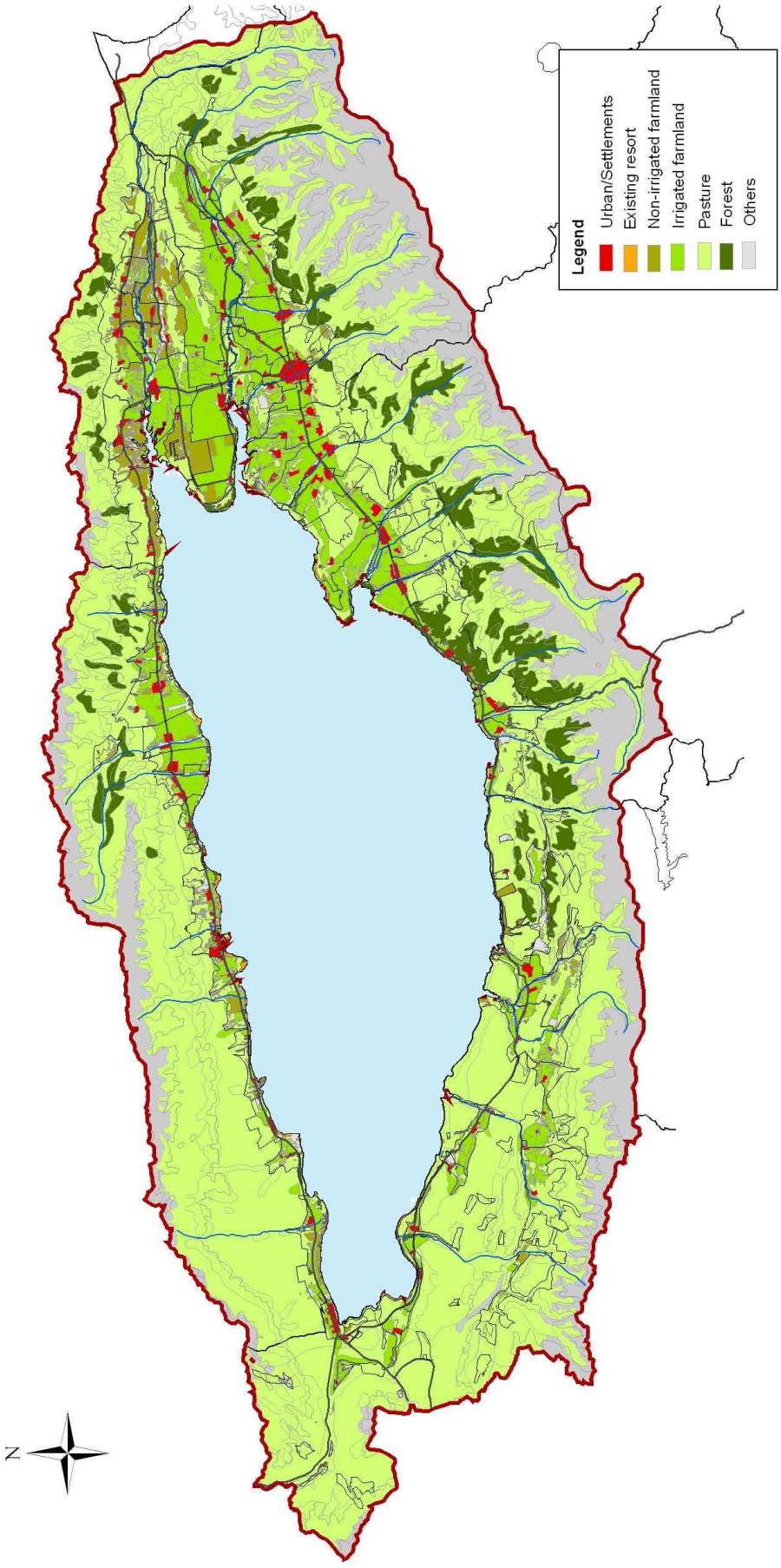


Figure 3.2 Current Land Use

(2) Land Ownership

Among the CIS nations, the land reform in the Kyrgyz Republic has been more drastically processed. After introduction of private land ownership, considerable urban and agricultural land plots have been given or sold to households and/or private enterprises. Currently, the land ownership/management is categorized into: (i) private, (ii) communal, (iii) state land managed by the Forest Service, and (v) state land managed by private body.

Although the responsible government agencies have been making efforts on land reform issues with the support of the international agencies, the situation still remains transitional. Increase in unused arable land caused by extraordinarily small subdivision of land plots and subsequent degradation of soil conditions are among the major problems to be solved.

In this Study Area, the landownership is composed as shown on the following table and figure.

Table 3.4 Land Ownership by Rayon

Rayon	Private (km^2)	State (km^2)	Communal (km^2)	Total (km^2)	Share of Private (%)
Ak Suu	260.0	86.1	0.2	346.3	75.08
Tup	343.1	78.6	0.03	421.73	81.36
Tong	169.1	57.4	6.9	233.4	72.45
Jeti-Oguz	300.1	84.3	4.1	388.5	77.25
Issyk-Kul	261.8	121.5	2.9	386.2	67.79

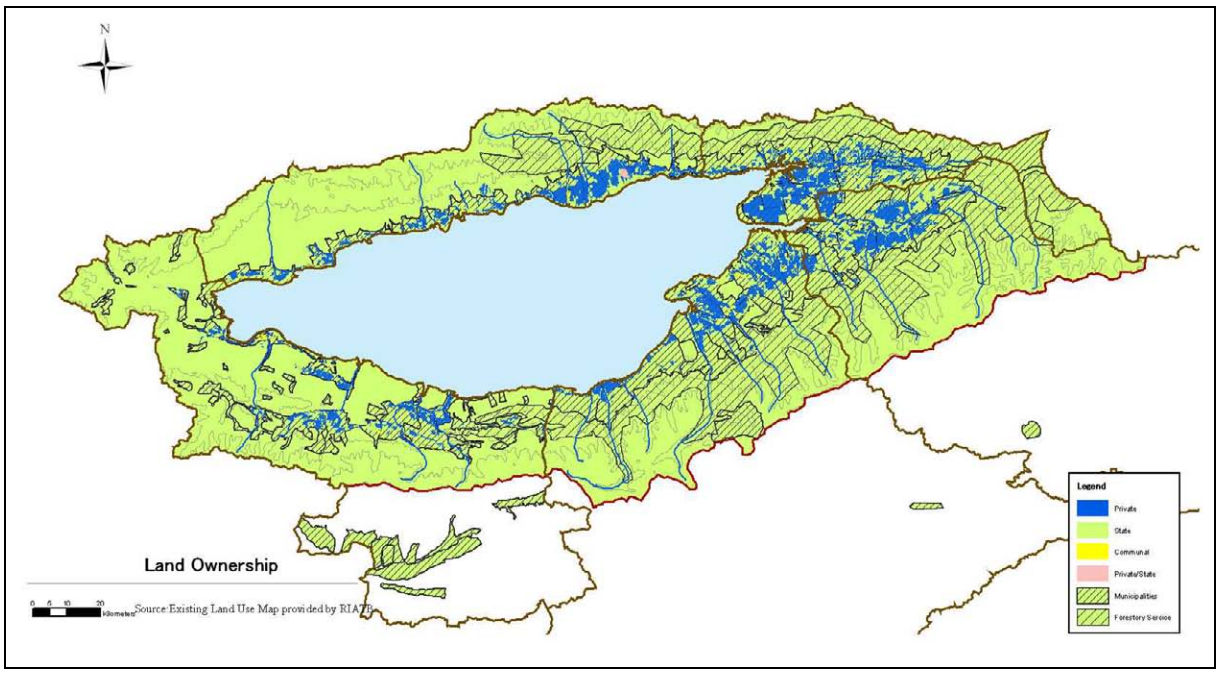


Figure 3.3 Current Distribution of Land by Ownership and Managing Body

(3) Land Use Regulations

There are dozen of laws and regulations applicable to the land use in the Issyk-Kul zone, providing various types of restrictions on the land utilization. Although it is apparent that each of these regulations has been promulgated seeking betterment of the natural/social conditions, such a regulative condition is rather chaotic. Major factors that cause such an ironical situation are attributable to the following. This situation is critically discouraging private sector investments as investors cannot easily estimate potential of lands that they are about to acquire.

- Unclear definition of territories applicable to the regulation; there are many regulations that restrict construction within a certain range from the lake shore, but the lake shore line is not practically defined yet and therefore will be affected by the change in water level:
- Duplications and contradictions; there are some regulations which can be covered by other regulations, while some statements often contradict each other and in some cases are not pursuant to fundamental laws, e.g., Civil Law and Land Code:
- Not being well publicized to the local level; significant amount of land has been transferred to the hands of LSGs and then distributed to households or sold to private entities. Partly because of the short period of experience for both LSGs and investors, there are cases in which transactions of land plots are made without awareness of regulations applied to the land plot.

3.3 Demography and Settlements

The total population of the Kyrgyz Republic was estimated to be 5 million in 2003. The population of the Issyk-Kul Oblast as of 2002 is 420,600, accounting for 8.4% of the total population. More than 70 nationalities live within the oblast. Currently 79% of the oblast population is Kyrgyz and 13% is Russian. During the 1990s, the annual population growth was significantly low or less than one percent on an average due mainly to the emigration of Russian, Germans and others from the oblast and from the Republic.

Table 3.5 Population by Oblast

	1997		2002		Growth rate (97-02)
Bakten Oblast	374.0	7.9%	403.6	8.1%	1.5%
Jalal-Abad Oblast	851.3	18.0%	920.3	18.5%	1.6%
Issyk-Kul Oblast	411.9	8.7%	420.6	8.4%	0.4%
Naryn Oblast	248.5	5.3%	261.1	5.2%	1.0%
Osh Oblast	1,146.1	24.2%	1,247.3	25.0%	1.7%
Talas Oblast	198.1	4.2%	208.1	4.2%	1.0%
Chui Oblast	766.9	16.2%	751.4	15.1%	-0.4%
Bishkek City	735.1	15.5%	772.0	15.5%	1.0%
Total Republic	4,731.9	100.0%	4,984.4	100.0%	

Source: Demography Yearly Statistical Data on Kyrgyz Republic (1997-2002), Statistical Committ

Table 3.6 Population by nationality of the Issyk-Kul Oblast

Nationalities	Population in number		Share to total population		1999 in percent to 1989	Average Annual Population Growth (1989-1999)
	1989	1999	1989	1999		
Total population	403,917	413,149			102.3%	0.2%
Kyrgyz	273,257	328,278	67.7%	79.5%	120.1%	1.9%
Russians	92,615	54,351	22.9%	13.2%	58.7%	-5.2%
Kazakhs	6,433	6,979	1.6%	1.7%	108.5%	0.8%
Kalmucks	4,593	5,314	1.1%	1.3%	115.7%	1.5%
Uigur	3,730	3,969	0.9%	1.0%	106.4%	0.6%
Uzbeks	3,756	3,459	0.9%	0.8%	92.1%	-0.8%
Dungans	2,686	2,948	0.7%	0.7%	109.8%	0.9%
Tatars	4,013	2,785	1.0%	0.7%	69.4%	-3.6%
Ukrainians	7,366	2,772	1.8%	0.7%	37.6%	-9.3%
Germans	1,770	492	0.4%	0.1%	27.8%	-12.0%
Balkars	560	423	0.1%	0.1%	75.5%	-2.8%
Belorussians	634	157	0.2%	0.0%	24.8%	-13.0%
Other nationalities	2,504	1,222	0.6%	0.3%	48.8%	-6.9%

Source: Results of the first population census of the Kyrgyz Republic of 1999

The age-wised structures of the population of the Republic and the Issyk-Kul Oblast are illustrated on the following figures:

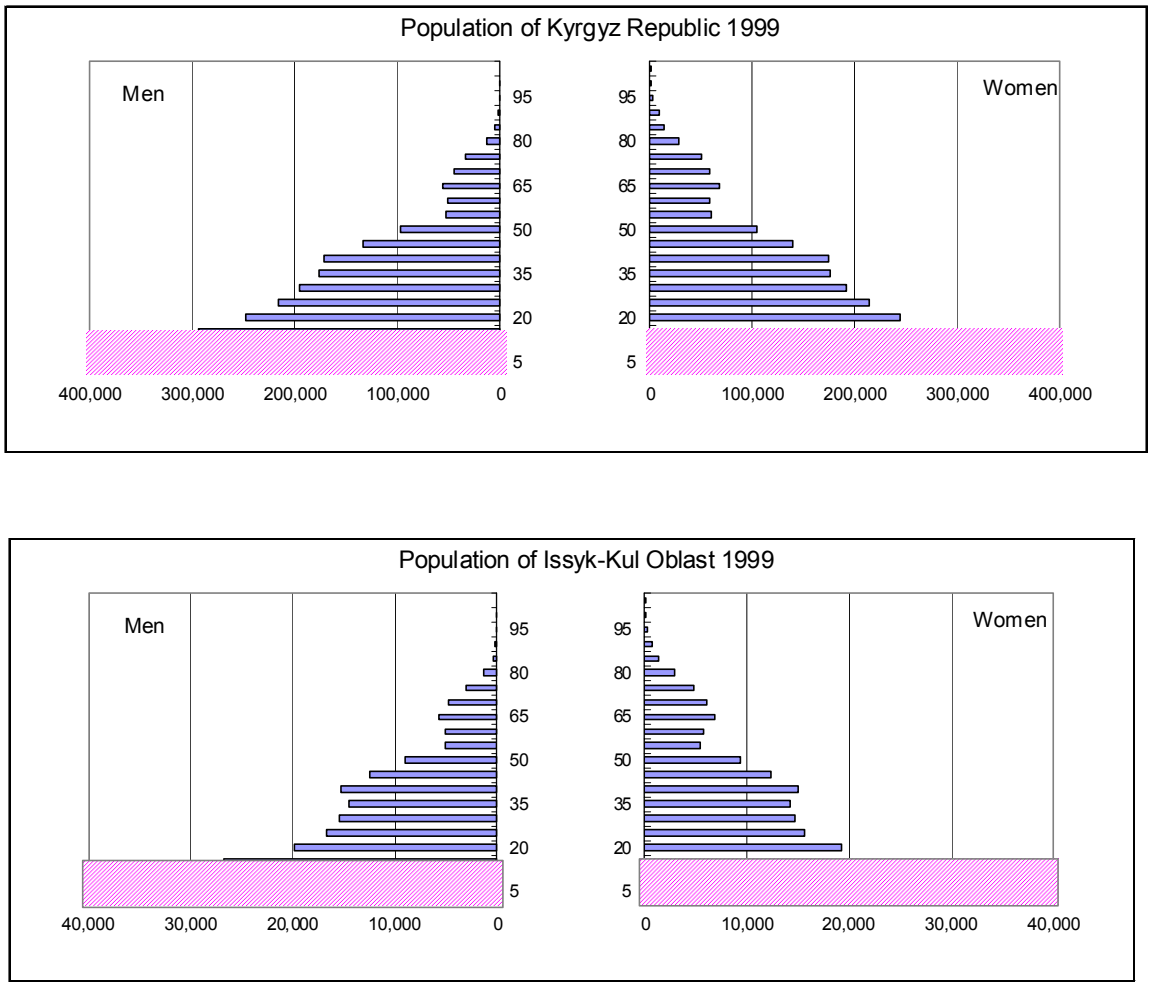


Figure 3.4 Age Pyramid of Kyrgyz Republic and Issyk-Kul Oblast

Table 3.7 Age Group Structure

	Kyrgyz Republic		Issyk-kul Oblast	
	1989	1999	1989	1999
Population younger than working age	39.5	38.1	39.7	38.4
Working age	50.3	52.7	49.9	50.9
Older than working age	10.1	9.2	10.3	10.7

Source: First National Population Census of the Kyrgyz Republic of 1999

The urban population, defined as the residents of municipalities and SUTs, has decreased in the late 1990s, due mainly to the emigration from the urban areas. The urban and rural population of the Republic and the Issyk-Kul Oblast are summarized on the following table:

Table 3.8 Urban and Rural Population

	Kyrgyz Republic			Issyk-Kul Oblast		
	1989	1999	2002	1989	1999	2002
Total population	4,257,755	4,822,938	4,984,400	403,917	413,149	420,624
Urban population	1,624,535	1,678,623	1,729,900	129,420	125,460	122,300
Rural population	2,633,220	3,144,315	3,254,500	274,497	287,689	298,324
Urban population (%)	38.2%	34.8%	34.7%	32.0%	30.4%	29.1%
Rural population (%)	61.8%	65.2%	65.3%	68.0%	69.6%	70.9%

Source: First National Population Census of the Kyrgyz Republic of 1999, Demography Yearly Statistical Data on Kyrgyz Republic (1997-2002), NSC

The urban population in the Issyk-Kul Oblast has decreased as there have not been many job opportunities in the small towns after the closure of the state owned factories. The annual population growth of Issyk-Kul Oblast in the 1990s was significantly low, at approximately 0.2 % in average.

In detail, the population of Balykchy City has been constantly decreasing since the independence as no substantial employment opportunities have been developed. While the populations of Karakol City, the capital of the Issyk-Kul Oblast and Cholpon-Ata City in the Issyk-Kul rayon, once decreased other the independence, they have recently started to increase, but are still marginal as less than 1% in the annual average rate.

As shown in the following figure, urban centers in seven LSGs of the Issyk-Kul Oblast are distributed to four particular locations around the Lake; i.e., Karakol on the eastern edge, Kalykchy on the western edge, Cholpon-Ata on the north-central, and Kajy-Say SUT on the south-central part of the Lake.

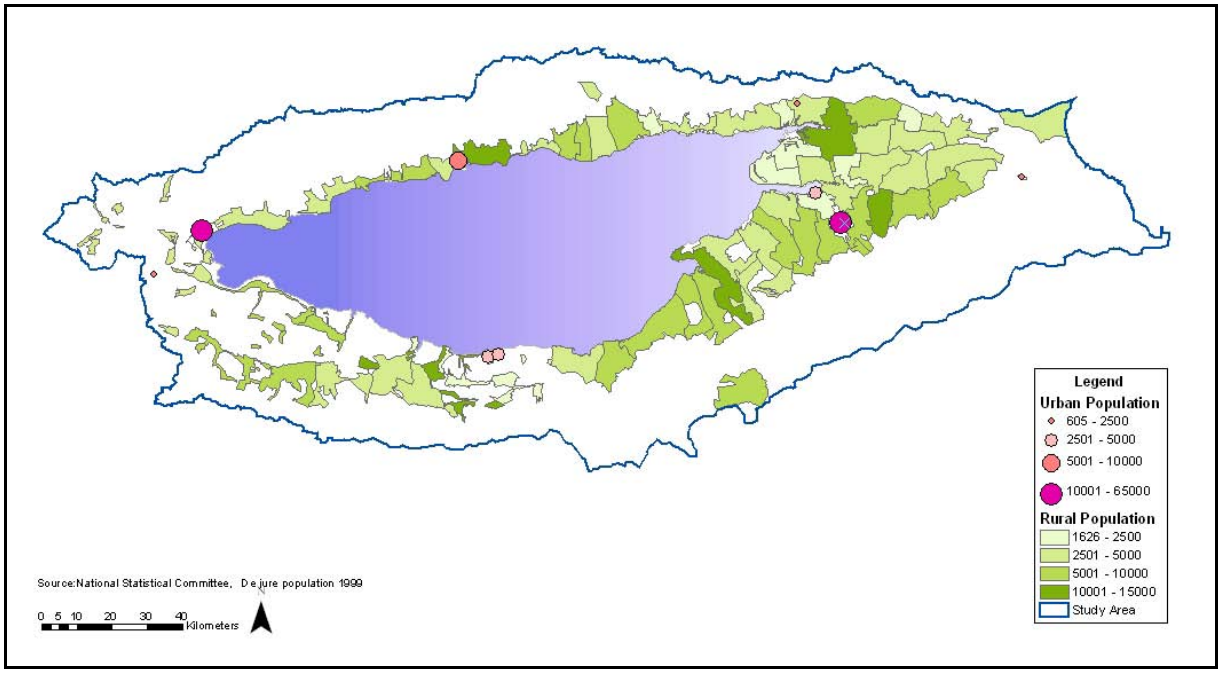


Figure 3.5 Distribution of Urban and Rural Population in the Study Area

The major economic activity of the Issyk-kul people is agriculture which engages more than 50% of the total employed population. The share of the employment in the primary sector started to decrease due to the increased job opportunities in service sector. Yet, due to the closure of the state enterprises after the independence, industrial towns such as Balykchy and Karakol experienced massive unemployment following emigration of technical experts. A relatively high unemployment ratio was observed in Balykchy (34.6%) and Karakol (24.7%) in 1999.

Table 3.9 Employment by Sectors

	Kyrgyz Republic				Issyk-Kul Oblast			
	1999		2002		1999		2002	
Total Employment	138,683		1,850,101		138,683		136,284	
Primary	86,060	62.1%	908,187	49.1%	86,060	62.1%	75,262	55.2%
Secondary	7,181	5.2%	192,699	10.4%	7,181	5.2%	10,168	7.5%
Tertiary	45,422	32.8%	749,077	40.5%	45,422	32.8%	50,853	37.3%
		100.0%		100.0%		100.0%		100.0%

Source: Labor force sample survey (November 2002), NSC

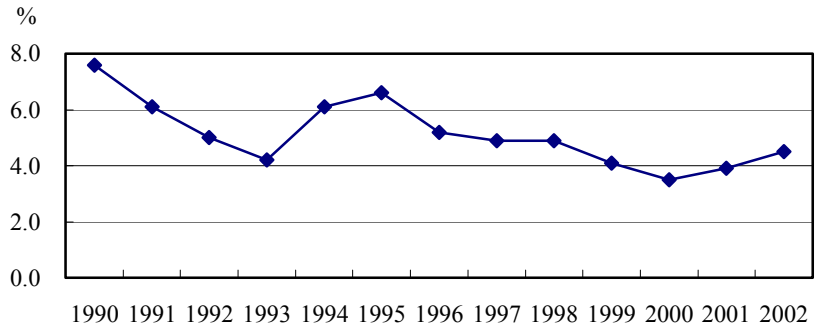
3.4 Social Environments

The social conditions in the educational and health sectors of the Issyk-Kul zone, as well as risks of the social capital, are briefly reviewed in order to identify issues to be addressed in the integrated development plan of the Issyk-Kul zone.

(1) Condition of the Education Sector

The level of education and literacy in the Kyrgyz Republic is higher than other countries at comparable levels of per capita income. Since the independence, however, the Kyrgyz people have shown much more concern about the educational environment. According to the social survey conducted by the JICA Study Team (JST) in January 2004, about 24% of all respondents or 56% of respondents under 45 years old (within childbearing age) are concerned about the education of their children mainly because they spend for school repair, fees to cover the salaries of teaching personnel, books and so on. Likewise, 40 % of respondents are concerned about the quality of education with unqualified teachers and outdated teaching materials.

Expenditure of the government budget (as percentage of GDP) in the educational sector has declined from 7.6% in 1990 to 4.5% in 2002.



Source: Common Country Assessment, The UN System, 2003

Figure 3.6 Educational Expenditure (as percentage of GDP)

In the Issyk-Kul Oblast, the number of pupils per school in Karakol and Balykchy is almost twice as the number in other rayon. Besides, the number of pupils per teacher in two cities is also higher than the number in other rayon. The number of pupil per school in the Issyk-kul Oblast by rayon is tabulated in Table 3.10:

Table 3.10 Public Day School and Pupils in Issyk-Kul Oblast (2003)

	No. of schools	No. of pupils per school	No. of pupils per teacher
Total	189	530.8	13.4
Ak-Suu	35	422.8	13.2
Jety-Oguz	39	476.7	13.1
Issyk-Kul	30	589.9	11.7
Tong	29	424.1	10.9
Tup	35	415.8	14.1
Balykchy	10	954.1	18.4
Karakol	11	1,167.9	17.3

Source: Issyk-Kul Oblast Administration

One of the difficulties in the education sector is a decline in enrollment. Graduates from the 9th grade make up 88.4% in the whole country, while graduates from the 11th grade

make up only 22.6%. Secondary enrollment rates are now below 50%, compared to 65% in 1989. It may partly be attributable to the informal payment for education even though it is ostensibly compulsory.

Needless to say, education is an important sector to develop human resources to shoulder future development of the Issyk-Kul zone and the Republic as a whole. Basic education should be equally provided to everyone regardless of their income levels. To this end, it is important to ensure appropriate educational budgets. The community could contribute to the improvement of the educational environment voluntarily in terms of cost shouldering and labor works if their poverty level would be reduced and the social capital would be strengthen.

In addition to school education, youth education is quite important to foster the mental health of the youth because the young generation is concerned about unemployment and their future. Drug abuse by adolescents is a serious problem. In this context, vocational training is to be improved to make it practically useful. Especially, education for promotion in the IT software industry is required in the middle and long terms.

(2) Condition of the Public Health Sector

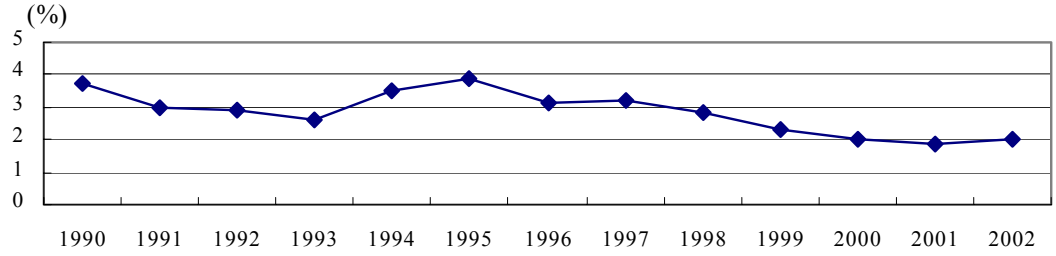
A healthy life is the most basic element of human capability and contributes to social and economic development. Before the independence, the function of the Ministry of Health (MOH) was to administer the policy made in Moscow. But since then, MOH has been responsible for developing its own policy of the public health sector. A health reform project called “MANAS” was designed in 1994 and has been implemented since 1996 with support from the World Bank, USAID, the Swiss Development Corporation and other donor agencies. MANAS has focused on restructuring hospitals and the Sanitary Epidemiological Services (SES) to strengthen primary healthcare and replace polyclinics with a network of family physicians at the primary level. In line with the health reform (MANAS), the Mandatory Health Insurance Fund (MHIF) was established as a juridical independent body. The MHIF is effective and contributes to the poor people who cannot afford to pay for medical services.

Major diseases are brucellosis, tuberculosis, Hepatitis B, TB, HIV/AIDS, iodine deficiency disorders, iron-deficiency anemia, etc. Most of these diseases are caused by worsening conditions of living, such as poor access to safe drinking water and insanitation, deficiency of nutrition due to poverty, and difficult access to medical services

According to the social survey conducted by the JICA Study Team (JST), in the Issyk-Kul zone, the people are seriously concerned about healthcare. Healthcare is the most serious problem (56% of respondents), followed by economy (55.8%), society

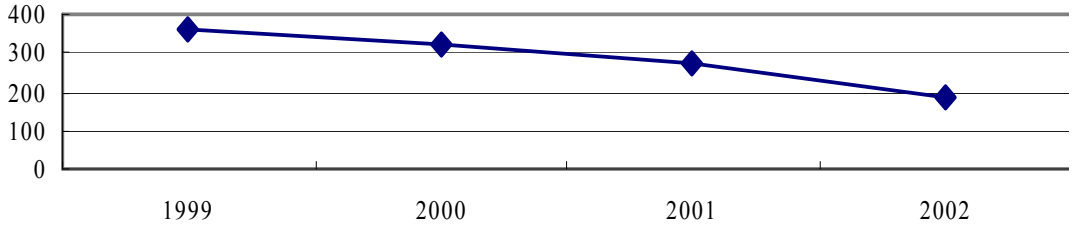
(41.3%), drinking water (33.7%) and education (24.0%)[1]. Their concerns are; (i) a long distance to hospitals, (ii) lack of skilled personnel, (iii) outdated equipment or no equipment at all, (iv) expensive medicine and supplies, and (v) hospital facilities in poor condition.

The Government budget in the health sector has been gradually declining from 3.7% of GDP in 1990 to 2.0% in 2002 as shown below. It is said that the resources allocated by the budget cover only 50% of costs in the health sector.



Source: Common Country Assessment, The UN System

Figure 3.7 Government Budget in Health Sector (as a percentage of GDP)



Source: Ministry of Health

Figure 3.8 Number of Hospitals in Kyrgyzstan

With the decline in the budget, the healthcare system has been deteriorating. The number of doctors has decreased slightly while the number of hospitals and beds has decreased reflecting the policy of emphasizing medical first aid before hospitalization.

In Issyk-Kul Oblast, the number of doctors and doctors per people has declined. The ratio of doctors per 10,000 people in the Oblast in 2002 (21.4) was smaller than the national average (26.0). It is as low as 9.1 in Ak-Suu and 9.7 in Jety-Oguz Rayons.They are nearly one third of the national average. While in Karakol city, it is exceptionally high (63.2), but the number of hospital beds have decreased. In 2002, the ratio of beds per 10,000 persons in the Issyk-Kul Oblast reduced by 41% from 2000, 21% in the whole republic and 8% in Bishkek. In addition, the ratio of beds in Issyk-Kul Oblast is at the land of 57.5% of the whole republic. By Rayon, it is 12.5 in Tong and 18.4 in Jety-Oguz Rayons. There is a large gap in the level in the same Oblast. It is reported that

[1] Triple answers (top 3 problems)

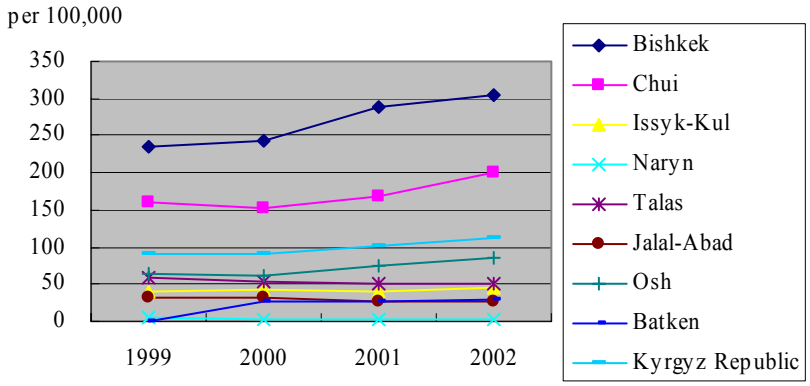
young doctors do not want to stay in rural areas. There are no cars at the first medical aid centers in many rayons, and doctors go to patients houses on foot causing problems in case of emergency.

Table 3.11 Number of Doctors and Beds (2000-2002)

	Number of doctors of all specialties including dentists						Number of beds					
	absolute number			per 10,000 people			absolute number			per 10,000 people		
	2000	2001	2002	2000	2001	2002	2000	2001	2002	2000	2001	2002
Kyrgyz Republic	13,799	13,379	12,909	28.2	27.2	26.0	34,412	30,313	27,447	70.4	61.5	55.3
Issyk-Kul oblast	**1,045**	**955**	**897**	**25.1**	**22.8**	**21.4**	**2,243**	**1,513**	**1,335**	**53.8**	**36.1**	**31.8**
Balykchi city	(88)	(97)	(98)	(21.1)	(23.6)	(23.6)	(325)	(175)	(175)	(77.8)	(42.0)	(42.2)
Karakol city	(545)	(475)	(426)	(79.1)	(69.4)	(63.2)	(975)	(710)	(592)	(141.5)	(103.8)	(87.8)
Ak-Suu rayon	(61)	(57)	(53)	(10.8)	(9.9)	(9.1)	(228)	(151)	(151)	(40.2)	(26.3)	(25.9)
Jety-Oguz	(80)	(79)	(75)	(10.6)	(10.3)	(9.7)	(210)	(142)	(142)	(27.9)	(18.6)	(18.4)
Issyk-Kul	(135)	(126)	(130)	(18.9)	(17.6)	(18.2	(200)	(130)	(110)	(28.0)	(18.2)	(15.4)
Tong rayon	(66)	(58)	(55)	(14.0)	(12.2)	(11.5)	(135)	(100)	(60)	(28.6)	(21.1)	(12.6)
Tup rayon	(70)	(63)	(60)	(12.7)	(11.3)	(10.6)	(170)	(105)	(105)	(30.7)	(18.8)	(18.6)
Batken oblast	650	645	629	16.6	16.3	15.7	2,511	2,426	2,247	64.3	61.3	56.0
Jalal-Abad oblast	1,505	1,494	1,448	17.0	16.6	15.8	5,457	4,940	4,319	62.2	54.9	47.3
Naryn oblast	603	592	516	23.8	23.1	19.9	1,515	1,480	891	59.9	57.8	34.3
Osh oblast	2,180	2,177	2,143	18.1	17.8	17.3	7,236	6,854	6,469	60.2	56.2	52.2
Talas oblast	462	425	401	22.8	20.8	19.4	1,192	1,113	827	58.8	55.8	40.0
Chui oblast	1,634	1,466	1,393	21.2	19.2	18.5	4,318	2,658	2,440	56.2	34.9	32.3
Bishkek	2,366	2,356	2,287	30.8	30.7	29.7	2,259	2,215	2,090	29.5	28.8	27.1
Republican Institutions							7,681	7,114	6,829			

Source: Ministry of Health

The health indicators reflect an increase in the kind of risk-taking behavior generally associated with an adverse social environment, including drug abuse and unsafe sexual behavior. Sexually transmitted infections, including HIV/AIDS, have also become increasingly common. The number of drug addicts in the Republic is estimated to be about 80,000 to 100,000, which is approximately 2% of the total population.



Source: ditto

Figure 3.9 Registered Drug Addicts

For the improvement of the people's health conditions, it is important for the government to implement the health reform (MANAS) as it was programmed. In parallel with the government effort, a community based approach would be effective. If people could overcome the poverty with better nourishment, they could afford to pay for decent medical services and the incidence of diseases would reduce. In addition, if they were empowered, they could improve their living environments in such ways as safe water and a sanitary environment.

Educational campaign of primary healthcare is also important. Youth education is also crucial in recovering from mental health conditions of the young generation who suffer from poverty, unemployment and drug abuse.

(3) Social Capital

After the independence and transfer to the market economy, the social structure changed substantially in every part of the communities. Through the questionnaire survey conducted by the JICA Study Team and interviews with villagers in the Issyk-Kul zone, it was pointed out that the social capital has risks that include the following:

Collapse of Social System
A systematic social system before independence has not required the people to consider and behave initiatively. After independence, however, collective forms, and state factories have collapsed, making production systems, marketing systems, and distribution systems dysfunctional. Distrust is common in communities. As a result, it is difficult to promote specialized work divisions of labor under the market economy.

Risk of Youth
The youth, who will shoulder the future, are at a risk of lack of education, unemployment, and alcohol and drug abuse problems. Educational problems, such as informal payment for education, unqualified teachers, insufficient texts, cause decline in enrollment and academic abilities. Even if they graduate from schools, little opportunity of employment is available. Some of them abuse alcohol and drugs. It is necessary to motivate them in groups to have a common target in social and economic activities.

Risk of Community Disfunction
A number of communities are facing a concern for dysfunction because young people are addicted to drinking and drugs, quarrel and cause trouble. They cannot work off their energy. Groups need to be organized to create their interests in social and economic activities.

Judging from the social environments as noted in (1) to (3) above, it is important to re-establish a rational social system by motivating and organizing collaborative groups with a participatory approach. To this end, it is necessary to strengthen and re-activate community and social capital so that the people think for themselves, act initiatively and voluntary, and cooperates mutually.

Common places, opportunities and programs are essential to motivate and organize community activities. Common places will enable the people to get together physically, and opportunities encourage them to meet each other. Programs, which provide them with ideas, technologies and funds, will enable them to organize themselves to do something. Once a community is re-organized and re-activated, it can construct, renovate, operate and maintain their community facilities on its own. This will improve the living environment in the community and encourage economic development.

3.5 Regional Economy

The Gross Domestic Product (GDP) of the Kyrgyz Republic was 75,400 million soms in 2002, with a GDP per capita estimated to be about US$320. The GRDP of the Issyk-Kul Oblast was 8,230 million soms, accounting for about 11% of the national GDP. The macro-economic position of the Issyk-Kul Oblast is briefly reviewed, together with the overview of the economic sectors.

(1) Macro Economy

The Issyk-Kul Oblast has the Kumtor gold mining company which accounted for nearly 40 % of total industrial output and 50% of exports of the Republic in 1998. Thus, the economic indicator of the oblast shows distinct features compared with other oblasts. The table below shows the macroeconomic features of the Republic and Issyk-Kul Oblast. Despite the fact that the output of Kumtor has been 30% less than that of the previous year due to the accident in 2002, the share of the value added on Kumtor is still fairly large in the Issyk-Kul Oblast. With Kumtor's output, the Gross Regional Outputs per capita in the Issyk-Kul Oblast is approximately 25% more than that without it. Given that the Kumtor gold mining production is expected to decrease, the production output of the industry will be expected to decrease accordingly. Other sectors such as the tourism and agro-based industries need to play a significant role for accelerating the output growth of the region.

Table 3.12 Macroeconomic Features (2002)

GDP (million soms)	Kyrgyz Republic		Issyk-Kul Oblast			
			With Kumtor		Without Kumtor	
GDP	75,366.7	-	8,228.1	-	6,561.3	-
Agriculture	25,926.1	34.4%	3,750.2	45.6%	3,750.2	57.2%
Industry	13,490.6	17.9%	2,523.4	30.7%	366.7	5.6%
Construction	2,562.5	3.4%	151.4	1.8%	151.4	2.3%
Service	33,387.4	44.3%	1,636.8	19.9%	1,636.8	24.9%
Population (thousands)	4,984.4	-	419.7	-	419.7	-
GDP per capita in KGS	15,120.5	-	19,604.7	-	15,633.3	-
GDP per capita in USD*	322.4	-	418.0	-	333.3	-

* Exchange rate of KGS /USD in 2002 is 46.9
Source: Ministry of Finance and NSC

(2) Agriculture

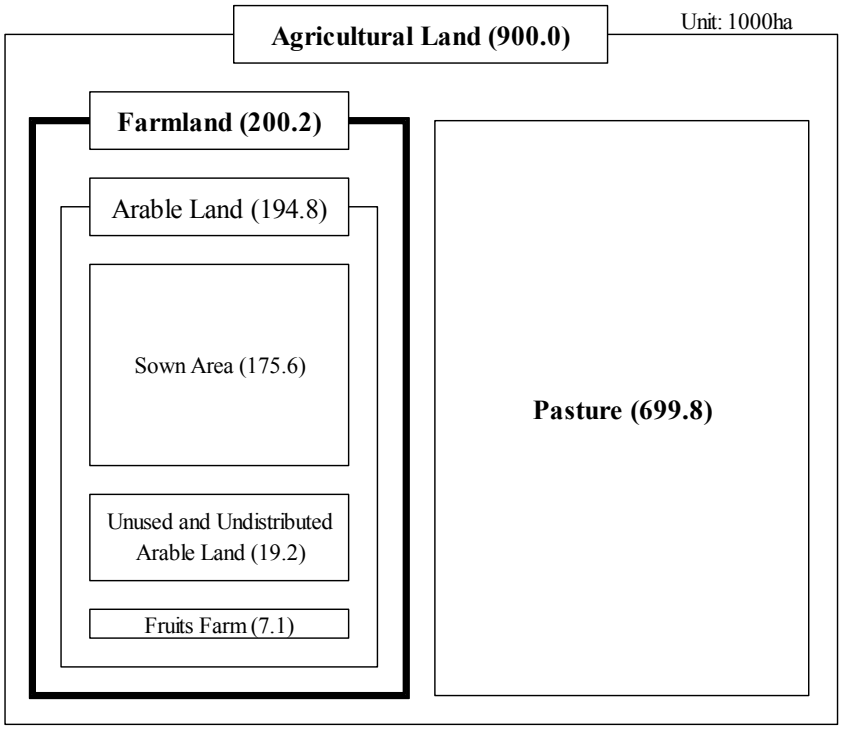
In 2002, the arable land area used for the agricultural production in the Kyrgyz Republic was 1,306,787 ha. During the last ten years, arable land area has been reduced by 39,300 ha (by 2.8%). Of total arable land, 1,085,600 ha (83.0%) are under agricultural crops, 12,922 ha (1.1%) nursery gardens/fallows, and 208,265 ha (15.9%) are unused and/or undistributed. Arable land is distributed over the country, i.e. 33% of arable land (435,863 ha) in Chui oblast, 15% (194,931 ha) in Issyk-Kul, 15% (190,748 ha) in Osh, 13% (168,458 ha) in Jalal-Abad, and 0.1% (1,456 ha) in Bishkek. In Issyk-Kul Oblast, sown area is 175,600 ha (90.2% of arable land), unused arable land is 6,699ha (3.4%), and undistributed arable land in Aiyl Okmotu is 12,484 ha (6.4%). The proportion of the sown area is the highest in all Oblast, and the Issyk-Kul zone played a significant role in the Kyrgyz agricultural development.

Agricultural population in the Issyk-Kul Oblast was 74,298 in 2002, decrease of 14.6 % from 85,973 in 1999, accounting for 55% of the employed population (decrease from 62% in 1999).

Table 3.13 Agricultural Population in Issyk-Kul Oblast

		1999		2002	
A	Total Population	413,149		420,600	
B	Employed Population	138,683	B/A 33.6%	136,284	B/A 32.4%
C	Agriculture, Hunting, Forestry	85,973	C/B 62.0%	74,298	C/B 54.5%

The agricultural land in the Study Area is estimated to be around 900,000 ha, based on the data available in the Issyk-Kul Oblast. The structure of agricultural land is illustrated on the following figure:



Source: Results of the First Agricultural Census of the Kyrgyz Republic in 2002/2003

Figure 3.10 Structure of Agricultural Land in Study Area (2002)

The development issues in the agricultural sector are analyzed from the view points of (i) regional planning, and (ii) farmers positions.

From a viewpoint of developing high value-added agriculture, the following points are demarcated:

(i) Mono-Culture
The major crops are wheat, forages, potatoes and barley, accounting for 98.8% of the sown area. The sown area of cereals is 66%, industrial crops (tobacco, sugar beet, oil crops) are 1.9%, and vegetables are 0.7%. The fruits are cultivated in 7,100 ha. This mono-culture type is one of the reasons for low value-added in agriculture.

(ii) Low Value-Added
There are some fruits processing factories in Issyk-Kul Oblast. Although juice and jam are made in factories, they cannot fully operate due mainly to lack of qualified raw fruits in Issyk-Kul Oblast. Further, the processing machines are absolute. While high quality fruits (30%) are exported to Kazakhstan, Russia etc., other fruits should be processed. However, most of them are used for livestock feed of livestock because of low quality. Therefore, the value-added to agricultural products is quite low.

(iii) Lack of Linkage with Tourism

Most of products are currently sold to merchants/visiting dealers, and farmers do not have wholesale routes or direct sale routes to hotels/retail stores as they are not organized for marketing. There is no linkage with the tourism industry in marketing.

Through the questionnaire survey to farmers, major constraints of agricultural production have been identified as follows:

(i) Shortage of Irrigation Water

Irrigation facilities have been constructed for 163,500 ha, or 84% of arable areas in 2002 (194,900 ha). However, 58% of farmers noted that irrigation water is short for cultivation, due mainly to water leakage in decrepit irrigation facilities. The loss of intake water in 2002 was reported to be as high as 32%. Irrigation accounts for 76% of intake water. Therefore, the decrepit irrigation facilities should be rehabilitated.

(ii) Lack of Fund for Inputs/Machinery

More than 40% of farmers noted difficulties in financial arrangement for farming. The private organization, Bai-Tushum operated micro-finance for farmers, but it is not operation anymore. The financing is requires at the level of 100,000 som/family/year. Micro-finance previously operated in Ak-Suu Rayon had the interest rate of 25% to 35% per annum with a return rate of more than 90%.

(iii) Low Quality Seeds

The questionnaire survey revealed that 90 % of farmers pointed out high prices of seeds and 70% noted low quality of seeds, with the implication that the shortage of funds will lead to low quality seeds and low productivity.

(iv) Lack of Technical Assistance

10% of farmers noted the shortage of technical assistance, while 12% pointed out inadequate application of fertilizer. Only three out of 59 farmers replied that they actually received technical assistance.

(v) Low Selling Prices

68% farmers or 40 out of 59 farmers pointed out low selling prices in marketing. Most farmers (98%) sell products to merchants/visiting dealers, which has resulted in low selling prices. Also, they do not have any wholesale routes of high margin, for example, direct sales to hotels/sanatoriums.

The productivity of cereals has been decreasing since 1999. It appears that the shortage of irrigation water, lack of funds for inputs/machinery and lack of technical assistance are major reasons for the decreasing productivity. Low selling prices and the resultant

low income invite vicious cycles. The household net income is about $180/year.

Table 3.14 Major Constraints in the Agricultural Sector

(Plural answer)

	Number of Answer	Percentage in the 59 Farmers (%)
Shortage of irrigation water	34	57.6
Lack of fund	26	44.1
High taxes for owned land	19	32.2
High prices of seeds	11	18.6
Low quality of seeds	10	16.9
Inadequate application of fertilizer	7	11.9
Lack of technical information	6	10.2
Lack of machines, fuel and lubricants	6	10.2
Damage by wild animals or insects	4	6.8
Weed damage	3	5.1
Salinity of soil	2	3.4

Source: Social Survey by JICA Study Team, 2004

(3) Tourism

Absence of reliable tourist data is a critical problem for tourism development planning in the Kyrgyz Republic, as well as in the Issyk-Kul zone. For instance, Karakol municipality in the Issyk-Kul Oblast submits annual tourist records to the State Committee in February/ March of every year. However, it is reported that only 20% of hotels and sanatoria submit their guest registration records and none of the pensions and private B+B guest houses submit such guest records for some reasons. Another source of data in Issyk-Kul is the number of vehicles which pass passed through the gate at Balykchy, constructed by GTZ cooperation in 2001, which is also considered to be unreliable because the gate does not issue receipts to all passers.

According to the State Committee for National Statistics and State Committee for Tourism, Sports and Youth Policy, foreign visitors to the Kyrgyz Republic are reported as summarized in the following table. They reached around 191,000 in 2003.

Table 3.15 Foreign Visitors to the Kyrgyz Republic (thousand people)

	1997	1998	1999	2000	2001	2002	2003
Total Arrival	87,386	59,363	48,272	58,756	98,558	139,589	247,600
Increase Ratio	-	33.2%	-18.7%	21.7%	67.7%	41.6%	77.4%
CIS Visitors	72,202	42,027	31,180	40,355	68,279	80,475	176,700
CIS visitors in %	82.6	70.8	64.6	68.7	69.3	57.7	71.4%
Non CIS Visitors	15,184	17,336	17,092	18,401	30,279	59,132	70.900
Non CIS Visitors in %	17.4	29.2	35.4	31.3	30.7	42.3	28.6%

Source : National Statistical Committee,
The State Committee on Tourism, Sport and Youth policy

As shown on the above table, visitors from the CIS countries account for over 60% of total foreign visitors. Major CIS tourist arrivals are broken down into the following table. Kazakh tourists are predominant, representing around 49% of CIS tourists or 33%

of total foreign visitors to the Kyrgyz Republic.

Table 3.16 CIS and non-CIS Visitors to the Kyrgyz Republic (thousand people)

	2001	2002	2003
CIS Total	68,279 (100.%)	80,475 (100%)	130,015 (100%)
Kazakhstan	47,173 (69.1%)	51,893 (64.5%)	63,635 (48.9%)
Russia	1,374 (2.0%)	14.548 (18.1%)	40,186 (30.9%)
Uzbekistan	8,076 (11.8%)	9,271 (11.5%)	16,717 (12.9%)
Others	11,656 (17.1%)	4,763 (5.9%)	9,477 (7.3%)
1. USA	3,979	10,833	13,076
2. China	5,240	7,495	8,966
3. Germany	3.039	6,820	7,979
4. Turkey	3,261	5,864	7,230
5. France	1,106	4,462	1,451
6. UK	1,888	2,958	2,083
7. Korea	1,053	1,689	2,696
8. Netherlands	628	1,102	1,543
9. India	358	1,590	1,486
10. Canada	409	1,053	1,036
11. Japan	1,645	1,463	639
Others	7,673	6,810	22,815

Source: State Committee for National statistics,
State Committee for Sports, Tourism and Youth policy

According the State Committee for Sports, Tourism and Youth Policy, 64% of foreign visitors are holiday tourists, and 29% are business trippers who participated in tourism while staying in the Kyrgyz Republic. The average length of their stay was 6.3 days/person in 2003, ranging from 1~3 days/person for non-CIS visitors to 4~6 days/person for CIS visitors.

Based on the tourist data obtained from the publications, Karakol municipality, statistics at the Balykchy gate, articles of local newspapers and magazines, and discussion with private tour companies, tourist arrivals in Issyk-Kul zone have been estimated as shown in the table below.

Table 3.17 Estimated Tourist Arrivals (Foreign and Domestic)

	1998	1999	2000	20001	2002	2003
Issyk-Kul Zone	59,400	48,300	58,800	147,000	157,200	250,000*

*160.000 foreign tourists and 90.000 domestic tourists
Source: The Committee for Sports, Tourism and Youth Policy

The above figures include not only tourists who stayed in resort hotels, sanatoria, pensions and private B+B houses but those who stayed in mountain cottages, lodges, private houses and yurtas in the rural and mountain areas. Nationalities, sex, and age groups of the tourists are unidentified. The average length of stay in Issyk-Kul is estimated to be 1 to 3 days for foreign tourists and more than 5 days for domestic tourists.

According to the data available at the State Land Administration of the Issyk-Kul Rayon, there are 110 facilities for accommodations in the rayon as of the end of 2003, of which 61 are owned by public sector and 36 by private companies (13 facilities not registered). The number of beds in the Issyk-Kul Oblast, reported by the National Statistics Committee of Kyrgyzstan, was 29,740 in 2003 (the numbers of rooms is unavailable). It is estimated that the total number of rooms in the Issyk-Kul zone would be approximately 8,000, occupying 2,000 ha of land.

Table 3.18 Hotels and Accommodations in Issyk-Kul zone

	2002	2003
Number of Hotels and other Accommodation	132	110
Public Owned	100	61
Private Owned	32	36
Not registered	-	13
Number of Rooms	8,000	na
Number of Beds	26,547	29,700
Land Development Area	1,900 ha	2,000 ha

Source: National Statistical Committee

There are several development projects proposed in the Issyk-Kul zone. The Aga Kahn Foundation proposes seven projects, including a holiday resort hotel with 200 rooms. Another resort hotel development project is proposed by an European company having experience in resort development in South Africa (200 rooms). A Turkish company also proposed to construct a resort hotel of 200 rooms. Other than those, TACIS established two tourism information offices in Karakol and Kajy Say, and GTZ is preparing to build two Biosphere Information Centers in Cholpon Ata and Balykchy. The following figure shows the location of such proposed facilities.

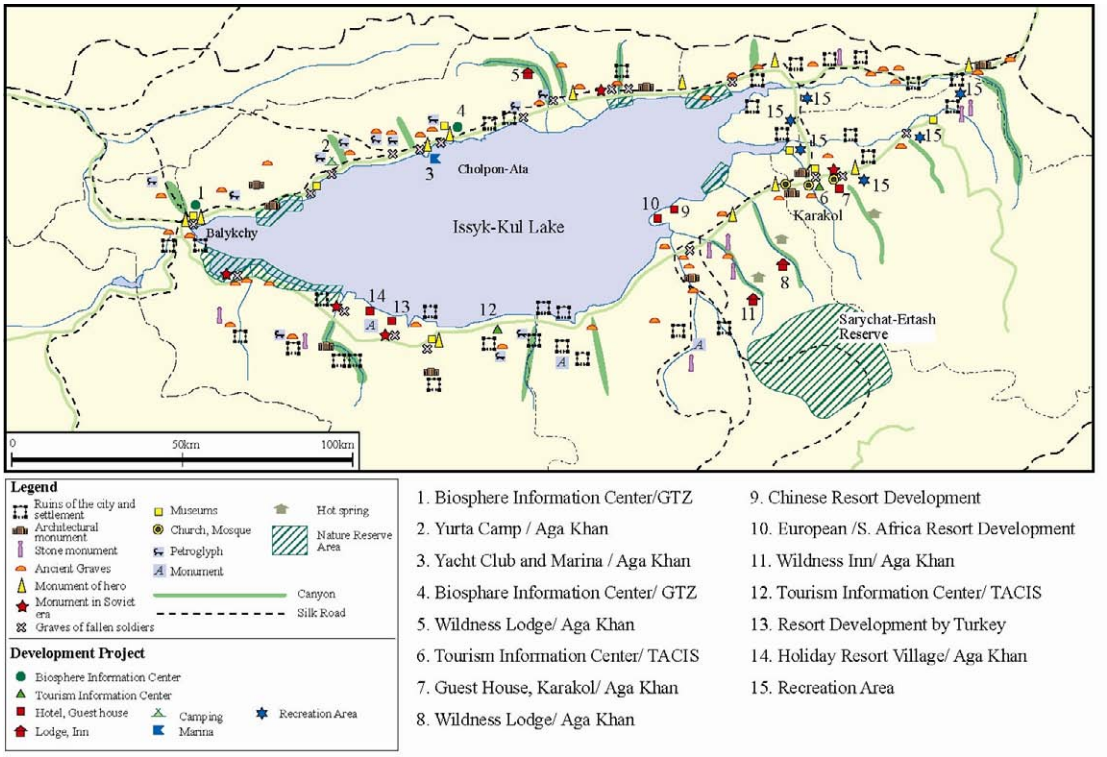


Figure 3.11 Reported Tourism Development Projects

For development of tourism in the Kyrgyz Republic and Issyk-Kul, human resource is the most serious constraint. Absence of a welcoming attitude, service mind and hospitality, especially in airport, hotels and restaurants, are providing negative images of Kyrgyz tourism to the arriving tourists. Although, there are some tourism educational institutes in Bishkek (e.g. tourism academy and universities with 2,400 students studying in the tourism course), most teaching staff have received service education in USSR and few of them have knowledge and experience in modern international tourism services.

In the Issyk-Kul Oblast, Karakol University has a tourism study course. In 2003, it is reported that 331 student were enrolled. However none of the teaching staff is capable of guiding students to the level of international tourism services. The human resource development division of the State Committee of Sports, Tourism and Youth Policy has carried out tourism seminars in cooperation with the Solos Foundation, Merrilyne Foundation and Helvetas. Further, in 2001, the Committee held a human resource development seminar for CBT (Community Base Tourism) supported by Helvetas. Since the government abandoned the licensing system of tourism guides in 1999, the Alpinist Federation has been practically acting as a qualification organization of mountaineering guides for the safety of climbers. Other ordinary tour guides are not requested to have licenses and are employed by tour companies.

For international and domestic marketing, the State Committee of Tourism, Sports and

Youth Policy is taking initiatives. The Committee has 6 staffs with an annual budget of $100,000. Major activities are to collect information, hold promotional events, print brochures and pamphlet, produce CD and video, and participate in international tourism faire in Berlin and London. There is no regional cooperation with neighboring countries, except for the regional tourism fare held in Kazakhstan and Uzbekistan and the business faire in Issyk-Kul for the tour operators.

There are no specifically attractive handicrafts in the Kyrgyz Republic, partly because the ethnic characteristics have not been respected during the USSR regime and some traditional handicrafts disappeared during the period. Nowadays revival of traditional handicrafts production and participation of foreign tourists in felt making has started, though the motifs of design are inadequate for most tourists. In order to promote handicrafts for tourists and increase local incomes, it is necessary to modernize design and enhance production skills acceptable for daily life of foreign tourists (e.g., house shoes, tapestry and lamp shades with modern but traditional cultural design motifs).

The local traditional culture of nomad's life will be one of the tourism attractions. Horse riding, yak riding, visiting yak farms and fruits garden and CBT (Community Based Tourism) are income generating attractions and contribute to increased employment in the tourism industry. A CBT has been promoted by Helvetas, and basic knowledge and promotion organizations have been established in many regions in the Kyrgyz Republic.

Agriculture is one of the most important industries related to tourism. Supply of organic vegetable, fresh fruits, fresh meat, processed meat product, milk product, honey, and other processed products will attract tourists and generate local incomes. The requirements for quality and quantity of products are good incentives to upgrade farming technology and marketing system in the local community.

Consequently, the tourism sector in the Issyk-Kul zone is analysed to have the following strengths and weaknesses:

Strengths

(i) Abundant untouched unique natural settings are big attractions for the nature tourism, eco-tourism and adventure tourism.
(ii) Reputation of Issyk-Kul Lake as a resort zone is still high in CIS countries,
(iii) There are complementary attractions of tourism resources and products with neighboring countries, which will serve to produce diversified tour products.
(iv) The Issyk-Kul region has 300 sunshine days a year which is quite attractive for the resort area.
(v) Tourism facilities and basic infrastructure are still usable with appropriate rehabilitation.

(vi) The Issyk-Kul region is easily accessible from the potential tourist markets (e.g., China, India and Kazakhstan).

Weaknesses

(i) Tourism products are basically oriented to nature tourism; diversification of tourism products is required.
(ii) Resort tourism has been developed individually without appropriate guiding and collective efforts to generate attractive atmosphere of the resort area.
(iii) New resort destinations have been developed in the gulf countries and Mediterranean by which Issyk-Kul tourism will face tough marketing competition.
(iv) The service system of the USSR type still remains in many hotels and restaurants which discourages tourists.
(v) Tourism transport services are limited for potential domestic and FIT tourists.
(vi) Access mode for skiing and mountaineering is inconvenient for small tourist groups.
(vii) International access to Kyrgyzstan is still inconvenient for non-CIS long haul tourists.

Opportunities

(i) With diversified tourism products, Kyrgyzstan and Issyk-Kul tourism zone will become more attractive.
(ii) The favorable interrelation among resort facilities, if established, will make the Issyk-Kul lake zone more enjoyable.
(iii) If service quality and hospitality are internationalized, the Issyk-Kul holiday tourism zone will become one of the best resort zones in the CIS region.
(iv) With the improvement of the tourism transport system, more domestic resort tourists will be attracted to the Issyk-Kul zone.
(v) With the improved international access, Kyrgyzstan will be regarded as one of the attractive middle ranged distant destinations.

Threats

(i) Social instability and unrest in some neighboring countries (e.g., Afghanistan and Pakistan) may become a threat for the Central Asia tourism development.

(4) Industry and Trades

In the Soviet times, the Kyrgyz Republic specialized in; (i) heavy industry- machine engineering and metal works including munitions factory, (ii) light industry- textile related industries, and (iii) agricultural production, basically meat for processing in the Soviet Union. Agriculture-processing industry produced wool, leather, cotton, silk cocoons, tobacco, meat and sugar. The highly specialized industrial sector manufactured electro-technical equipment, machine engineering, small computers, and electric lamps.

After the independence, the demands for industrial products and subsidies for industrial production (grant, support, assistance, etc.) from the former Soviet Union (FSU) were drastically reduced. Price hikes in imported energy and raw materials also had negative impacts on the Kyrgyz industrial environment. Thus, the GDP had declined since 1990 and it became almost half in 1995. Industrial products reduced to 65% of 1990's production. The collapse of the distribution system in FSU, which had been reliable and relatively cheap, was another reason for losing the outside large market in the Kyrgyz industry sector.

From the late 1990s, however, the manufacturing industry of the Kyrgyz Republic has been recovering, although its progress is relatively slow as shown below.

Table 3.19 Volume of Production and Share in GDP by Sector

(Unit: million USD)

Year	1998	1999	2000	2001
Manufacturing	289.5	250.0	321.3	329.9
(As % of GDP)	16.3%	21.7%	23.3%	21.3%
Of which: Light Industry	92.8	45.2	55.7	54.7
(As % of GDP)	5.2%	3.9%	4.0%	3.5%

The CIS in Interstate Statistics Committee announced in February 2004 that the industry output in the CIS countries increased by 8% on average for 2002 to 2003 showing a higher rate from the previous period (5%). The highest growth in 2003 was achieved by the Kyrgyz Republic (17 %).

Table 3.20 Comparison between 2002 and 2003 in Some CIS Countries

	GDP growth	Inflation Rate	Industry Output Growth	Investment in basic capita
CIS Average	7.0%	N.A.	8.0%	N.A.
Kyrgyzstan	6.7%	5.6%	17.0%	9%
Kazakhstan	9.2%	6.8%	8.8%	11%
Tajikistan	10.2%	12.0%	10.2%	N.A.
Russia	7.1%	8.6%	7.0%	12.5%
Ukraine	8.5%	8.2%	15.8%	(Jan-Sep) 33.0%

Source: CIS Interstate Statistics Committee

Major exports of the Kyrgyz Republic are precious metals ($227 million in 2001), electric power ($47 million), cotton ($22 million) and tobacco ($26 million). The export value in 2001 ($476 million) was reduced from the previous year ($505 million). The following table shows major export products in recent years:

Table 3.21 Major Export Products

Items	Units	2000		2001	
		Q-ties	mil USD	Q-ties	mil USD
Total			**504.5**		**476.1**
Milk and milk products	th. tons	4.3	1.4	5.0	3.0
Vegetables and fruits	th. tons	82.1	7.8	56.4	9.4
Tobacco	th. tons	26.7	**30.2**	29.8	**25.6**
Electric power	kWt	3,153.0	**79.8**	2,164.7	**46.8**
Hide			6.7		8.3
Cotton			**33.9**		**22.2**
Slate	th. tons	65.9	3.0	98.4	4.3
Precious metals			**196.9**		**226.7**
Waste & scrap of non-ferrous metals	th. tons	50.6	**24.6**	4.9	**2.8**
Mechanical engineering items			15.5		12.3
Electric machines and equipment			17.8		16.2
incandescent lamps	mil pcs	190.6	11.6	207.7	12.2

Source: NSC

Total import of the Republic was $467 million in 2001. Major import items are oil products ($67 million), machinery ($43 million), natural gas ($33 million) and pharmaceutical products ($23 million), as shown on the following table:

Table 3.22 Major Import Products in 2000 and 2001

Items	Units	2000		2001	
		Q-ties	mil USD	Q-ties	mil USD
Total			**554.6**		**467.2**
Confectionery	th. tons	4.0	3.0	4.1	3.3
Tea	th. tons	3.6	5.2	3.5	5.2
Wheat	th. tons	223.2	33.3	74.3	6.7
Beer	th. liters	4,196.1	28	7,618.5	4.0
Tobacco items	mil pcs	1,660.6	11.0	1,580.7	9.8
Coal	th. tons	749.2	11.1	345.6	6.4
Oil products			**728**		**66.7**
including, petrol	th. tons	97.0	24.0	101.9	22.0
kerosene	th. tons	40.4	11.5	38.7	12.0
diesel oil	th. tons	83.9	17.2	85.0	19.9
Natural gas	mil. c. m	651.9	**33.2**	665.7	**33.2**
Pharmaceutical products			**22.3**		**23.1**
Plastic and plastic items			13.2		13.9
Soap and washing items			46		61
Paper and cardboard			12.4		11.3
Printed matter			33		15
Clothing (knitted fabric, textiles)			10.6		96
Footwear			50		48
Furious metals			76		73
Ferrous metal-ware			**10.0**		**84**
Mechanical engineering items			**65.2**		**42.5**

Source: NSC

The industry of the Issyk-Kul zone is represented by the Kumtor gold mine located to the south of the Issyk-Kul lake watershed. Its output contributes to nearly 90% of the

total industrial output of the Issyk-Kul Oblast. Other industrial products of the zone are agro-processing, construction materials, and coal mining. The industrial sector is offering employment opportunities at only 7.5% of the oblast total employment in 2002. The manufacturing enterprises are mostly concentrated in Karakol and Balykchy rayons.

The information communication technology (ICT) sector is not a major industry yet in the Kyrgyz Republic and the Issyk-Kul Oblast. However, the gross revenue in this sector reached $50 million in the Republic in the year 2002. With the completion of the transcontinental Asian-European optic fiber cable from Shanghai to Frankfurt, the telecommunication service conditions have been substantially improved. The impact has emerged on the increased number of computers from 13,200 units in 2000 to 50,700 units in 2002. There are 10 Internet service providers over the country and their users are steadily increasing.

Table 3.23 Internet Usage in Kyrgyz Republic (2000)

Category	%	People
Adult population of large cities	10.6	105,400
In Bishkek	19.0	85,800
In other cities	6.4	19,600
Users spending at least 3 hours/week	5.2	52,000
Breakdown of Internet users:		
Employees	42.0	
Students	33.3	
Others	24.7	
Internet audience growth for the last 6 months	51.5	
Estimated number of PCs in personal use, units		25,600

Source: M-Vector Research & Marketing Consultants

Programming is an area of future growth. A number of companies and individuals are active in this emerging sub-sector. Such companies have a strategic partner abroad or are direct subsidiaries of foreign firms. Despite the outflow of ICT engineers, there still remains a critical mass of programmers in the country, and Kyrgyz universities continue to produce well-trained ICT specialists.

The World Bank, in its report entitled “Barriers to Competitiveness: An Analysis of Principal Factors Inhibiting the Competitiveness of Kyrgyz Industry”, points out that the principal constraints in the industrial sector are (i) lack of market opportunity and need for working capital, (ii) excess production capacity among privatized SOEs, and (iii) lack of capital equipment among SMEs. Further, the World Bank indicates eight inhibiting factors in the manufacturing sector; i.e.,

(i) Mismatch of production capacity reflected in the excess capacity among privatized SOEs, and the lack of access to capital equipment among SMEs;
(ii) Absence of product distribution chain and warehousing;

(iii) Embryonic processing and packaging industry as reflected in the high level of imported products,
(iv) Limited purchasing power of the local economy to stimulate and accelerate the rapid growth of a value-added processing industry,
(v) Lack of branding and merchandizing particularly for export oriented products as a result of small lot production, lack of marketing capability, and the absence of a wholesale-retail chain,
(vi) Absence of a structured market and supply chain, inhibiting the development of product and process specialization and value added production,
(vii) Fragmentation of agricultural activities and decline in quantity and quality of outputs; and
(viii) Lack of information on domestic and foreign market opportunities.

The JICA Study Team has identified additional five major constraints in the industrial sector, as follows:

(i) High costs of commodity transportation to large outside market (disadvantage of accessibility as a land-locked country) resultant loss competitiveness in global market,
(ii) Lack of enterprises management such as accounting, sales promotion, quality control guidance, and product development, adjusted to the new global market economy,
(iii) Weak and underdeveloped linkages and cluster formation,
(iv) Inactive retail market and no wholesale market for industrial products, as well as lack of mutual cooperation among industrial and commercial enterprises
(v) Continued outflow of qualified human resources in the industrial sector (including software engineers)

3.6 Poverty Structure

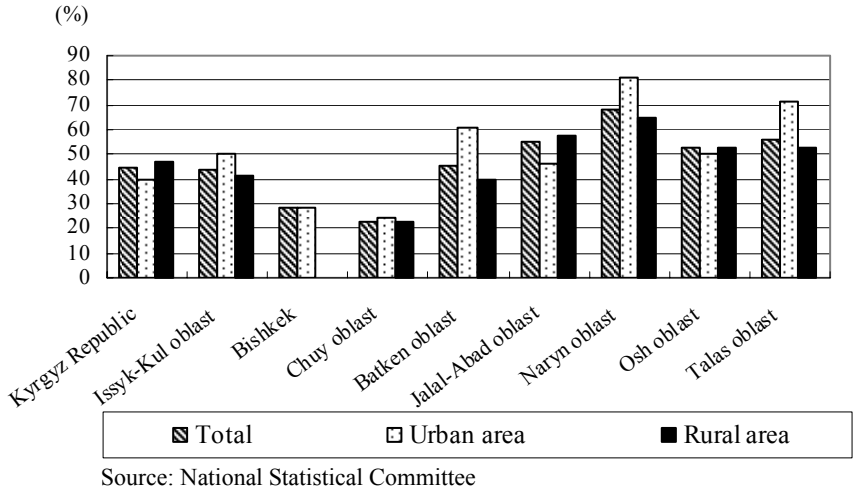
In the Issyk-Kul Oblast, the poverty level has decreased significantly in recent years. The percentage of the population categorized as in the poverty level in 2002 was 44.1 %, or slightly less than the national average, 44.4%. On the other hand, extremely poverty level was 18.7 % in Issyk-Kul or higher than the national average (13.8%). Currently the Natural Statistical Committee (NSC) and the World Bank are working on to clarifying the poverty situation at the village level, in order to precisely target the extreme poor situation for effective poverty alleviation.

Table 3.24 Poverty Incidence by Oblast (2000 to 2003)

	Persons below subsistence level (%)				of these, extremely poor (%)			
	2000	**2001**	**2002**	**2003***	**2000**	**2001**	**2002**	**2003***
Bishkek	29.9	29.5	28.2	23.1	5.8	3.1	5.6	2.6
Issyk-Kul oblast	**60.9**	**55.2**	**44.1**	**38.9**	**27.6**	**21.3**	**18.7**	**7.4**
Jalal-Abad oblast	67.9	55.0	54.9	51.7	15.1	8.3	11.7	5.4
Naryn oblast	81.4	70.4	67.8	65.0	37.6	36.3	34.7	21.0
Batken oblast	69.0	41.2	45.5	44.0	34.3	10.9	14.3	5.7
Osh oblast	51.6	56.1	52.4	49.0	19.8	19.9	17.4	17.0
Talas oblast	72.7	67.3	56.2	59.1	36.6	25.4	21.8	23.1
Chui oblast	28.1	29.2	23.1	17.1	4.5	5.9	6.0	3.8
Republic	**52.0**	**47.6**	**44.4**	**40.8**	**17.8**	**13.5**	**13.8**	**9.4**

* - according to preliminary data (1100 households)
Source: National Statistical Committee

On an average, the poverty level in rural areas, 47%, is, higher than the urban area (39.6%), though it has substantially improved from 60% in 1999. The urban poverty has also declined but to a lesser degree. In Issyk-Kul, poverty incidence in the urban area was greater (50.3%) than in the rural area (41.6%) in 2002 reflecting the seriousness of the unemployment situation in the urban area due to closedown of factories.



Source: National Statistical Committee

Figure 3.12 Poverty Incidences by Urban and Rural Areas by Oblast (2002)

Increased unemployment, due mainly to closedown of factories and insufficient markets for agricultural product, has lowered the income level. However, most people in the rural area are not hungry because they own their farmland and livestock and stand on their feet even though there is an incidence of nutrition disorder. For pensioners, their incomes have been declined due to the insufficient budget for social security. They are, however, supported by their family or relatives with mutual help of strong ties. An old man, one of the respondents to the questionnaire said “I am not anxious about poverty because my children and relatives support me.”

Based on the social survey by the JICA Study Team, the gross income from farmland (average of 48 households) is estimated to be about 11,000 som/year, and the gross income from livestock (average of 21 households) is 13,300 som/year. The net income from farmland is estimated to be 7,500 som/year, and the net income from livestock 9,830 som/year.

Table 3.25 Average of Agricultural Income by Income Source

(Unit: Som/year/household)

Income Source	Gross Income	Expenditure for Agriculture	Estimated Net Income
Farmland (48 households)	10,969	3,461	7,508
Livestock (20 households)	13,293	3,461	9,832

Source: Social Survey by JICA Study Team

The average gross income from agriculture by household type is shown in the following table. Households engaged in both livestock and cultivation have higher gross incomes, with its average at 27,700 som/year. The households engaged only in cultivation of farmland have an average gross income of 10,430 som/year. The households engaged only in livestock only have the average gross income of 10,320 som/year.

Table 3.26 Average of Gross Income from Agriculture by Type of Household

Unit : Som/year/household

	Number of households	Gross Income
1. Households engaging in cultivation of farmland only	35	10,429
2. Households engaging in both livestock and cultivation	13	27,700
3. Households engaging in livestock only	7	10,321
Average of all types	55	14,406

Source: Social Survey, JICA Study Team

The average of household expenditures is estimated to be 25,000 som per annum based on the survey. Therefore, the households engaged in both livestock and cultivation can only cover the average household expenditures.

Increase in expenditure is one of the constraints for the people. Medical services become charged, while various payments are requires even for compulsory education. For example, parents are required to pay for school repair due to lack of the public budget. Further, they are required to pay for public wells, renovation of the community hall, and so on. Facilities and equipment of community/village are not maintained properly due to an insufficient budget.

Poverty factors caused by economically intangible aspects will include increase in work load and inefficiency of works. After the independence, agriculture is done by individual with insufficient machinery. Machinery become old, not maintained well, and

sometimes it is out of order. For recovery of public facilities/equipment, people are sometimes required to provide works, free of charge.

Poverty caused by deterioration of the living environment is captured by those resulted from decline in public services. In fact, various works and self/mutual help of the people are supplemental to these declines in public services. For example, the people used to be served by public wells, have now to draw surface water from far away because wells are out of order due to lack of maintenance. According to the JICA Survey, 29% of the respondents rely on public well and 16% on surface water, while poor family respondents (under monthly salary of less than 500 som) depend on surface water for 21%. This demonstrates the fact that it is difficult for poorer families to secure safe water, and their work load for drawing water is heavier. Women and children are undertaking this role. An average distance to water resources is about 0.9 km, and in some case it is more than 2 km. In addition to water wells, repair works for school, renovation of community hall, and inefficiency of agricultural works, are causing increased work loads.

CHAPTER 4

DEVELOPMENT FRAMEWORKS AND ALLOWABLE CAPACITIES

4.1 General

For planning of an integrated regional development plan, development frameworks in terms of social, economic, land use and spatial development are usually set up. For the master plan of integrated development of the Issyk-Kul zone, however, the Strategic Environmental Assessment (SEA) has been applied and the alternative frameworks at the policy level are evaluated from the environmental point of view.

The social development framework will be proposed on the basis of the population projection in the Issyk-Kul zone, referring to the current natural growth and age structure, as well as the trend of emigration mainly to the Bishkek area and the tourism-led development that would hinder such an emigration. The macro-economic development framework will be set on the basis of the Gross Regional Products (GRP), estimating the gross value added in agriculture, manufacturing industry, and tourism sector, as well as the projection of the employment and labor productivity. Projection of tourist arrivals and its impact is considered to be a key factor for both social and economic development frameworks. Three alternative frameworks are set respectively for the social, economic and tourism development.

On the other hand, the Issyk-Kul zone has allowable capacity for development. Such a capacity is first reviewed in terms of the land use capacity, as future development requires change in land use and its rational utilization is to be elaborated. Subsequently, the environmentally allowable capacity is evaluated in terms of water quality protection of the Issyk-Kul Lake that is the most valuable natural asset and the most sensitive environment in Issyk-Kul. Allowable capacity of transport is also evaluated as the entrance to the Issyk-Kul zone has a bottleneck for transport and communications.

4.2 Population Projection (Social Framework)

The future population of the Issyk-Kul Oblast is estimated on the basis the cohort component methodology, reflecting the current natural growth rate and age structure in the Study Area. Demographically, the population of the Oblast is older as the proportion of people aged over 65 years represented is more than the Republic average. Children and teen-agers constitute 38.4% of the total population, while people of working age comprise 50.9% and the retired population, 10.7%. The national population growth is preliminary projected to be 1% by the government. The "without case" will reflect the current tendency that many young leave the oblast for better job and education opportunities. Despite the fact that the total fertility rate (the average number of births per woman during her life) is relatively high or around 2.7 which exceeds the national average, the share of the working age group will be constantly smaller, and the annual growth rate will remain small as less than 0.3% in the future. Without development initiatives in the region, the share of the Issyk-Kul population in the Republic will be expected to decrease from 8.4 % to 7.9% in 2010 and 7% in 2025.

Due to lack of sufficient job opportunities and sound education / training institutions, there is a strong tendency for people in Issyk-Kul to leave for Bishkek and other destinations. Provided that tourism-led development will become more visible, less people will leave the region. Moreover, additional labor inflow will be expected. Three sets of population were projected based on the inflow of the tourism arrival of the advanced, average, and low growth scenarios which will create job opportunities and will bring population growth accordingly in the region.

The following table shows the summary of baseline population projection of the Issyk-Kul Oblast for the year 2010 and 2025 under four alternative cases of development. (Projection of employment will be discussed in the subsequent section together with the economic framework.)

Table 4.1 Baseline Population Projection of Issyk-kul Oblast

	Population				Growth rates		Share in total population		
	2000	2002	2010	2025	2002-2010	2010-2025	2002	2010	2025
Issyk-Kul Oblast									
Without case	415,500	419,700	429,000	446,000	0.29%	0.25%	8.42%	7.90%	7.08%
Low growth case			442,000	487,000	0.65%	0.65%		8.14%	7.73%
Medium growth case			452,000	526,000	0.93%	1.02%		8.33%	8.35%
Advanced growth case			467,000	583,000	1.44%	1.49%		8.60%	9.25%
Kyrgyz Republic	4,920,000	4,984,400	5,427,800	6,301,500	1.07%	1.00%	100.00%	100.00%	100.00%

Source: NSC, JICA Study Team estimate

4.3 Macro-economic Projection (Economic Framework)

The national economic target has been set by the Comprehensive Development

Framework (CDF) towards the year 2010, as well as under the National Strategy for Poverty Reduction (NSPR), as introduced in Section 2.3. Besides, the Medium-Term Budget Framework (MTBF) up to 2007 prepared by the Ministry of Finance primary provides macroeconomic projections and revenue planning, external financing forecast, expenditure projections, priority programs in the key sectors. Based on these projections, the GDP beyond 2007 is estimated on the basis of the following assumptions.

(i) The projected decline in public investment will be compensated by private investment, and
(ii) Exports will continue to rise assuming that no additional trade barriers be erected by trade partners.

The overall GDP growth rates in the short run is targeted at around 5%.While major macroeconomic constraint of high external debt will gradually ease by streamlining the Public Investment Program (PIP), export diversification and increase in FDI needs to be materialized in order to achieve the targeted growth.

As the Issyk-Kul Oblast has the Kumtor gold mining company which accounted for nearly 40% of total industrial output and 50% of exports of the Republic, the economic indicator of the oblast with Kumtor shows distinct features. Since the output of Kumtor will be expected to decrease, the gross output of the Kumtor is excluded for the macroeconomic framework. In 2002, the Gross Regional Products (GRP) of the Issyk-kul without Kumtor accounts for 8.7% of the Republic. Agriculture is the major economic activities which contribute approximately 57% to the total GRP, while the secondary sector which consists of industry and construction is less than 8% of the GRP. The growth rate of GRP of the oblast will be estimated higher than the national level as the tourism-led development plan will be strategized. Three alternative frameworks are set based on the difference of the targeted number of the tourists' arrival in the region as summarized in the following table.

Table 4.2 Alternative Macroeconomic Frameworks of Issyk-Kul Oblast

	Base year	Advanced growth case		Moderate growth case		Low growth case	
*million soms at 2002 price	2002	2010	2025	2010	2025	2010	2025
GDP of Kyrgyz Republic*	75,367	110,375	204,787	110,375	204,787	110,375	204,787
GRP of Issyk-kul*	6,561	9,900	25,400	9,501	22,335	9,300	17,800
(Targeted tourists numbers)	250,000	1,600,000	2,500,000	1,100,000	1,800,000	700,000	1,100,000
Population of KRG	4,984,400	5,427,800	6,301,500	5,427,800	6,301,500	5,427,800	6,301,500
Population of Issyk-kul	419,700	467,000	583,000	452,000	526,000	442000	487000
GRP per capita (soms)	15,633	22,000	44,000	21,000	42,000	20000	36000
Total employment	136,280	169,000	214,000	165,000	195,000	149,000	167,000

Note: Projection of national population is based on the MF and of Issyk-Kul is estimated by JST.
Source: Ministry of Finance, NSC and JST estimate

Based on the expenditure of the tourists and increased investments in the tourism related industry, the value added in the tourism sector of the Issyk-Kul Oblast is estimated to be 3.6% or approximately 234 million soms in 2002. The projection of the tourism GRP in 2010 and 2025 is estimated on the basis of the increase in the expenditures in tourism. According to the State Commission on Tourism and Sports, the tourism expenditures are expected to increase about 1.8 times from 2002 to 2010. Thus, the value added in the tourism sector of the Republic would reach around 5,370 million soms by 2010. Tourism in the Issyk-Kul Oblast, with substantial efforts, would increase up to around 460 million soms, or more than 8% of the national gross value added in the tourism sector. By 2025, constrains of national and regional infrastructure will be further improved, and it will be possible that the tourism sector would contribute up to 9% of the national GDP and 8% of the GRP in the Issyk-Kul Oblast.

Table 4.3 Gross Value Added of the Tourism sector (2002)

	Republic		Issyk-Kul Oblast		Share of Issyk-Kul Tourism GVA
Items of tourism related industry	GVA	Share of each items	GVA	Share of each items	
Manufacture of tourism	20.8	0.7%	0.2	0.1%	0.9%
Restourants	548.0	18.1%	17.2	7.4%	3.1%
Hotels	223.2	7.4%	0.9	0.4%	0.4%
tourist and excursion services	61.3	2.0%	10.3	4.4%	16.9%
Sanatorium and resort services	97.6	3.2%	75.7	32.4%	77.6%
Sales in tourism	472.9	15.7%	5.0	2.1%	1.1%
Tourists transportation	510.2	16.9%	0.2	0.1%	0.0%
Construction of tourism	446.5	14.8%	28.3	12.1%	6.3%
Other tourism services, including finance, real estate,	639.2	21.2%	95.9	41.0%	15.0%
Total GVA in Tourism	3,019.7	100.0%	233.7	100.0%	7.7%
GDP**	75,366.7		6,561.3		
in % to GDP	4.0%		3.6%		

GVA: million soms

Note: *Figure of Issyk-Kul Oblast is preliminary, ** GDP of Issyk Kul is excluding the Kumtor.

Source: JST estimate using the NSC data

Employment by sector is estimated from a set of GRP and labor productivity levels for the year 2010 and 2025. Assuming the tourism and tourism related industry will create new employments substantial labor inflow to the region is anticipated, thus labor participation ratio will be increased. The unemployment ratio, which is currently over 9%, will gradually decrease to less than 5% by the year 2025.

Table 4.4 Projection of Employment and Labor Productivity

Current Situation	2002 Kyrgyz Republic			2002 Issyk-kul			
	Employment	Value added per an employed	GDP(million soms)	Employment	Value added per an employed	GRP(million soms)	
Primary Sector	908,187	28,550	25,929	75,260	49,827	3,750	
Secondary Sector	192,699	83,358	16,063	10,170	50,934	518	
Tertiary Sector	749,077	44,554	33,375	50,850	45,093	2,293	
Total	1,850,101	40,737	75,367	136,284	48,142	6,561	
Projection	2010 Issyk-kul			2025 Issyk-kul			Annual growth rate of labor productivity
	Employment	Value added per an employed	GRP(million soms)	Employment	Value added per an employed	GRP(million soms)	
Primary Sector	74,000	70,223	5,197	70,000	127,389	8,917	4.17%
Secondary Sector	12,000	59,983	720	20,000	81,102	1,622	2.04%
Tertiary Sector	79,000	45,377	3,585	105,000	112,339	11,796	4.05%
Total	165,000	57,582	9,501	195,000	114,538	22,335	3.84%

Source: Ministry of Finance, NSC and JICA Study Team estimate

The current productivity in the agriculture sector is at a lower rate than the Soviet regime as the mechanization ratio has been decreased due to lack of maintenance costs of large scale machines and agriculture cooperatives are rarely organized. In addition, the market of agricultural products is still limited due to various barriers in exporting to other countries though these barriers will be eased gradually. Due to the strong demand for agricultural products from neighboring countries, the agriculture sector will have stable growth which maintains the employment in agriculture. With increased demand of the agricultural products, the agriculture productivity is expected to grow. Currently labor productivity of the agriculture in the oblast is much higher than the national average. This reflects that the habitants of the Issyk-Kul Oblast can earn by leasing their land and houses, and selling some agricultural products directly to the tourists during the summer seasons. The labor productivity in the secondary sector is currently lower than average as this GRP data excludes the Kumtor gold mine outputs. Due to the remoteness and scarcity of labor, the secondary sector besides the food processing industry will not be expected to play a big role in the region. Thus, labor productivity remains to be low. The tertiary sector which contains tourism will be expected to grow by foreign and domestic investments in the short and medium term.

4.4 Projection of Tourist Arrivals (Tourism Sector Framework)

Concurrently with the projection of GDP at the national and oblast levels, the tourist arrivals have been projected, since the tourism sector in the Issyk-Kul zone has significant impacts on the economic activities and the regional environment.

Three alternative cases have been set for discussion at the Working Group, as well as at the Second Workshop by stakeholders (May 2004) as follows:

(i) The Issyk-Kul zone will attract more variety of regional and long-haul international tourists, by developing new pleasure tourism opportunities in addition to the traditional natural and cultural tourism. The international airport at Tamchy is expended at the initial stage, and active development of resort hotels, pensions and B+B guest houses will be envisaged.
(ii) The Issyk-Kul zone will be gradually developed as a healing destination in the regional and international tourism, under the balanced condition between the increased value added in tourism and the protection of the environment.
(iii) The Issyk-Kul zone will pay more attention to the protection of the environment, focusing more on the eco-tourism and community-based tourism (CBT).

Based on the analysis of the historical trend, as well as on the interviews with tourist agencies in the major market, like Almaty in Kazakhstan, tourist arrivals in the Issyk-Kul zone are projected for each alternative as summarized in the following table.

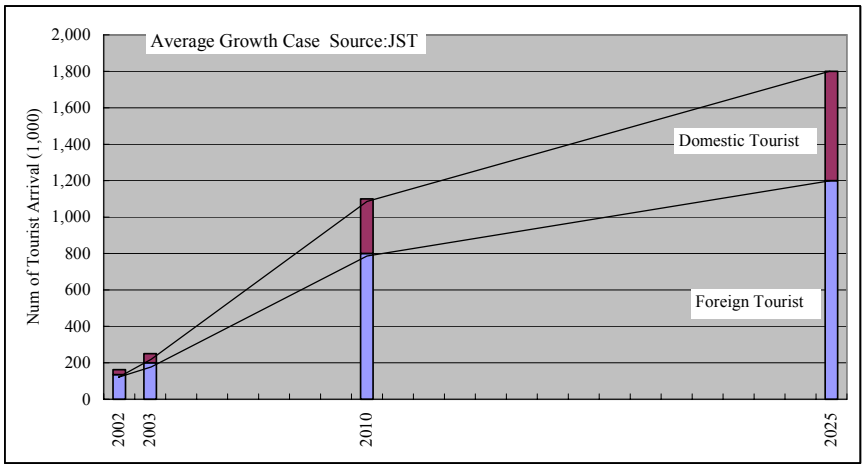
Table 4.5 Forecast of Tourist Arrivals in Issyk-Kul Zone

	Estimate (1,000)			Projection (1,000)					
				Advanced Growth Case		Moderate Growth Case		Low Growth Case	
	2000	2002	2003	2010	2025	2010	2025	2010	2025
Tourist Arrival (1,000)	58.8	163	250	1,600	2,500	1,100	1,800	700	1,100
Increase of Tourist Arrival		104.2	87.0	1,437	900	937	700	537	400
Annual Growth Rate of Tourist Arrival		66.5%	53.4%	30.4%	3.0%	23.6%	3.3%	15.8%	3.1%

Source: JICA Study Team

Discussions made at the Working Group and Workshop by stakeholders has come to the provisional selection of the moderate growth case; i.e., the tourist arrivals in the Issyk-Kul zone will reach 1.1 million in 2010 and 1.8 million in 2025.

Under the moderate or average growth case, it is estimated that the number of domestic tourists will reach around 300,000 in 2010 and 600,000 in 2025, while the number of international tourists is expected to reach around 800,000 in 2010 and 1.2 million in 2025, as illustrated in the following figure.



Source: JICA Study Team

Figure 4.1 Forecast of Foreign and Domestic Tourist Arrivals in Issyk-Kul zone (Moderate Growth Scenario)

International tourists by origin are estimated as summarized in the following table.

Table 4.6 Estimated Origin of International Tourists

Issykkul	2003		2010	%	2025	%	Remarks	Annual Growth Rate (%) 2003-2010	2010-2025
CIS	**120,200**	100.0%	**480,000**	100%	**720,000**	100%			
Kazakhstan	60,500	50.3%	230,400	48%	324,000	45%		21.0%	2.3%
Uzbekistan	15,000	12.5%	67,200	14%	108,000	15%		23.9%	3.2%
Russia	36,200	30.1%	144,000	30%	230,400	32%		21.8%	3.2%
Others	8,500	7.1%	38,400	8%	57,600	8%		24.0%	2.7%
Non CIS	**48,400**	100%	**320,000**	100%	**480,000**	100%		31.0%	2.7%
Europe	16,500	34%	50,000	16%	70,000	15%	EU	17.2%	2.3%
Americas	5,600	12%	40,000	13%	50,000	10%	USA+Canada	32.4%	1.5%
West Asia	9,000	19%	40,000	13%	50,000	10%	Excl. India	23.8%	1.5%
North East Asia	12,300	25%	110,000	34%	200,000	42%	Japan+Korea+Chin	36.7%	4.1%
South Asia	1,300	3%	40,000	13%	60,000	13%	India +	63.2%	2.7%
Others	3,700	8%	40,000	13%	50,000	10%		40.5%	1.5%
Foreign total	**168,600**		**800,000**		**1,200,000**		CIS+ non CIS total	24.9%	2.7%
Domestic	**81,400**		**300,000**		**600,000**			20.5%	4.7%
Issyk-kul Total	**250,000**		**1,100,000**		**1,800,000**			23.6%	3.3%

Source
2003:National Statistical Committee, The State Committee for Tourism, Sport and Youth Policy
2010,2025: JICA Study Team

4.5 Allowable Capacity from Land Use Perspective (Land Use Framework)

Tourism development, as well as other economic development, will bring about transformation of land use, especially the expansion of "built-up area". In the case of the advanced and rapid tourism development alternative that envisages tourist arrival of 1.6 million in 2010 and 2.5 million in 2025, the land area required will reach as estimated in the following table.

Table 4.7 Estimated Land Area Requirement in Advanced Growth Case

(Unit: km^2)

	Present	2010	2025
Built-up			
Urban	40	49	60
Tourism (Lake Side Resort)	20	44	63
Tourism (Inland Activities)	2	13	15
Rural			
Farming	2,002	1,977	1,962
Pasture	6,998	6,998	6,998

Source: JICA Study Team

The land for expansion of urban use will be supplied by transformation of agricultural land. Since the increase in future agricultural production will be attainable by increase in productivity and change of product types, it is safe to say that there is no shortage of suitable land for future growth of the urban area.

The land for inland tourism activities, such as camping grounds, will require significantly large areas, but can be realized by using slopes and/or pasture grounds without serious conflict with the existing activities; camping can co-exist with grazing, and skiing will be on the ground covered by snow. Buildings and structures to support these tourism activities will be small and not cause degradation of nature, if carefully designed.

The land for expansion of lake side resorts, on the other hand, will involve several factors that set certain limits: the limited length of coast suitable for tourism use, the existence of nature sensitive coast, and the conflict with highly productive farmland. By using GIS software, available coastal land areas have been estimated and ranked by suitability for lake shore resort development. Parameters adopted for the analysis are:

(i) Five grades ranking of quality of beach, based on the result of survey conducted by Moscow Institute in 1970s,
(ii) Existing land use to exclude currently built-up areas,
(iii) Proposed "Ecologically based Land Use in the Issyk-Kul Territory" (Map 2.1) to avoid core zones and buffer zones,
(iv) Gradient of the hinterland (less than eight percent), and
(v) Distance from the coast (within two kilometers).

It should be noted that the factor of land ownership has not been examined in the estimate due to the lack of adequate information at the moment.

Giving scores to each factor above, the coastal land of total 2,022.2 km^2 is classified into five ranks as summarized in the table below. The most suitable lands for additional development of lake side resort are estimated to be around 39.0 km^2, which would not

meet the projected demand under the advanced growth tourism development. Under such an alternative, the second best lands will have to be used to accommodate the demand for the lake side resort.

Table 4.8 Lake Side Resort Development Capacity Analysis

Rank	Development Potential	Area (km^2)
1	More than 90%	39.0
2	70-90%	513.8
3	50-70%	814.0
4	less than 50%	216.6
5	0%	438.9
Total		**2,022.2**

Source: JICA Study Team

The above analysis endorses the opinion of the stakeholders that they are afraid of adopting the advanced growth alternative in the tourism sector and the resultant economic development alternative, and they prefer to adopt the moderate growth alternative for the Issyk-Kul zone development.

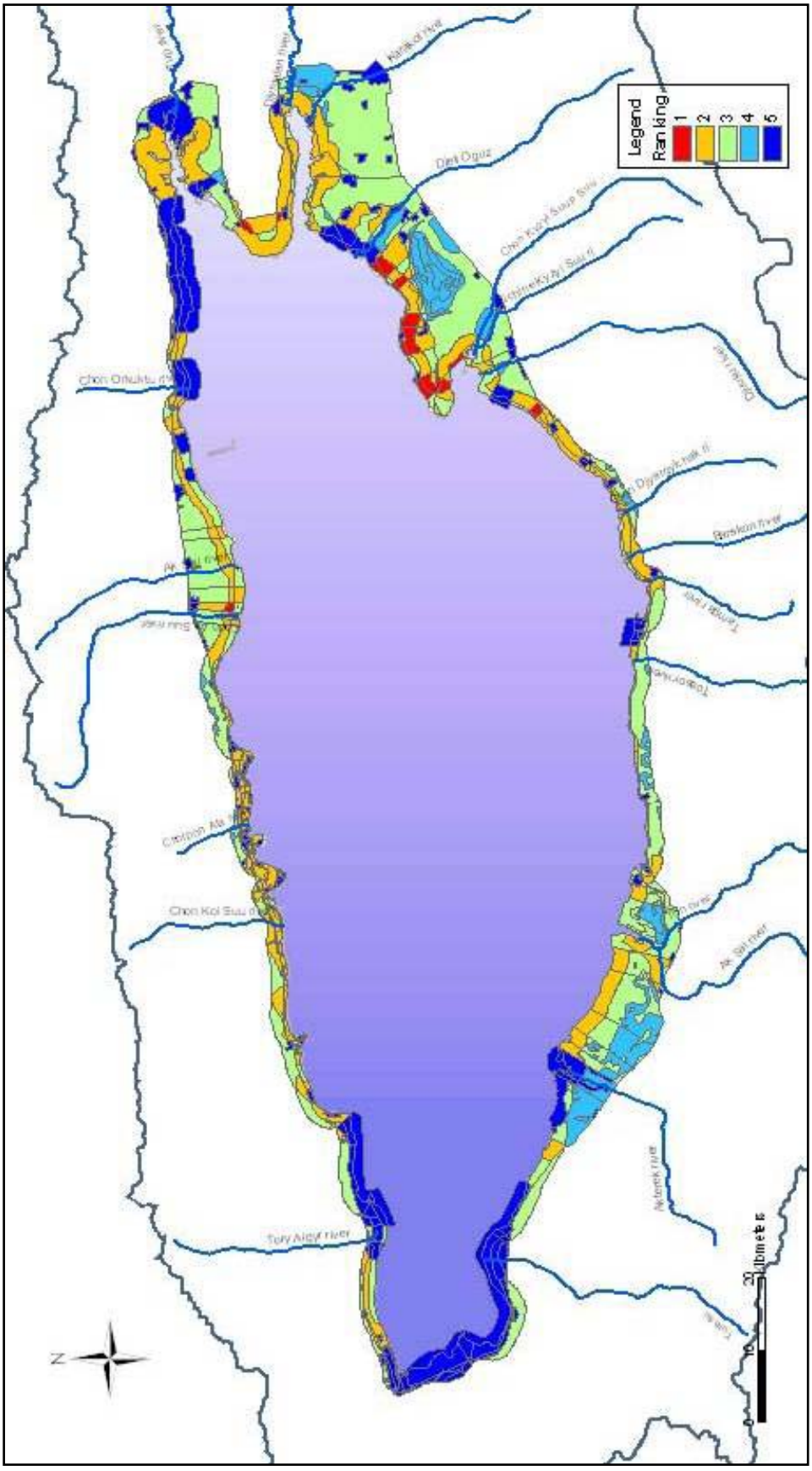


Figure 4.2 Distribution of Suitable Area for Lake Side Resort Development by Rank

4.6 Protection of Lake Water Quality (Environmental Framework)

When development projects are implemented around the Issyk-Kul Lake, both negative and positive impacts, regardless of their size, are likely to arise on the environment of the Lake. In order to conserve the environment of the Issyk-Kul zone, environmental impact assessment (EIA) is to be conducted prior to the implementation of projects in general. However, EIA is normally conducted at the stage of the feasibility study.

To understand the environment of the Lake, it is important to recognize that the lake does not exist itself alone. The lake coexists with surrounded rivers, forests, mountains, atmosphere and flora and fauna. And as a result, a complicated ecosystem is composed of these elements. If anthropogenic activities are done in the ecosystem, some impacts will result from it. Therefore, it is a prerequisite to know and estimate the quality and quantity of the environmental impacts of the early stage. The results of the environmental study in the early stage will be reflected to minimize or decrease the negative impacts on the environment. This is the concept of the strategic environmental assessment (SEA). The figure shown below gives the outline of the concept and procedure of SEA.

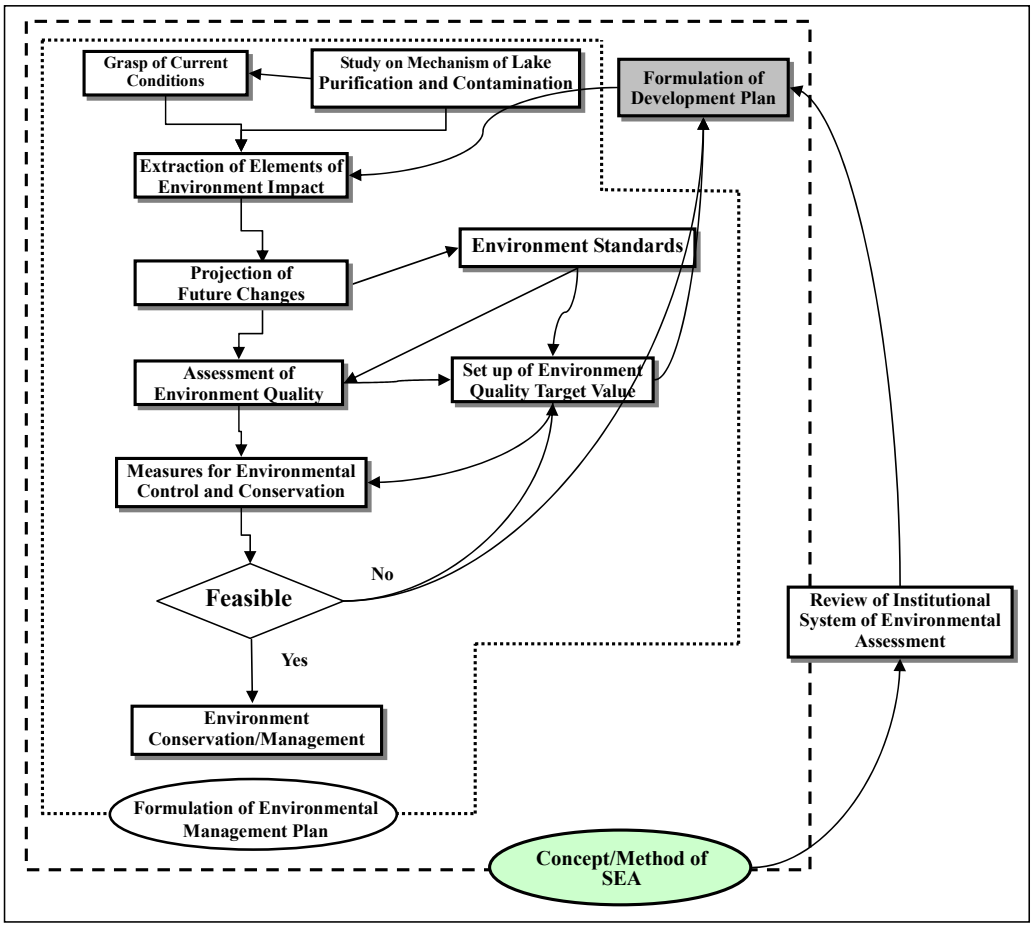


Figure 4.3 Concept and Procedure of SEA

The environmental impacts on the lake environment reflect the change of lake water quality sensitively. In this section, impacts on water quality of the Issyk-Kul Lake are analyzed, especially loads by nutrients, e.g., BOD5, total nitrogen (NH4-N + NO2-N + NO3-N) and total phosphorus (PO4-P).

Water quality of the Issyk-Kul Lake, major gulfs and inflow rivers have been analysed by the Gidromet and JICA Study. The salient features are summarized in the following tables.

Table 4.9 Present Water Quality of Issyk-Kul Lake(Year: 2001)

	BOD_5 (mg/l)	T-N (mg/l)	PO_4-P (mg/l)
Average	**0.61**	**0.15**	**0.001**
75% Value	0.85	0.18	0.000
Number of Sample	169	173	173
Standard Deviation	0.498	0.041	0.0035

Source: Gidromet, Arranged by JICA Study Team

Table 4.10 Water Quality of Gulfs in the Lake Issyk-Kul (2001)

	Tyup gulf		Prjevalskiy gulf		Pokrovskiy gulf	Rybachiy gulf
	Bottom of gulf (River mouth)	Entire gulf	Bottom of gulf (River mouth)	Entire gulf		
BOD_5 (mgll)	1.38	0.67	0.73	0.57	0.19	0.90

Table 4.11 Water Qualities of Major Inflow Rivers into Lake Issyk-Kul (Average of 1988~1992)

(Unit: mg/l)

	River Name								
	Tyup	Djyr -Galan	Karakol	Djeti Oguz	Tamga	Ton	Akk-Sai	Cholpon -Ata	Chon AK Suu
BOD_5	1.70	1.99	1.90	1.60	2.10	1.10	0.56	0.79	0.83
$(NO_2\text{-}N)+(NO_3\text{-}N)$	1.17	1.14	1.02	1.10	0.91	1.22	0.91	0.91	0.81
PO_4-P	0.016	0.017	0.013	0.011	0.016	0.014	0.013	0.011	0.009

The nutrients follow a variety of paths after the generation. Some are decomposed by animals and plants, some are absorbed by soil, and some are precipitated to river bottoms, and part of the nutrients finally reaches the lake. Reached nutrients are also decomposed and precipitated by the purifying function of the lake. Such a process of the nutrients from the generation to reach the lake can be expressed as follows:

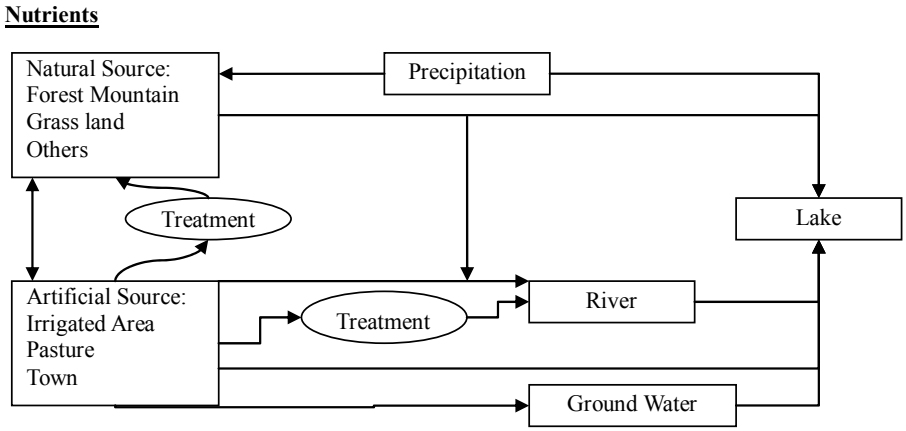


Figure 4.4 Process of the Nutrients from the Generation to Reach the Lake

In order to forecast the changes of water quality, taking into account the self-purification function in the lake, the modified Vollenweider formula may be applicable. A general form of the Vollenweider formula is expressed as follows:

BOD: $B\lambda = 2.41\ Bi0.769$
Bi: Concentration of inflow, μg/l,
Bλ: Concentration of lake water, μg/l,
T-N: $N\lambda = 0.670\ Ni0.780$
Ni: Concentration of inflow, μg/l,
Nλ: Concentration of lake water, μg/l,
T-P: $P\lambda = 0.142\ Pi0.820$
Pi: Concentration of inflow, μg/l,
Pλ: Concentration of lake water, μg/l,

Based on the above formula, water quality has been calculated as summarized below.

Table 4.12 Change in Water Quality in the Issyk-Kul Lake

Year		2002	2010			2025		
			Low Growth Case	Average Growth Case	Advanced Growth Case	Low Growth Case	Average Growth Case	Advanced Growth Case
BOD	Average pollutant concentration of inflow rivers forecasted	1.33	1.47	1.48	1.50	1.71	1.74	1.79
	Average pollutant concentration of the Lake forecasted (mg/l)	0.61	0.66	0.66	0.67	0.74	0.75	0.77
	Average pollutant concentration of the Lake monitored (mg/l)	0.61	–	–	–	–	–	–
T-N	Average pollutant concentration of inflow rivers forecasted	1.03	1.12	1.13	1.14	1.27	1.29	1.32
	Average pollutant concentration of the Lake forecasted (mg/l)	0.15	0.16	0.16	0.16	0.18	0.18	0.18
	Average pollutant concentration of the Lake monitored (mg/l)	0.15	–	–	–	–	–	–
T-P	Average pollutant concentration of inflow rivers forecasted	0.012	0.013	0.014	0.014	0.015	0.016	0.016
	Average pollutant concentration of the Lake forecasted (mg/l)	0.0011	0.0012	0.0012	0.0012	0.0013	0.0014	0.0014
	Average pollutant concentration of the Lake monitored (mg/l)	0.001	–	–	–	–	–	–

These results show that there is a possibility of increasing the concentrations of the nutrients in the Issyk-Kul Lake slightly with the implementation of the development projects. At present, the exact purification capacity of nutrient in the Issyk-Kul Lake is unclear. However, if the volume of inflow nutrient does not exceed the purification capacity of the lake, the concentration of the nutrient will not increase.

In view of the fact that the quality of T-N of Issyk-Kul Lake is higher, if compared with the Japanese lake water standard defined by the Effluent Quality Control Law, the contamination load exceeding the purification capacity is to be treated before inflow into the Lake.

The above analysis implies that the nutrient inflow must be kept within the purification capacity of the Lake and that tourism development should cope well with proper treatments of its effluent. In view of the investments required for such treatments and possible delay in public investments under the financial constraints of the Republic, it will be wise not to select the advanced tourism development around the coastal area, but to select the moderate tourism development scenario as agreed by the Working Group and the Workshop of stakeholders (May 2004).