CHAPTER 5

DEVELOPMENT OBJECTIVE AND SCENARIO

5.1 Development Objectives

The Issyk-Kul zone is a unique region endowed with the natural environment. It has a large natural lake and is surrounded by the Tian Shan mountain range and its derived mountain ranges. The region is full of bio-diversity and amenities of seasonal change. Though the natural conditions are relatively severe with the cold winter season, the people of some ethnic groups living in the region are warm in heart and fond of peaceful lives. Historically, the Issyk-Kul zone has been renowned for recreation and rehabilitation of the people in the former Soviet Union.

For development of the Issyk-Kul zone, it is proposed that the main objective of integrated regional development is defined as follows:

Creation of a Healthy and Harmonized Region of Issyk-Kul

The Issyk-Kul zone is a mentally and physically healthy region. Mentally, the people and visitors will become healthy with beautiful scenery, landscape and the natural environment, as well as with the amicable and warm-hearted people, restoring humanity in the natural and social environment. Physically, the zone offers some naturally curative materials as well as services for medical care and rehabilitation, and it serves for sports and other physically preventive measures to maintain healthy conditions.

Further, the Issyk-Kul zone will offer facilities for promotion of international amicable relations and prevention of conflicts. The regional and international conferences, conventions and forums at Issyk-Kul will encourage further promotion of a healthy environment and amicable people.

Harmony is another factor of vital significance for development of the zone. Socially, some ethnic groups are living amicably, in harmony with the natural environment. It is expected that the visitors to the zone will enjoy not only the natural environment but the social relations with the people in the zone. Harmony between the natural environment

and the economic activities should also be maintained, preventing any pollution and promoting a cycle-oriented society.

5.2 Development Scenario and Targets

The tourism sector has a great potential to grow as a promising industry in the Issyk-Kul zone. Medical care, sports, conventions, training and education, etc. will also be promoted in addition to the current recreational and eco-tourism menu. Although the major tourists market will continue to be the CIS countries, the neighboring countries like China and India will be potential markets. Tourists from EU and Southeast Asia are also promising. Domestic tourists will grow in line with the economic growth and increasing recreational demands of pensioners and educational tourism.

Based on the projection of tourist arrivals to the Issyk-Kul zone, as well as the social and economic frameworks as discussed in Chapter 4, three alternative scenarios for Issyk-Kul tourism development have been formulated as follows:

1) Advanced Growth Scenario

This scenario is based on the concept of developing Issyk-Kul tourism zone to be one of the strong points of tourism destinations in the Central Asia tourism network and attract more variety of the regional and long haul international tourists. In addition to the traditional natural and cultural tourism, new pleasure tourism opportunities will be introduced for the new tourist market. Active development of resort hotels, pensions and B+B guest houses will be emphasized and increase tourism supply capacity. The development will be oriented to diverse the Issyk-Kul tourism zone from the health and healing tourism destination into more commercialized revenue generating tourism area and contribute to the national and local economy. The expected tourist markets for the amusement tourism are leisure tourists and weekend family tourists from Bishkek and surrounding countries as well. The government should emphasize the promotion of investments for tourism development.

2) Average Growth Scenario

This scenario is based on the concept of developing the Issyk-Kul tourism area to be the health-oriented healing and treatment, nature and culture tourism destinations in the regional tourism network and promote the tourism as a major income generating industry in the Kyrgyz Republic. As the Issyk-Kul has been one of the main recreational and treatment incentive tourism destinations in USSR time, the innovation of Issyk-Kul tourism should be emphasized to develop more diversified tourism products and facilities in order to attract more tourists especially CIS and domestic tourists. In addition, to the some investments for the accommodations, development of recreational parks and nature observatories will be emphasized for the development to attract new

markets such as family day trippers and weekend tourists from Bishkek and neighboring countries. The interests of Chinese and Indian tourism operators in Issyk-Kul tourism should be properly incubated to the new potential tourist markets.

3) Low Growth Scenario

This scenario is based on the concept that the Oblast and State governments carry out tourism development and marketing focused on the traditional nature oriented tourism products for recreational leisure tourism, eco-tourism and CBT (Community Based Tourism). Only a part of Chinese investments for resort development and private small scale development will be implemented.

The three alternative scenarios are summarized in the following table.

Table 5.1 Three Alternatives for Issyk-Kul Development

Scenario		Regional Development Concept	Tourism Market	Tourist Arrival	
				2010	2025
Advanced Growth Scenario	Issyk-Kul zone will be developed as the major tourism destination in the Central/West Asia in line with the environmental capacity of the lake area and the tourists from the possible market in the world will be promoted.	All appropriate coast of Issyk-Kul lake will be developed as the resort area. High grade tourists resort will be developed in the southern shore characterized by the popular resort developed in the north shore of the lake.	The secluded tourism connecting with western China is promising to the new world wide market. The domestic market will also be developed to the maximum extent by the introduction of educated tourism.	1.6 million tourists（1.0 million and 0.6 million tourists from international and domestic market）	2.5 million tourists（1.5 million and 1.0 million tourists from international and domestic market）
Moderate Growth Scenario	The introduction of a variety new tourism products such as culture/ history, sports, convention, educational tours in addition to the current leisure and resort tourism will expand tourism market of Issyk-Kul zone.	The present resort strip spread in the northern shore in and around Cholpon-Ata will be expanded appropriately. The southern coast will be also developed at the several designated areas. The hinter natural tourism destination in Karakol area will be further developed.	New market of China, India, Thailand, and Singapore will be promoted in addition to CIS countries. Domestic market such as educational tour will also be developed as the important tourism demand.	1.1 million tourists（0.8 million and 0.3 million tourists from international and domestic market）	1.8 million tourists（1.2 million and 0.6 million tourists from international and domestic market）
Low Growth Scenario	Eco-tourism will be the major products in the Issyk-Kul zone in consideration of the natural preservation purpose. Current resort and leisure tourism will be expanded by the some extent.	A limited resort development in and around Cholpon-Ata and Karakol will be done. Eco-tourism in the natural forest and mountains encompassing the resort base will be encouraged.	Increase of SIT demand from EU and America will be expected in addition to the current resort tourists of CIS countries.	0.7 million tourists（0.5 million and 0.2 million tourists from international and domestic market）	1.1 million tourists（0.7 million and 0.4 million tourists from international and domestic market）

Source: JICA Study Team

In addition to the tourism development, the agriculture sector is to be developed as one of the major industries in the Issyk-Kul zone. Agriculture will be restructured through

the improvement of productivity, enhancement of agricultural processing and the marketing promotion of the products. Integrated agriculture will be developed on the basis of the organic farming, which is the current preference of the Issyk-Kul zone. Despite the decrease of cereals production, industrial crops (e.g., oil crops), vegetable, fruit and herbs will be produced more extensively. The production of beef will increase, while goat and sheep will decrease. The volume of vegetable, fruit, livestock and poultry products will be increased in line with the consumption demand of tourists and exports by the processing industry. Agricultural land can be decreased to some extent as it could be converted to urban and resort land.

The processing industry is to be revived and developed in the Issyk-Kul zone. Through the linkage with the tourism industry, as well as through the strengthening of the linkage with the Almaty economic zone and the Western China economic centers, several sub-sectors of the manufacturing industry could be developed in the Issyk-Kul zone. The processing of the livestock, fruit, honey and herb will be promising. In accordance with the enlargement of the tourism industry, souvenir goods, food processing and flower nurseries will be promoted. The construction industry will also be enhanced in accordance with the development needs for resorts and hotels and their maintenance. The food processing industry, however, is the environmental impact industry. Therefore strict control should be applied to the effluence of waste water from food factories.

In the longer term, the IT software industry is promising in the Issyk-Kul zone. Utilizing the superior environment of the Issyk-Kul Lake, an incubating nursery of the IT software industry in the Kyrgyz Republic could be promoted. Waterfront landscape and resort facilities in Issyk-Kul will be an advantage and competence for promotion of the IT software industry. In the Issyk-Kul zone, the IT software industry will contribute to job opportunity creation during the tourism off-peak. Kyrgyz specialists understand the fundamental technology of the IT software industry while international language ability is appropriate. For the IT software base development in Issyk-Kul, upgrading of the telecommunications devices will be required.

The alternative scenarios for tourism development and other industrial development directions have been discussed widely at the Working Groups and the Workshops by stakeholders (May and July 2004). Participants in the group discussions, both at Working Group and Workshops, are neither confident nor comfortable in receiving massive volumes of tourists. They prefer to select the alternative to attain a moderate growth and protect the environment for creation of the zone harmonized with the nature. The stakeholders have agreed that the moderate or average growth scenario of tourism development be adopted together with the principal direction of other industrial development for the integrated development plan of the Issyk-Kul zone.

Presently, the targets for integrated development of the Issyk-Kul zone under the moderate growth scenario are set as summarized in the following.

Table 5.2 Targets for Development of Issyk-Kul Oblast

(million soms at 2002 price)

	2002	2010	2025	Growth rate	
				2002-2010	2010-2025
GDP of the Republic	75,367	110,375	204,787	4.9%	4.2%
from Tourism	3,020	5,368	18,431	7.5%	8.6%
Share of Tourism	4.0%	4.9%	9.0%		
Share of Issyk-Kul Oblast	8.7%	8.6%	10.9%		
GRP of Issyk-Kul Oblast	6,561	9,501	22,335	4.7%	5.9%
Primary	3,750	5,197	8,917	4.2%	3.7%
Secondary	518	720	1,622	4.2%	5.6%
Tertiary	2,293	3,585	11,796	5.7%	8.3%
of which Tourism	234	456	1,825	8.7%	9.7%
Growth rate		4.98%	6.73%		
GRP Share					
Primary	57.2%	54.7%	39.9%		
Secondary	7.9%	7.6%	7.3%		
Tertiary	34.9%	37.7%	52.8%		
of which Tourism	3.6%	4.8%	8.2%		
GRP per capita (soms)	15,633	21,020	42,462		
Employment of Issyk-Kul	136,280	165,000	195,000	2.4%	1.1%
Primary	75,260	74,000	70,000	-0.2%	-0.4%
Secondary	10,170	12,000	20,000	2.1%	3.5%
Tertiary	50,850	79,000	105,000	5.7%	1.9%
Employment by share					
Primary	55.2%	44.8%	35.9%		
Secondary	7.5%	7.3%	10.3%		
Tertiary	37.3%	47.9%	53.8%		
Labor participation rate	36%	39%	39%		
Economically active	150,321	176,280	205,140		
Unemployed	14,037	11,280	10,140		
Unemployment ratio	9.3%	6.4%	4.9%		
Population	419,700	452,000	526,000	0.9%	1.0%
Urban Population	123,800	136,000	185,000	1.2%	2.1%
Rural Population	295,900	316,000	341,000	0.8%	0.5%
Share of Urban Population	29.5%	30.1%	35.2%		
Share of Rural Population	70.5%	69.9%	64.8%		

Note: Primary sector consists of agriculture, forestry and fishery, secondary of industry and construction, and tertiary of services.
Source: Ministry of Finance, NSC and JICA Study Team estimate

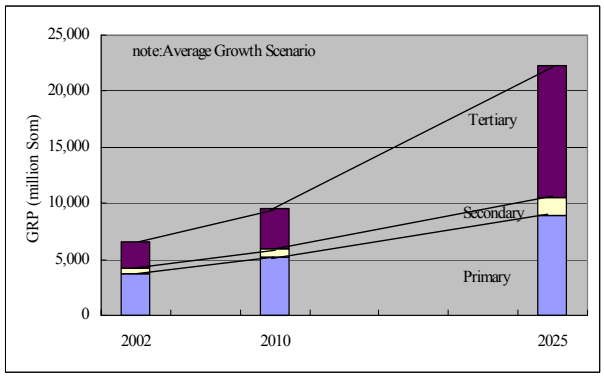


Figure 5.1 Economic Development Target by Sector

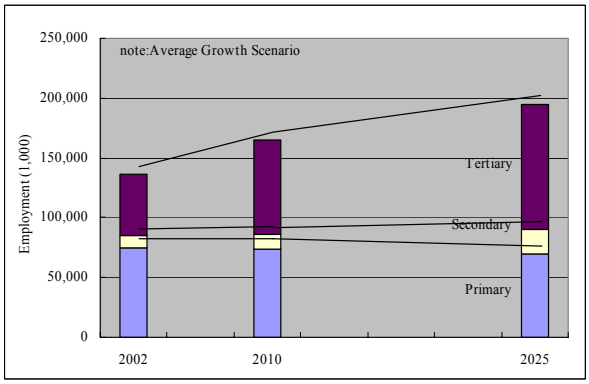


Figure 5.2 Target of Employment by Sector

5.3 Development of Regional Artery

To attain the development targets in line with the moderate growth scenario, spatial development structure is to be discussed and defined. In view of the position of the Kyrgyz Republic in Central Asia and the national physical development framework as discussed in Sections 2.1 and 2.2, development of the regional arteries in and around the Issyk-Kul zone has been first discussed.

Two alternative scenarios have been conceived and discussed. The first scenario is to develop multiple cross-border access to the Issyk-Kul zone. The cross-border road was planned to connect Cholpon Ata, the major tourism spot of the Issyk-Kul zone, and Almaty in Kazakhstan crossing the Kungoy Ala-Too range. It would create a triangle zone in Cholpon-Ata – Karakol – Balykchy in the Issyk-Kul zone. Another road was provided access from Aksu in China through the Badel Pass (4,284 m).

The second scenario is to develop a cross-border artery connecting Almaty in Kazakhstan and Kemin, Balykchy, Naryn and Torugart Pass to reach Kashgar in China. This artery will by-pass the Issyk-Kul Lake area.

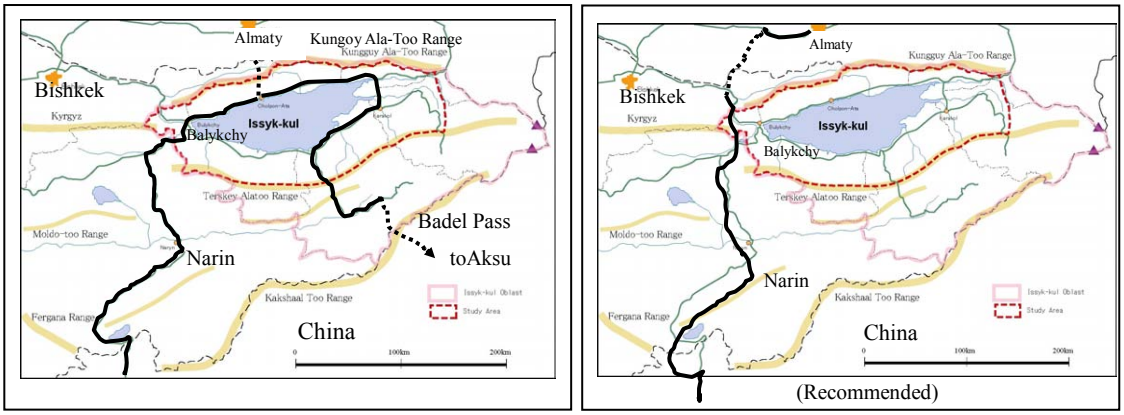


Figure 5.3 Alternative Regional Artery

Through discussions at the Working Group and Workshops, the stakeholders have agreed to select and develop the regional artery that runs Almaty – Kemin – Balykchy – Naryn -Torugart Pass- Kashgar, mainly because this artery has minimum environmental impact along the route and the environment of the Issyk-Kul zone is kept undisturbed to create a healthy region in Issyk-Kul. The future traffic between Kazakhstan – Kyrgyzstan – China, that is expected to substantially increase in the future, would be directed to this corridor.

5.4 Spatial Development Structure of Issyk-Kul Zone

Currently, the economic activities are spread over wide area with low density in the Issyk-Kul zone. Based on the current pattern of settlements and level of accumulated urban functions, as well as on the expected expansion of tourism demand and agricultural production, several economic cores will be formulated and developed in line with the development scenario discussed above.

Tourism cores will be formulated mainly in three scenarios; i.e., (i) the northern coastal tourism zone, (ii) southern coastal tourism zone and (iii) mountainous hinterland area. The northern coastal zone is to be developed continuously as a tourism zone by enhancing the existing resort areas with their center at Cholpon Ata. It will be developed as a health and historical tourist destinations. Choice of tourism products will be diversified and certain areas for resort will be expanded for potential investments.

Along the southern coastal zone, suitable locations for resort development are identified in Kaji-Say, Ak-Telek and Kuz-Suu for the formulation of tourism cores. Various investment plans have already been proposed by private investors in these areas. These cores should find the way to become self-sufficient in service provision within respective hinterland areas in view of the characteristics of the non-conventional but potential market segments of tourists from CIS and Russia, as well as from South and Southeast Asia. Spatially continuous expansion of development should be avoided because the surrounding areas of such cores are environmentally sensitive.

On the eastern parts of the huge hinterland mountains, especially on the eastern parts of the Issyk-Kul zone, various mountain based tourism activities, such as hunting, trekking, and ski fields will be developed. The choice of areas for visitors will expanded two-dimensionally, which will result in increased opportunity for rural communities to provide tourism related products and services. Further, in the long term, the pasture land slopes behind the continuous area of Tamchy and Cholpon-Ata will be sought as a modern ski field with lighting and other equipment e.g., of introduction of artificial snow machines.

From the viewpoint of industrial development in the Issyk-Kul zone, some industrial cores will be developed at Balykchy, Karakol and Tamchy. In and around Balykchy where large-scale factories had been located in the past, industrial production should be revitalized and triggered by introducing a free economic zone (FEZ). Also the distribution industries/distribution processing (incl. trading/packing) should be invited by fully utilizing the advantageous location as being transportation node on the Bishkek -Naryn distribution route, as well as the regional artery (Almaty – Kemin – Balykchy – Naryn - Kashgar). By doing so, the position of Balykchy will be gradually enhanced as a gateway to the Issyk-Kul zone.

In the city of Karakol, being the capital of Issyk-Kul Oblast and thus enjoying certain amount of accumulated services industry, the processing industries for agricultural products in the east and southeast parts of the country will be promoted, along with the enhancement of functions as a trade and distribution base. On the other hand, in and around Tamchy which is close to Cholpon-Ata as the tourism/services center and it has an international airport in its outskirt, several unconventional types of industries, such as IT software and others, will be invited by setting upon FEZ. By doing so, potential for creation of new-types of industrial corridor between Tamchy and Cholpon-Ata will be gradually formulated in the long term. This will also lead to the stable multi-mode access to the Issyk-Kul zone by contributing to generate certain number of sky travelers.

With the distribution of core economic activities, as well as in the light of transportation development in and around the Issyk-Kul Lake, the spatial development structure of the Issyk-Kul zone is formulated as illustrated on the following figure.

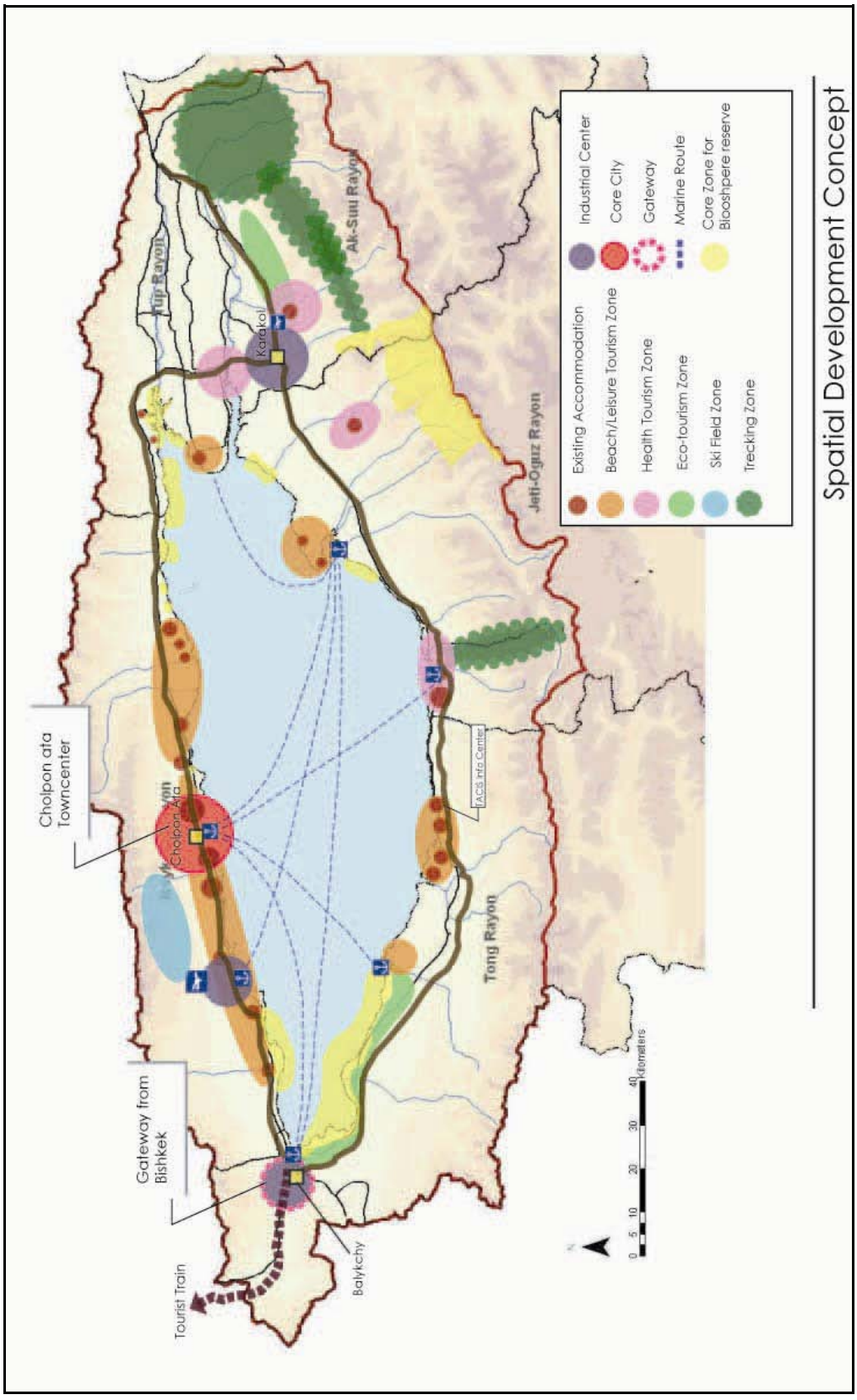


Figure 5.4 Spatial Development Scenario

5.5 Development Scenario by Rayon

The Issyk-Kul Oblast is administratively composed of five rayons (i.e., Ak-Suu, Jeti-Oguz, Issyk-Kul, Tong and Tup) and two cities (Karakol and Balykchy) as illustrated on the following figure.

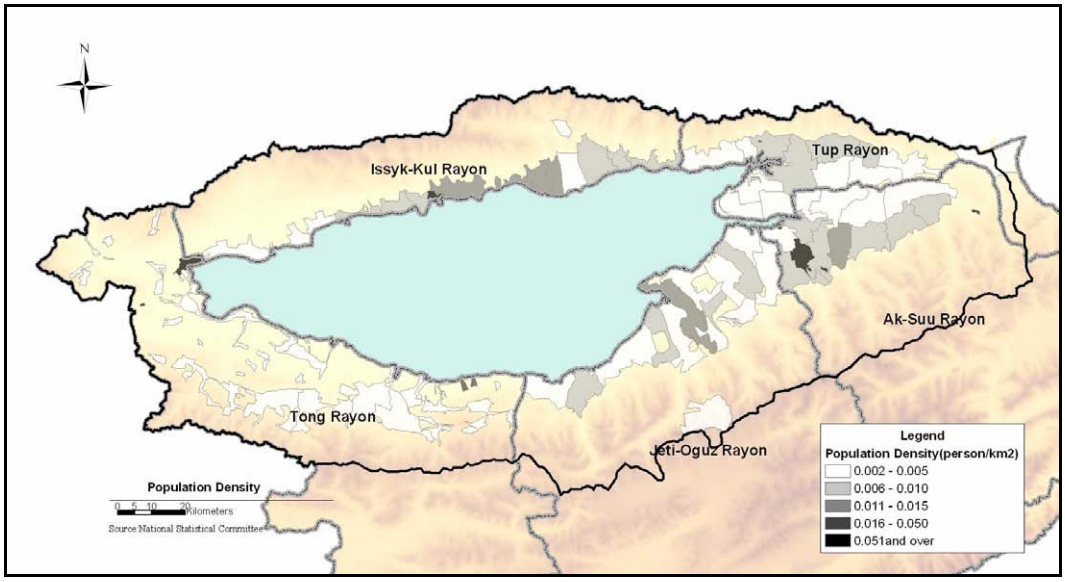


Figure 5.5 Boundary and Population Density of Rayons

Under the moderate growth scenario of the integrated Issyk-Kul development plan, the population in each rayon/city is projected for the year 2010 and 2025 as summarized in the following table.

Table 5.3 Population Projection by Rayons (based on the moderate growth scenario)

	2002			2010			2025		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Issyk-kul Oblast	420,600	122,300	298,300	452,000	136,000	316,000	526,000	185,000	341,000
Ak-Suu Rayon	58,700		58,700	60,000		60,000	63,000		63,000
Jeti-Oguz Rayon	77,400		77,400	79,000		79,000	83,000		83,000
Issyk-Kul Rayon	71,600	8,700	62,900	84,000	10,000	74000	117,000	22,000	95000
Tong Rayon	47,900	4,200	43,700	50,000	4,000	46000	52,000	7,000	45000
Tup Rayon	56,700	1,100	55,600	58,000	1,000	57000	61,000	6,000	55000
Karakol City	66,900	66,900		75,000	75,000		90,000	90,000	
Balykchy City	41,400	41,400		46,000	46,000		60,000	60,000	
Urban /Rural		29.08%	70.92%		30.09%	69.91%		35.17%	64.83%
Growth rate / year					1.5%	0.8%		2.1%	0.5%

Source: NSC and JST estimate

Likewise, GRP of each rayon for the target years is estimated as follows:

Table 5.4 GRP Projection by Rayons (based on the moderate growth scenario)

million soms at 2002 price		2002		2010		2025	
Issyk-kul Oblast		6,561	Share	9,501	Share	22,337	Share
Ak-Suu	Rayon	1,191	18.2%	1,629	17.1%	3,261	14.6%
Jeti-Oguz	Rayon	1,055	16.1%	1,468	15.4%	2,942	13.2%
Issyk-Kul	Rayon	1,249	19.0%	2,151	22.6%	5,816	26.0%
Ton	Rayon	596	9.1%	917	9.6%	2,043	9.1%
Tup	Rayon	1,053	16.0%	1,392	14.6%	2,635	11.8%
Karakol	City	859	13.1%	1,216	12.8%	3,405	15.2%
Balykchy	City	559	8.5%	730	7.7%	2,235	10.0%

Source: NSC and JST estimate

The Development scenario of each rayon is proposed in the following.

Ak-Suu Rayon

Located in the west lakeside plain, the main production is agriculture and food processing. There are some potential of tin and tungsten mining developed during the Soviet era, but its future potential remains uncertain. The tourism potential lies in adventure type activities such as mountaineering, hunting, etc. Tour operations are run by operators outside the rayon, including the tour operators in Kazakhstan. It is important to induce the spill-over effect to the local economy.

Jeti-Ogzu Rayon

This mountainous rayon is rich in natural resources. Although the rayon is endowed with forest, the timber is not available due to the conservation of nature reserves. There are several recreation resources owned by the state, and labor unions. Despite the locally well-known treating capacities of chronic skin disease, digestive apparatus, and nerve systems, the sanatorium facilities are obsolete and not at the standard to promote the medical tourism. These assets will be vigorously utilized for other tourist attractions in the region.

Issyk-kul Rayon

Issyk-kul rayon extends along most of the northern shore and is the most important lakeside recreational area of the oblast. Cholpon-Ata, the largest tourism center will be further expanded with substantial investments. There are favorable soil land conditions for agriculture in the eastern part. The food processing industry such as milk processing, fruit processing, and fish processing, are currently operating. Urbanization will be further intensified due to the expansion of the tourism industry, yet the agriculture is equally important in providing quality foods to the tourism sector. The surrounding area of the Tamchy airport is also designated as an FEZ recently. Further investment on food processing besides tourism related facilities is anticipated.

Tong Rayon

Tong rayon occupies the south-west part of the Issyk-kul Oblast. Except for the isolated industrial area at Kadji-Sai established during the Soviet era, the rayon's economy is totally agriculture. Effort is needed to expand the cultivation of the industrial crops. While there is abundant natural scenery alongside the lakeshore, tourism promotion has not been promoted yet except for the TACIS Information Center established recently in 2004 at Kadji-Sai. The road condition along the shore is relatively poor, but in the long run, the infrastructure will be improved. Agricultural based industries can also be promoted further.

Tup Rayon

Located in the north-east end of the oblast, Tup rayon is dominated by rural area and its economy is solely agriculture. One of the leading food industries is the processing of milk to produce butter, cheese of various kinds, cream, yogurt, and sour cream. Parts of these productions are sold to other regions and neighboring countries. There are some fruit processing industries. Tourism here is less attractive than other rayons though there are large areas of natural reserves and big hunting reserves. Identified minerals are lead-zinc, salt and gypsum deposits. Further diversification and upgrading of the agricultural products will be expected.

Karakol City

The largest town, Karakol is located in the southern part of the eastern lakeside near the boundary between Ak-Suu and Jeti-Oguz rayons. Several food processing factories such as grain, milk, meat, and soft drinks are operated. Located in the center of the agriculture based area, the food processing industry has a high potential to grow further in Karakol. Likewise, Karakol, situated near the Tien Shan mountains, is a base for adventure tourism,. There are several tourism operators. In the long term, these operators will be able to attract more investments and tourists. With the promotion of the food-processing industry and tourism related industry, urbanization in Karakol will be intensified.

Balykchy City

Balykchy is situated at the gateway to Issyk-kul Oblast on the west coast of the Issyk-Kul Lake and at the junction and is a strategically important center in the railway transportation. In addition, two important national roads of Bishkek-Karakol, Bishkek-Naryn-Torugart cross at this city. The Issyk-kul Oblast administration plans to promote a manufacturing and distribution center in the city by allocating 600 hectares for the Free Economic Zone (FEZ). While several small scale industries (grain processing, soft drinks, construction material) are located, serious unemployment still prevails. Yet, an influx of rural migrants from Naryn and rural areas of Issyk-kul has gradually increased despite the substantial out-migration. With strong support for the

FEZ and introduction of such new industries as herb oil extraction/export and fruit processing, the aggravated unemployment situation will be eased and the industrial activities will be revitalized in Balykchy.

CHAPTER 6
DEVELOPMENT STRATEGIES

6.1 Protection and Management of the Environment

To attain the objective to create a "healthy and harmonized Issyk-Kul zone" in line with the development scenario as discussed in the foregoing Chapter, several strategies are adopted for the formulation and implementation of the integrated Issyk-Kul development plan. The primordial strategy is to protect the environment of the biosphere in the Issyk-Kul zone to the utmost extent.

Various environmental impacts are caused on atmosphere, water, fauna and flora in the Issyk-Kul zone. The most significant environment is the existence of the Issyk-Kul Lake, and the fact that the Issyk-Kul zone consists in one eco-system around the lake. Consequently, changes in the environmental conditions emerge mostly in the change of water quality, and the primary focus on the protection of the environment is to be placed on the control of water quality of the Issyk-Kul Lake.

The changes in land use in the Issyk-Kul zone have impacts on the atmosphere, water and the eco-system. The level of such environmental impacts is evaluated as summarized on the following table.

Table 6.1 Level of Environmental Impact by Land Use

Land Use / Environmental Phase	Forest/Mountain		Irrigated Area		Grass Land		Town	
	Natural	Anthrop	Natural	Anthrop	Natural	Anthrop	Natural	Anthrop
Atmosphere	○	−	−	−	△	△	−	○
Water	○	−	○	◎	○	○	−	◎
Ecosystem(Flora/Fauna)	◎	−	△	−	△	△	−	○

Level of Impact
Large: ◎, Medium: ○, Small: △, Negligible: −
Source: JICA Study Team

Consequently, utmost attention of the environmental issues is strategically given to the protection of water quality of the Issyk-Kul Lake. The lake water quality is assessed and monitored by incorporating various factors, as illustrated on the following figure.

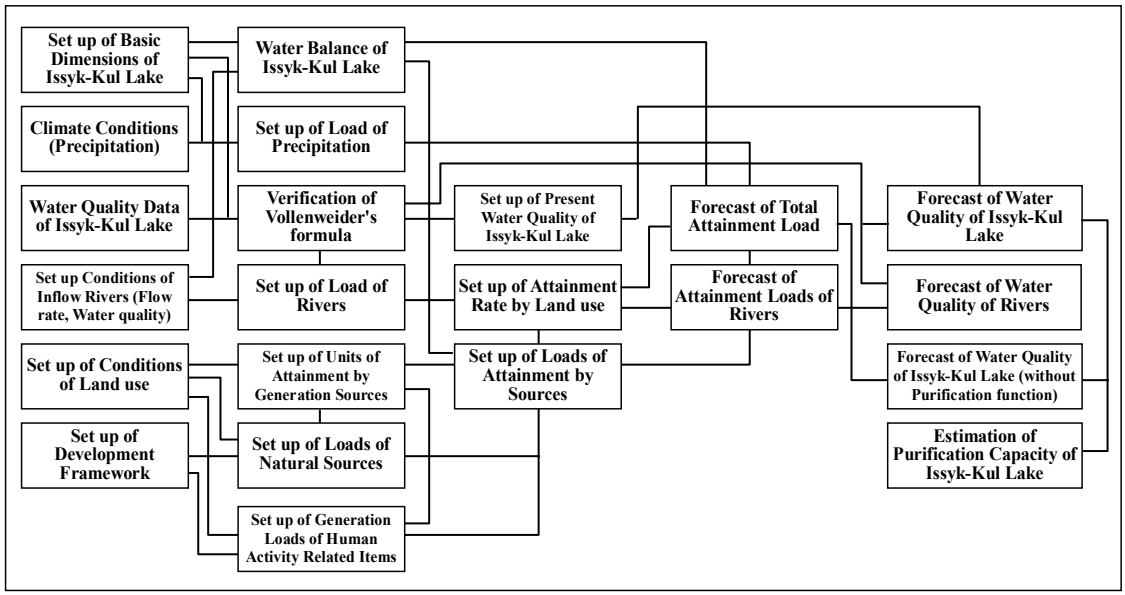


Figure 6.1 Assessment and Monitoring of Issyk-Kul Lake Water

The environmental management plan is to be strategically formulated. There is no single solution for conservation of the lake ecosystem, and the management plan will consist in several programs. It will include, among others, the following:

(i) Measures for Water Quality Conservation
- Renovation and/or installation of sewerage systems in urban areas,
- Preparation of wastewater treatment facilities for sanatoriums, hotels and other establishments,
- Small-scale wastewater facilities for rural communities, including integrated septic treatment system for domestic wastewater,
- Recovery of self-cleaning system utilizing the function of aquatic vegetation,
- Measures for conservation of greenery area and protection of the lake transition area,
- Management of river water quality and quantity

(ii) Enforcement of Regulation
- Setting up of the target values of water quality,
- Application of area wide total pollution load control,
- Review of environmental administration and legislation,
- Review and/or enforcement of wastewater discharge standards.

(iii) Formulation of a monitoring program for the inner water of the Lake and inflow river waters

The environmental management plan for the Issyk-Kul zone will be further discussed and proposed in Chapter 7.

6.2 Increased Tourism Consumption

Tourism in Issyk-Kul has been developed so far with less economic and social impacts on the region. It is endorsed by the fact that the gross value added (GVA) of the tourism sector in the Issyk-Kul Oblast (3.6% of GRP) was lower than the national average (4.0%) as noted in Section 4.3. In fact, hotels and sanatorium serve less local products even though the Issyk-Kul zone produces fresh and healthy products that would be attractive to tourists and visitors. Travels to Issyk-Kul are arranged by agents outside, including transportation. Unfortunately, tourism industry has little linkage with local industries.

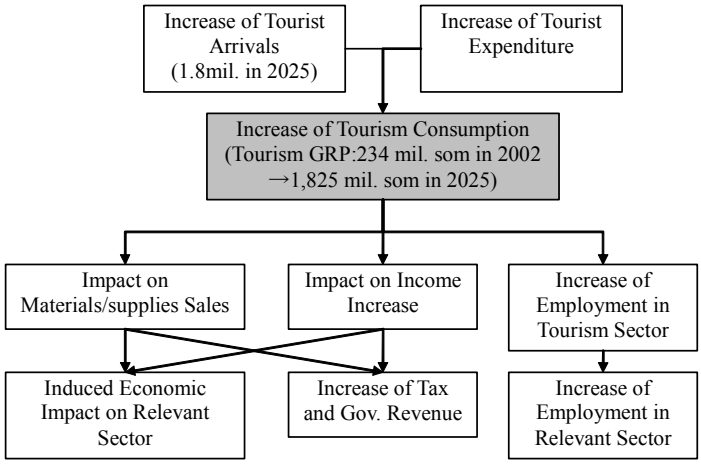


Figure 6.2 Economic Impact by Tourism Consumption

The regional economic and social impacts of the tourism industry are expected by the tourism consumption. The more the tourists consume in the region, the more the economic and social impacts on the region. The figure herein illustrates the impacts of tourism consumption on the regional economy, employment and the tax revenues.

The tourism sector of Issyk-Kul, therefore, should make utmost efforts so that tourists and visitors would consume more and stay longer in Issyk-Kul. To this end, the services should be improved to satisfy the requirements and desires of tourists and make utmost use of locally available resources. The increase in tourism consumption in Issyk-Kul multiplied by the increased number of tourists would result in greater impacts on GRP and employment in the Issyk-Kul zone.

6.3 Formation and Promotion of an Issyk-Kul Cluster

To protect the environment in the Issyk-Kul zone, as well as to make effective use of resources in the region and to create a healthy and harmonized region in Issyk-Kul, it is proposed that a cluster be formed by promoting vertical and horizontal linkages among regional economic activities as a whole. In this zonal cluster, there will be some sectoral clusters. The following figure illustrates the clustering in tourism and other industrial development in the Issyk-Kul zone.

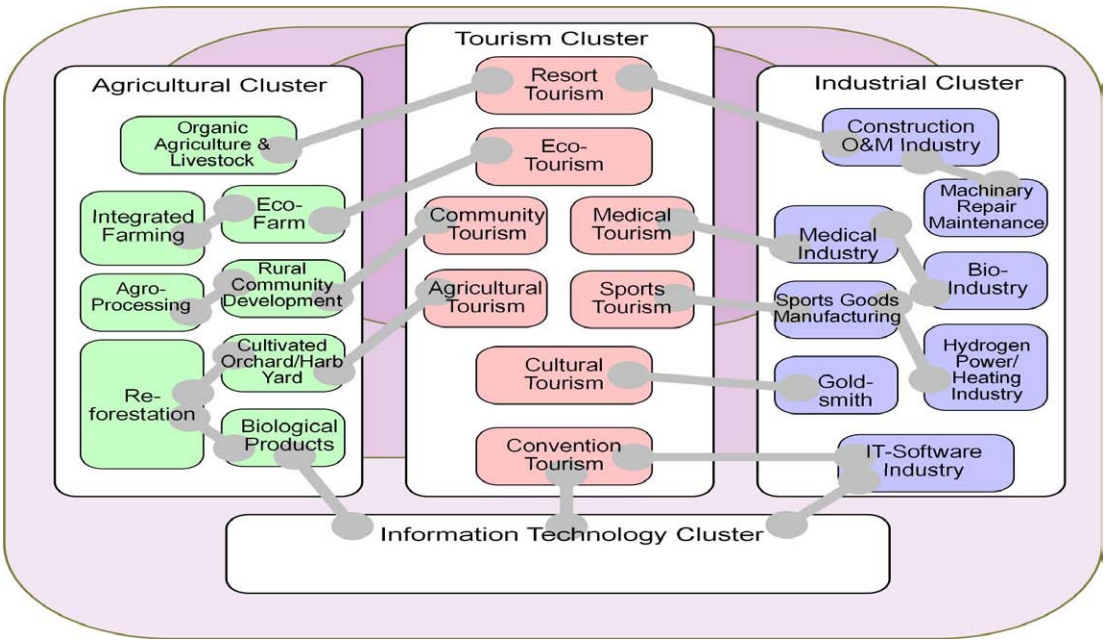


Figure 6.2 Clustering towards Creation of Healthy Region in Issyk-Kul

Unfortunately, there has been little linkage among economic activities in the region, and farmers and industrialists have been engaged independently in their own business. This practice should be changed, and clustering should be promoted in every activity. For instance, farmers are encouraged to promote organic farming in cultivation of vegetable, fruit and other agricultural products, as well as dairy and other livestock products, for consumption by tourists who will enjoy fresh and healthy products during their stay in Issyk-Kul. Farmers are also encouraged to cultivate herbs not only for consumption by tourists but also for processing and exports as niche products of Issyk-Kul.

Infrastructure service delivery should also be programmed and implemented to promote the Issyk-Kul cluster. For instance, the telecommunications should be improved to attain clustering through dissemination of information in the region, and a ring of optic fiber cable network is to be installed connecting the urban centers along the Issyk-Kul Lake. Gradual development of the ICT will facilitate further clustering in the region.

Clustering will not be limited to the industrial activities. Universities and academic circles should be involved in the Issyk-Kul cluster. For research on cultivation and utilization of herbs, for instance, universities will be encouraged to join and be linked with community-based herb cultivation, as well as the incubation in processing of the products. Entrepreneurship of students will also be advanced through clustering. Such a private-public-academic partnership is a key to successful development of the integrated Issyk-Kul development.

6.4 Development based on Participatory Approach

In promoting the Issyk-Kul cluster, it should be noted that mutual entrusts and joint works are prerequisites as the social capital is one of the factors for clustering. Unfortunately, there exists a lack of trusts among the people and enterprises at present. Further, information is not open to stakeholders. The currently prevailing circumstances might be attributable to the bitter experience in the cooperative activities under the planned economy.

In this context, it is important that the Issyk-Kul zone development be implemented by means of participatory approach and in an open information system. Through the participatory approach, the people in the Issyk-Kul zone will realize that cooperation in the community is indispensable for the enhancement of livelihood. They will also understand that competition among the groups is at the same time required for the enhancement of the market economy. The social capital might be consolidated only through the participatory approach.

While promoting the participatory approach, some guidance will better be provided to the communities in order to attain the objectives as quickly as possible. The regional development programs should indicate some menus for specialization and joint works in the economic and social activities at the village and Oblast levels. It should be reminded, however, that the participatory approach and socialization will take time in maturing and consolidating.

Foreign tourists and investors may also be guided to take the participatory approach. For instance, foreign investors in the tourism sector would be guided to contribute something to the communities in the vicinity of their investment and they would maintain a close relationship for the mutual interest. It would greatly contribute to the creation of a harmonized society in the Issyk-Kul zone.

An open information system is to be established for promotion of the participatory approach in the implementation of the proposed Issyk-Kul development plans. With the closed information system, mutual trusts will not be enhanced and the participatory approach will not be sustainable. The open information system will also be adopted in the strengthening of legal and institutional aspects of the integrated Issyk-Kul development, as discussed and proposed in the latter part of this report.

It is added to note that for this study on the integrated regional development of the Issyk-Kul zone, the participatory approach has been taken at various levels. For instance, working groups have been formed at the central and regional levels to identify constraints/potentials in the region and formulate plans for integrated development. At the community level, workshops have been held with villagers and other stakeholders.

Their views have been reflected in planning. This approach will be continued in the implementation of the proposed plans. All the data and information collected and used for this study have been opened to the stakeholders.

6.5 Community Development as a Basis of Integrated Development

The participatory approach proposed in the foregoing section is to be initiated first through enhancement of community development at the village level. This strategy is proposed as it has been identified that the collapse of cooperative type agriculture and enterprises has resulted in the distrust among the villagers and workers and delinquency of younger generation, as well as in the lack of social capital for development. Principles of the market-oriented economy will require independent and autonomous decision for the local people. Self-contained activity by the community is the basic strategy for development and maintenance of the community facilities, as well as in promoting industrial clusters and the community and regional levels. Further, the people will recognize that individual efforts will not be sufficient to face the competition under the market-economy.

Two pilot projects for community development have been operated in the course of this study. These pilots are designed to reactivate the community through collaborative works that would also contribute to income generation of the community. Under the pilot projects, collaboration for the income generation activities has been emphasized since an ordinary approach to community development through improvement of social infrastructure is considered to be less sustainable.

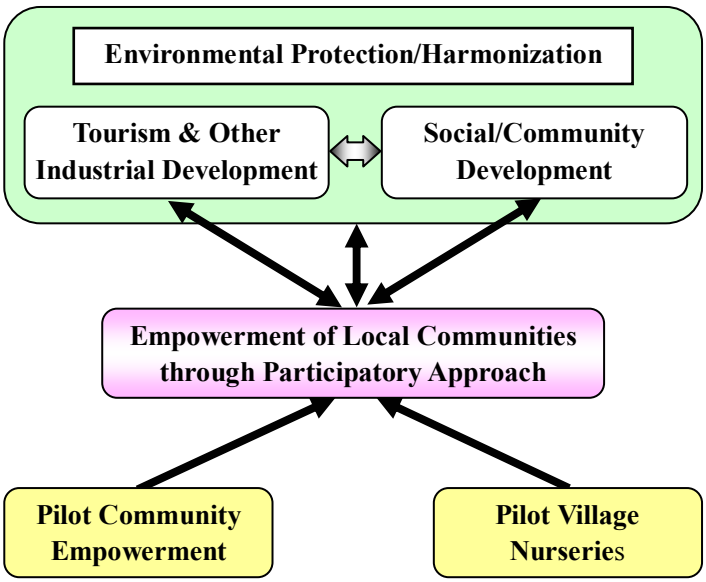


Figure 6.3 Empowerment of Local Communities for Integrated Regional Development

The results of the pilot community development projects will be evaluated and the community development plan will be proposed in the latter section of this report. It is noted that the community development would be required for promotion of local governance, as well.

In the course of this study, it has been discussed how tourism in the Issyk-Kul zone is to be developed. One of the opinion was to develop "elite tourism" in this zone. It is understandable that the tourism facilities and services should be of high quality and standards. However, if the elite tourism is to develop such facilities in a closed concept without promoting linkages with communities in the vicinity, visitors would be unable to enjoy heart-to-heart or healthy contacts with the people in the region and enterprises would be unable to enhance the Issyk-Kul cluster as proposed herein. In this context, too, it is proposed that the communities be developed to create a healthy and harmonized development in the Issyk-Kul zone.

6.6 Promotion of a Cycle-oriented Society

Under the planned economy, the people in the Issyk-Kul zone had been accustomed to work under the direction of higher authorities. Shifted into the market economy, the people and enterprises are now required to find out a new system of society.

Fortunately, in the Issyk-Kul zone, development of a mass-production type of industry is not planned to face the global competition. The community and industrial activities are more oriented to produce niche products for the niche market. In this context, it is proposed that a cycle-oriented type of society be promoted in the Issyk-Kul zone. Some examples of the cycle-oriented society are observed in practice, and it would be further encouraged to promote it under the proposed integrated development plan.

For instance, villagers are cultivating apple trees. Bee cultures are promoted in and around apple orchards. Honey is marketed and propolis is processed for medicine. Harvested apple is used for human consumption and for production of apple juice. The waste of juice extraction will be utilized for cattle breeding in the apple orchards where excrements of cattle are used as nutrients. Cattle breeding are encouraged for livestock development. The sewage collected from households and treated at the plant will be used for irrigation in apple orchards.

The operation of this type of cycle-oriented society is facilitated by strengthening community development and trained leadership of the society, as well as by promoting a cluster at the community level. It is an environment-friendly society. It is therefore proposed that the cycle-oriented society be promoted by implementing the proposed programs for development in an integral and cycle-oriented form.

6.7 Development Based on Culture and Historical Heritage

The Issyk-Kul zone is endowed with the beautiful natural landscape and biosphere, and these assets will form the basis for integrated regional development. Added to these assets is the cultural and historical heritage of Issyk-Kul. The coastal road along the Issyk-Kul Lake, as well as the artery connecting Kemin – Balykchy – Naryn – Kashgar, is a tract of the Great Silk Road. The area around the Issyk-Kul Lake is registered with UNESCO as a reserved area.

The Great Silk Road running through the Issyk-Kul zone is not only attractive for tourism development but also for cultural development. Visitors would imagine the ancient people travelling along the Silk Road for trades and exchange of culture. There still remain some ruins along the northern coastal road of the Issyk-Kul Lake. Although the museum in Cholpon-Ata has limited number of historical heritages to show, visitors would be drawn back to the Silk Road era if displays were improved.

Another notable historical heritage is a stone curve scattered mainly in the northern coastal area of the Issyk-Kul Lake. The UNESCO sponsored study has mapped out the locations of such stone curve and historical heritage, and it is used as a preserved area in land use planning and management.

Cultural development should not be limited to the historical heritages. Contemporary cultural exchange is to be promoted by offering Issyk-Kul as a center for exchange of dialogues. The UNESCO sponsored dialogue for cultural exchange in Eurasia held in Issyk-Kul in July 2004 is a good initiative for promotion of a cooperative framework in the region where conflicts still prevail here and there. Regardless of whether it is called the cultural tourism or convention tourism, it is strategically promoted that the Issyk-Kul zone would serve for the enhancement of cultural development and for the promotion of convivial society in Central Asia, Eurasia and the world as a whole.

6.8 Promotion of Regional Cooperation

As discussed in Section 2.1, the Kyrgyz Republic is expected to lead the promotion of regional cooperation in Central Asia, and it would result in integrated development of the Issyk-Kul zone in medium and long terms.

The Issyk-Kul zone is in a position to offer chances for promotion of dialogues as experienced at the time of the recent UNESCO sponsored convention on promotion of dialogues in Eurasia. Issyk-Kul could host the summit meetings and other important meetings in Central Asia to promote cooperative regional frameworks. The objective set

for Issyk-Kul development, i.e., creation of a healthy and harmonized region, is attainable through contribution to promoting the cooperative frameworks.

The Issyk-Kul zone would also contribute to the promotion of cooperation in protecting the regional environment, particularly in the conservation of water resources and water quality. Although the Issyk-Kul Lake has no outflow of water from the lake, the ecosystem in the Issyk-Kul zone has a close relation with the surrounding river basins. For instance, the meteorological data and information in Issyk-Kul would be shared and utilized for water management of the adjacent rivers, like the Naryn river which is a tributary of the Syrdarya River flowing down to the Aral Sea through Uzbekistan and Kazakhstan. Regional cooperation is to be promoted for protection of the environment and water resources in Central Asia.

Likewise, regional cooperation should be promoted in transportation and other cross-border infrastructure development. The proposed improvement of Almaty – Kemin – Balykchy – Naryn – Kashgar road would facilitate the regional transportation system and formation of a cooperative framework in custom clearance and other soft-ware systems for regional cooperation.

For the effective promotion of tourism, the Issyk-Kul zone and the Kyrgyz Republic would better put together their efforts with other countries in Central Asia. In the course of this study, a workshop has been held in Issyk-Kul, inviting representatives from the public and private sector of five Central Asian countries. Participants have agreed to jointly promote tourism in the region. They have adopted the “Issyk-Kul Initiative” for joint tourism promotion.

It is therefore proposed that the development projects and programs be strategically planned and implemented in the Issyk-Kul zone with the mind and practical measures for promotion of regional cooperation in Central Asia.

CHAPTER 7

LAND USE PLAN AND MANAGEMENT

7.1 Background of Land Use Planning

Land use is one of the most important factors in formulating the integrated development plan of the Issyk-Kul zone. Current land use and land ownership have been assessed as described in Section 3.2. The future land use plan is elaborated on the basis of directions and programs for social and economic development of the zone and their environmental impacts, as well as the current land use and various restrictions to be reflected in land use. The future land use plan will serve as a Master Plan to maximize the regional and national interest, and a guideline for the formulation of land use plan by rayon and Ail-Okumotus (AO), as well as for preparation of the urban development plans. It will be developed and utilized as a General Scheme based on the legalized spatial development plans.

The future land use plan will take into account the land reform with which the private land ownership has been and is being advanced. Since the land reform has been promoted rather drastically, and the existing laws, regulations and procedures are often considered as hindrance for development, the land use management plan should be elaborated together with the land use plan.

The future land use plan has been formulated in line with the strategic environmental assessment (SEA). The SEA pays attention not only to the natural and economic conditions, but also to the social condition and opinions of stakeholders. Various meetings have been held in the course of the study to exchange opinions on the future land use. The stakeholders recognize that the management of the land use plan and its related regulations should be properly monitored so that it would make the implementation of the integrated development plan of the Issyk-Kul zone more sustainable.

The SEA has been applied to this land use planning in the following manner:

Figure 7.1 Strategic Environmental Assessment Applied to Land Use Planning

7.2 Major Factors Considered under Land Use Planning

For elaboration of the future land use in the Issyk-Kul zone, various physical conditions and factors have been assessed and taken into account in addition to the social factors and opinions of stakeholders. Major factors are:

(i) Current Land Use Situation
- Current land use (as noted in Section 3.2)
- Current land ownership (as noted in Section 3.2)

(ii) Development Framework
- Suitable area for lake-side resorts (as noted in Section 4.5)
- Spatial development framework (as noted in Section 5.4)

(iii) Hazardous Areas
- Seismic hazardous area
- Soil erosion hazardous area
- Snow slide hazardous area

(iv) Protection Areas
- Archeological sites (identified by Archeological Science Academy)
- Biosphere reserve areas (identified by GTZ assisted program)

(v) Other Regulated Areas
- Water safety zone from the edge of the Issyk-Kul Lake
- Proposed areas for protection of landscape

(vi) Potential Area for Irrigation, Tourism and Industrial Development
- Tourism development plans (as noted in Section 3.5)
- Potential areas for future irrigation
- Potential areas for FEZ and other industrial use

Except for those discussed previously, major factors to be considered additionally for land use planning are summarized in the following.

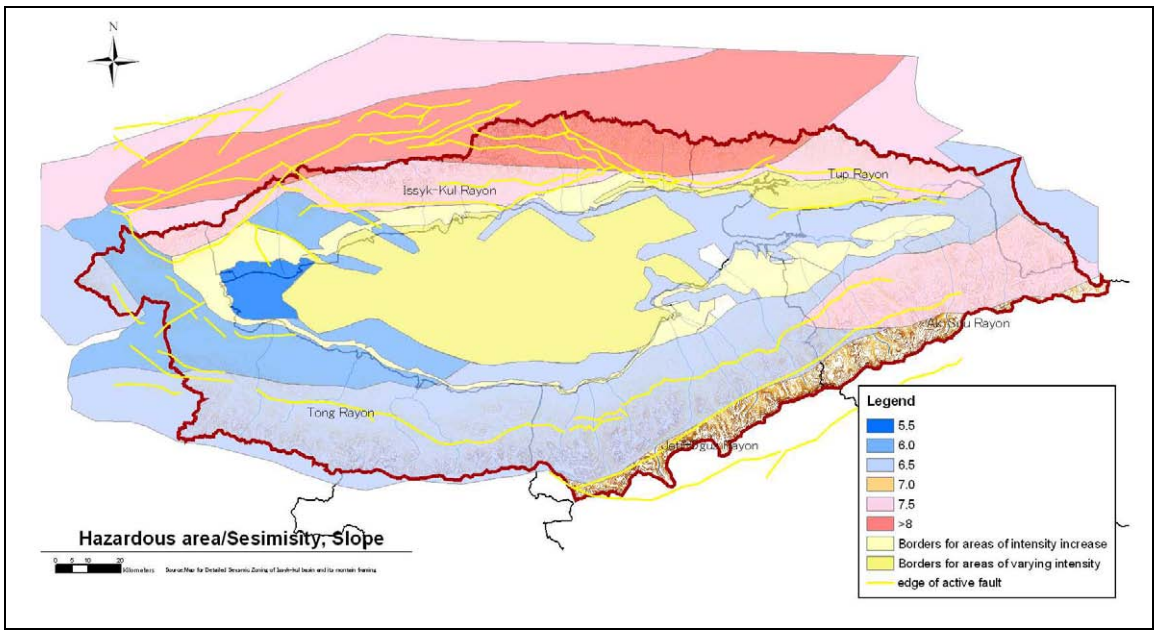
Seismic Hazardous Areas

As indicated on the seismic map of the Issyk-kul basin prepared by the Institute of Seismology, Academy of Sciences, the Issyk-kul basin is divided into several zones and sub-zones based on the level of seismic-tectonic potential, including the corresponding magnitude level analysed on the basis of the survey of existing seismic effects such as geology, geophysics, and seismology in the region.

The Issyk-kul basin has two distinguished seismic generated zones; i.e., the Northern-Tianshanskaya zone and Southern-Issykkulskaya zone. The most dangerous area is in the eastern part of the Northern-Tianshanskaya zone named as Chiliko-Keminskaya sub-zone located to the north-eastern boundary of the study area.

The sub-zone indexed with the magnitude 8 coincides with an isoseismal line of disastrous earthquakes.

Another factor to be considered is the location of intensive active fractures that will induce a release of seismic energy. The fractures at the most dangerous level are named fractures of the first stage, and mainly situated in the northern part of the study area. It may cause the dynamic influence with 800 to 1000 m on both sides of the fracture.

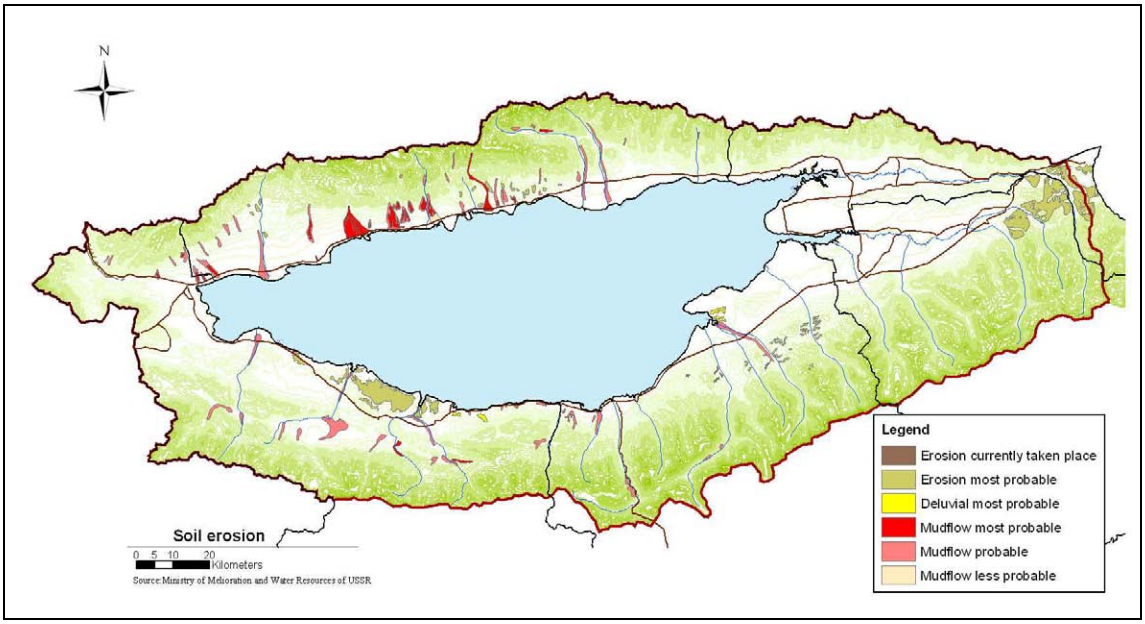


Source: Institute of seismology

Figure 7.2 Seismic Hazardous Area

Soil Erosion Areas

The Issyk-Kul zone is classified into erosion, *deluvial*, and mudflow with the level of hazard probability. Soil erosion is likely triggered by glacial encroachment or heavy rainfall. The hazardous area of soil erosion is seen in nearby Djuuku River and in Chon Kyzyl Suup River in Jeti-Oguz rayon. Other potential erosion sites are located in the area of lakefront between Aktrek and Ak Sai rivers in Tong rayon, and in the area of the eastern border of the study area over Tup and Jeti-oguz rayons. Another area is *deluvial* processed by avalanche or rainfall. There are a few potential *deluvial* in Tong rayon and Jeti-oguz rayon. Those hazardous sites are mostly situated in the southern part of the study area. The potential mudflow hazards cover all of Issyk-kul rayon. Some of the hazardous areas are located along the main road running between Balykchy city and Cholpon-Ata city.

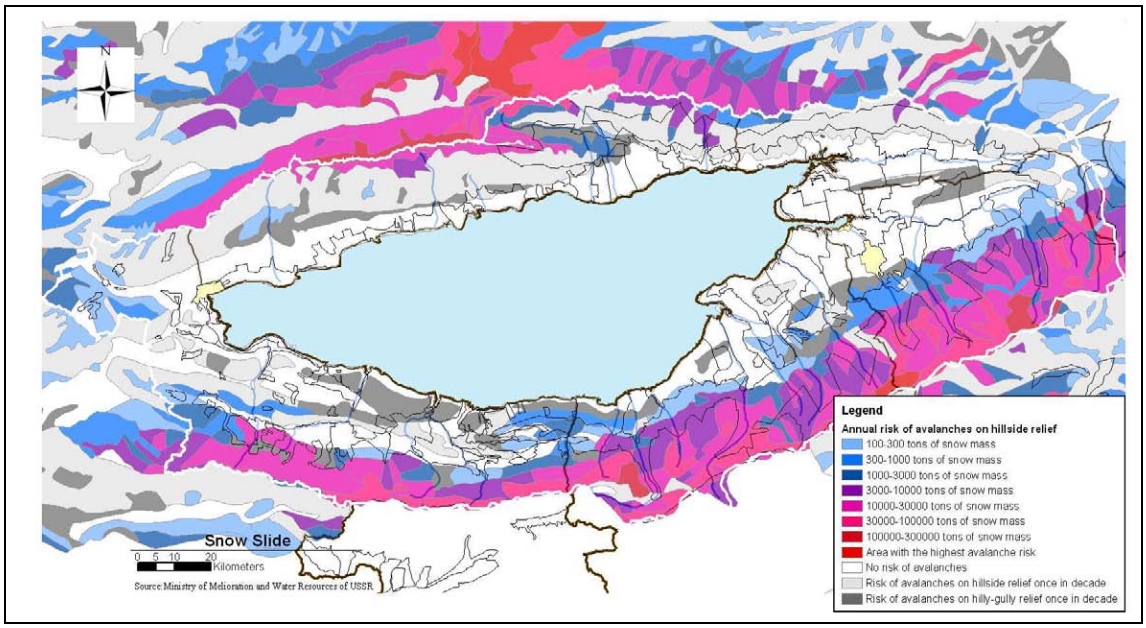


Source: Academy of Science

Figure 7.3 Soil Erosion Hazardous Areas

Snow-slide Hazardous Areas

According to the data and information available of the Academy of Science, the snow-slide hazardous areas are mapped out as illustrated in the following Figure.



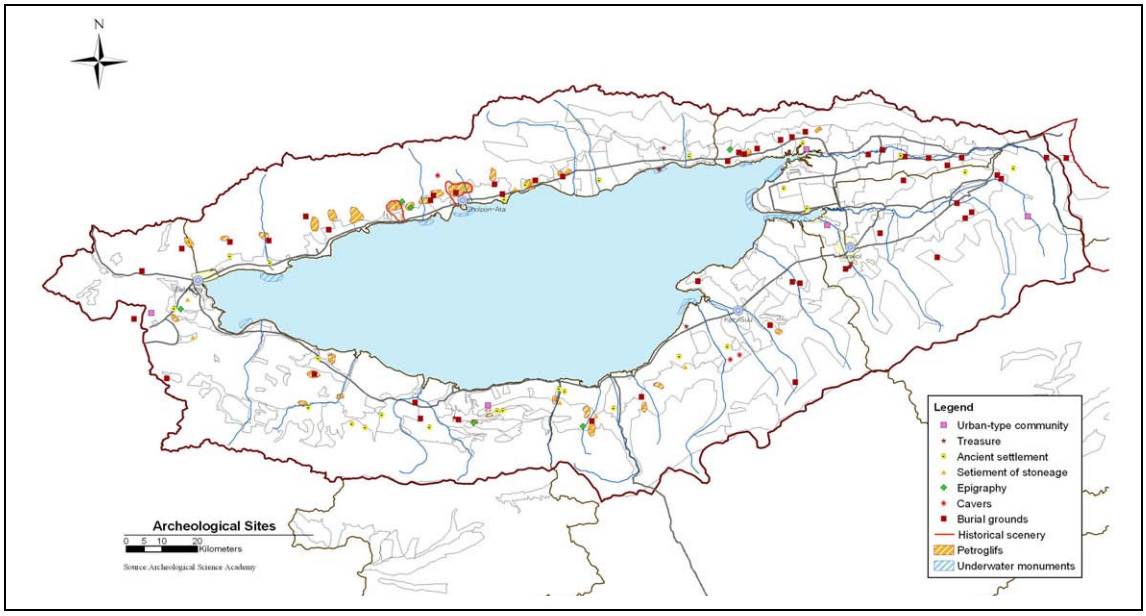
Source: Academy of Science

Figure 7.4 Snow Slide Hazardous Areas

Archeological Reserves

The Issyk-Kul zone is one of the richest archeological sites from different periods between Stone Age and Ethnographical modern time. The archeological sites contain

the stands of petroglyphes, burials, cenotaphs, stone sculptures from Turk era, sites of Middle Age's settlements, treasures, monuments of epigraphy, and underwater ruins. All these monuments are located in the coastal areas, as well as in canyons and higher in the mountains. An outstanding part of the monuments is to constitute the archeological complex of historic and cultural landscape with spiritual activities by the ancients, such as petroglyphes, stony constructions, and burials. In the northern part of the Issyk-Kul zone, there is an existing mass of petroglyphs extending more than 200 km starting from Boom Canon to the west of San-Tash pass to the east. The most concentrated petroglyphs are on the western side of the coastal land between Balykchy and Cholpon-Ata located nearby existing villages. The location map below indicates the known archeological sites. These archeological sites need special attention for protection.

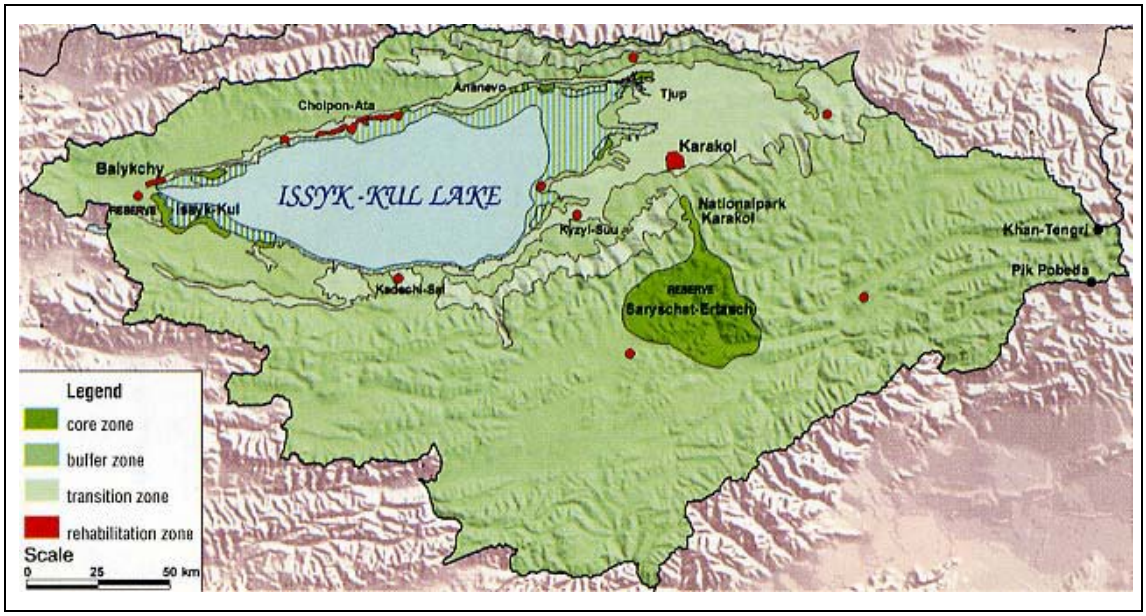


Source: State Institute for Management of Cultural and National Heritage

Figure 7.5 Archeological Sites

Biosphere Reserve zoning

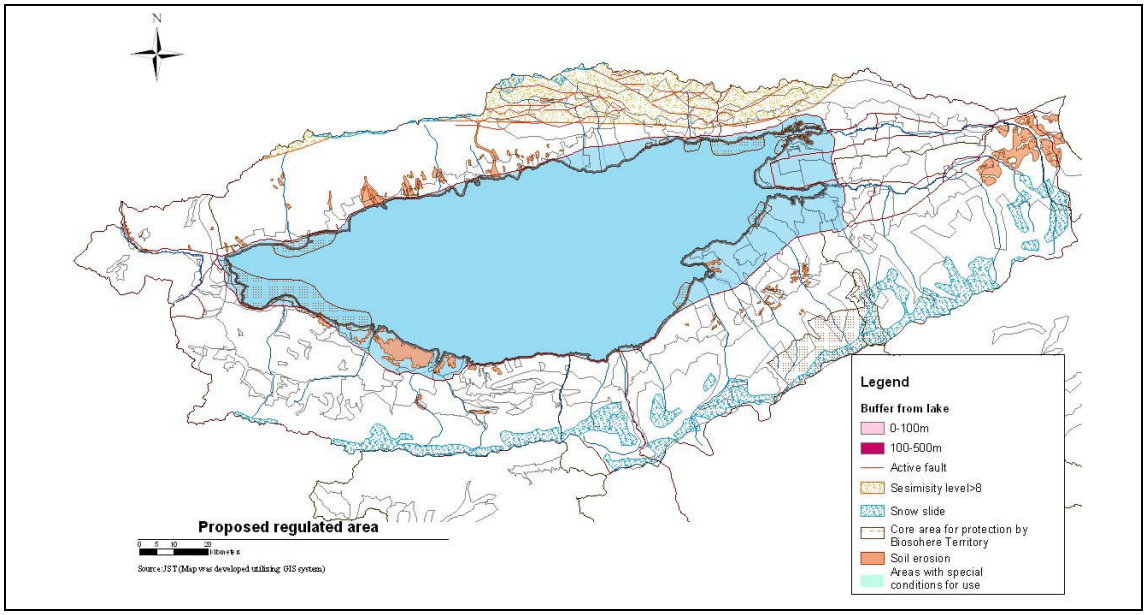
The Issyk-Kul zone contains a lot of interesting fauna and flora, with numerous endangered species. For instance, Marco Polo sheep and the Siberian ibex still graze in the mountain ranges, and the endemic Tien Shan brown bears are still found in the pine forests of Tien Shan ranges. The GTZ assisted program has been promoting the Issyk-Kul biosphere reserve with practical implementation of the protective regulations. The Issyk-Kul biosphere is classified into core, buffer, transition and rehabilitation zones, as illustrated in the following.



Source: GTZ assisted project "Promoting the Issyk-Kul Biosphere Reserve"

Figure 7.6 Biosphere Reserve Zoning

The regulated and protected areas as noted above are overlaid on the GIS map to indicate the land use restrictions in the Issyk-Kul zone.



Source: Compiled by JICA Study Team

Figure 7.7 Land Use Restricted Areas

On the other hand, lands suitable for agriculture have been assessed primarily on the basis of irrigability of lands as the annual precipitation in the Issyk-Kul zone is limited to around 200 mm to 500 mm. Based on the topographic map, land within a 5-km distance from major rivers and with a land slope of under 10 degrees has been identified. The soil condition and the existing irrigation area have also been mapped out.

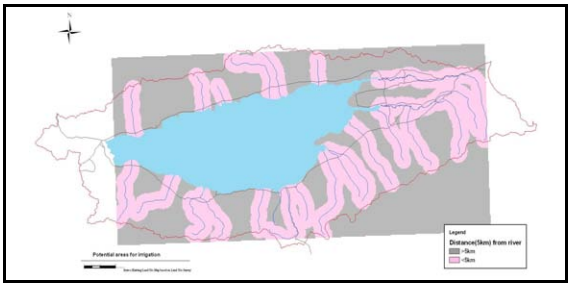


Figure 7.8 Land within 5-km from Rivers

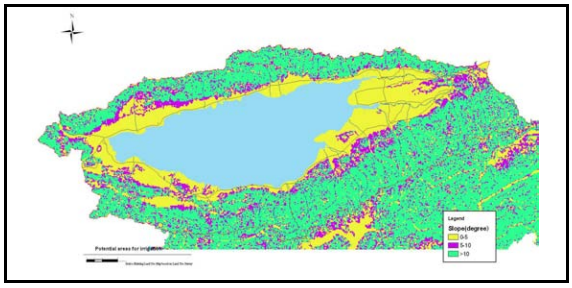


Figure 7.9 Land with Slope under 10 Degree

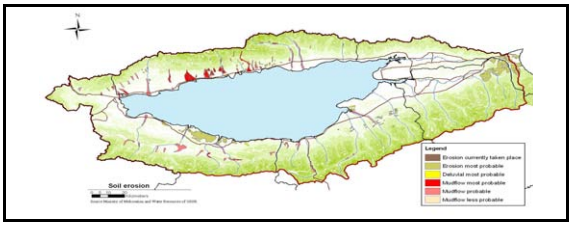


Figure 7.10 Land Classification by Soil

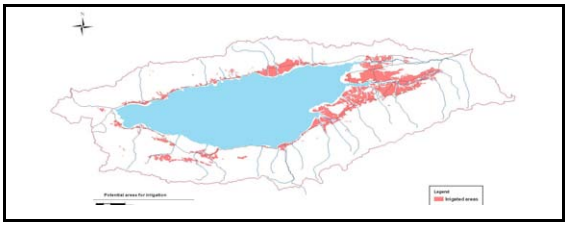
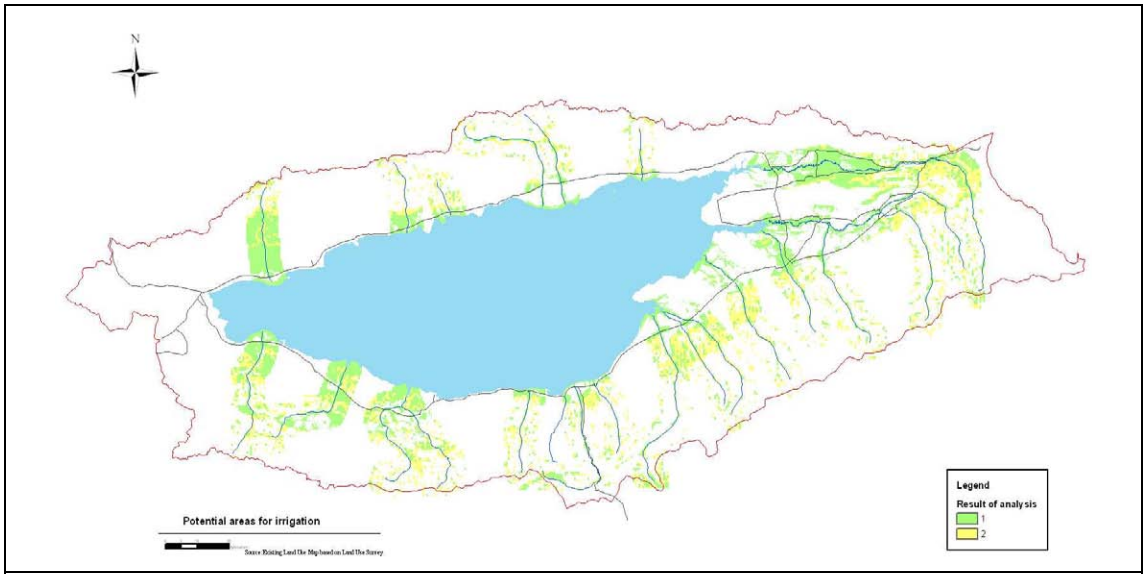


Figure 7.11 Land under Existing Irrigation

With these conditions, potentially irrigable areas have been mapped out as shown in the following.



Source: Compiled by JICA Study Team

Figure 7.12 Potentially Irrigable Areas

7.3 Land Use Planning

The future land use plan of the Issyk-Kul zone is mapped out to show how the land use is directed towards the year 2025, on the basis of the existing land use, protected and/or restricted areas, as well as the spatial development framework and socio-economic

framework as discussed in Chapter 4. Basically, the land use will be planned in view of the perception of stakeholders and in a form acceptable to them. To this end, the land use and land regulation will be separately prepared under the same principles.

The land categories to be used for the land use plan are defined in accordance with the Land Code as agreed by the Workshop of stakeholders. They are: (i) urban and villages, (ii) recreational land, (iii) agriculture land (irrigated or non-irrigated), (iv) pasture land, (v) forest, and (iv) other land unsuitable for use. The Land Code and land classification are summarized in the following table.

Table 7.1 Land Use Categories

Land Use Category	Category in Land Code
(i) Urban and Villages	Article 10: 2) land of settlements (cities/towns, rural and urbanized settlements) and 3) land of industry, transportation, communications, defence, and other designation.
(ii) Recreational	--
(iii) Agriculture	Cultivated part of Article 10: 1) agricultural land
(iv) Pasture	Pasture part of Article 10: 1) agricultural land
(v) Forest	Existing forest areas in addition to Article10: 5) forestry fund land

The land for expanded use in the future will be called the “reserve”, e.g., urban land reserve, recreation land reserve, and irrigation land reserve. The land designated for such reserves will be controlled by regulation for its use and land transaction, but it may be left as pasture and other land use until development is realized.

Regulation of land use in each land use category is to be defined as summarized on the following table.

Table 7.2 Land Use Regulation by Category

Land Use Categories	Regulations
A. Urban and Villages	
(1) Existing Urban Area	Existing built-up areas（City, SUT, Rural Settlement）, to be maintained in good condition.
(2) Reserved Urban Area	Reserved area for future expansion of built-up areas, including planned FEZ.
B. Recreational	
(3) Existing Resort Area	Existing plots for large scale resort facilities.
(4) Reserved Resort Area	Reserved area for future development of large scale resort facilities along the shore of Issyk-Kul lake.
C. Agriculture	
(5) Existing Irrigated Area	Existing irrigated farm land to be maintained in good condition..
(6) Reserved Irrigated Area	Reserved area for possible future expansion of irrigation. Not strictly
(7) Non-Irrigated Area	Farm land without irrigation until 2025.
D. Pasture Area	
(8) Pasture Area	Leased as well as unleased pasture lands (incl. summer, autumn, winter and spring pastures).
E. Forest Area	
(9) Forest Area	Existing actual forest to be remained and/or revitalized, regardless to the type of ownership and management.

Through discussions with stakeholders at the Workshops, the land use in each category will be planned to the following directions.

Urban Land

(i) Urban land use plan has been recently formulated for three major centers in Balykchy, Karakol and Cholpon Ata with a support of USAID. Land acquisitions in the existing urban centers are found difficult, while a number of applications are submitted for acquisition in the coastal land. The potential land for new tourism and resort centers in the coastal area will be taken into account.

(ii) There is a demand for designation as reserved urban area. However, the existing urban areas have low density in land use. Unreasonable expansion of urban area that would require for additional infrastructure will not be desirable. Current designation of urban land use will be respected.

(iii) Strategic development is required for industrial development, as in the case of FEZs, and land for industrial use will be newly designated by referring to the spatial development framework.

Recreational Land

(i) Tourism is the most promising sector in private investments. The stakeholders hope that the land between the coast and the coastal ring road would be used for large scale investments in hotels and resorts in view of the existing sanatoriums located along the coast.

(ii) In view of the requirements for lands for recreational use, some areas nearby the existing villages along the coastal road might be designated as reserve lands. Detailed process in its designation should be discussed separately.

Agricultural Land

(i) Agricultural land has been deteriorated due to privatization of farm land and changes in rotational cropping that had been in practice during the centrally planned economy. Farming practice would be further shifted with the crop diversification.

(ii) Land tenure of cultivable area has turned out to be smaller, and individual farm land is of slender in shape to ensure access to irrigation canals. Large-scale mechanization in farming would not be practical in future.

(iii) The flat land for agricultural use is limited in Issyk-Kul and the current land for agricultural use will be protected to the utmost extent.

Pasture Land

(i) Pasture land has also been deteriorated as breeding has been concentrated in the pasture land nearby, while some pasture land in remote areas have become bush areas.

(ii) Pasture land is the state property and is leased for private use. Prices for lease are irrational and land use is irregular. Since the pasture land is an identity of the state, the pasture land will be properly maintained and utilized for livestock in Issyk-Kul, except for the currently designated reserve lands.
(iii) Breeding in coastal shore will not be permitted for protection of the lake water quality, at least within 100 m from the coastal line.

Forest

(i) Forests are state property and have been protected by the State Forest Service. It is reported by stakeholders that the coastal land along the lake was full of bush some decades ago but it was cleared due mainly to livestock breeding. The mountain slopes have also been deforested by villagers and used for firewood.
(ii) Reforestation of the coastal land and mountain slopes is required along with the shift of farm land into orchard and.
(iii) Forestation in private land along the coast will be regulated by designating a green rate in land use.

Now the major focuses in land use planning are placed on the use of "Reserve Land" for urban use, recreational use and use for irrigated agriculture. The reserve land will be designated in the following manner.

Reserve Land for Urban Use

(i) Designation of land for use by FEZs is to be discussed primarily in the Balykchy and Tamchy areas. Some alternative land use in these areas will be comparatively studied, and the most appropriate land use plan is to be proposed.

Reserve Land for Recreation Use

(i) Several limiting factors should be taken into account; e.g., limited length of coast suitable for tourism use, existence of nature sensitive coast, and conflict with highly productive farmland.
(ii) Suitability for lake shore resort development has been analyzed and allowable capacity for recreational development has been assessed as noted in Section 4.5. The reserve land for recreation use will be designated by referring to this assessment.

Reserve Land for Irrigated Agriculture

(i) Potentially irrigable land has been assessed as noted in Section 7.2 and it will be referred to in designating the reserve land for irrigated agriculture.
(ii) As discussed in subsequent Chapter 9, farmland will not be increased substantially under the agricultural development plan. Increase in agricultural output and

income will be attained not by the expansion of irrigated land but the enhancement of productivity and crop diversification.

Considering these directions, as well as on the basis of factors for land use planning as discussed previously, the future land use zoning in the Issyk-Kul zone has been planned as shown in the following table and figure.

Table 7.3 Future Land Use

(Km^2)

Category	Current Land Use	Changes	Future Land Use	Future Land Use by Rayon				
				Ak-Suu Rayon	Issyk-Kul Rayon	Jety-Oguz	Tong Rayon	Tup Rayon
Urban/Settlements	246.6	0.0	246.6	48.0	53.0	64.2	30.0	51.3
Urban reserve	0.0	1.7	1.7	0.0	1.2	0.0	0.5	0.0
Existing resort	29.4	30.4	59.9	0.6	24.2	20.6	8.5	5.9
Resort reserve	0.0	30.4	30.4	0.5	7.2	20.4	2.3	0.0
Irrigated farmland	1,404.6	-0.3	1,404.3	413.1	276.0	385.3	200.2	129.6
Non-irrigated farmland	739.4	-0.9	738.5	132.6	55.1	55.3	103.4	392.1
Irrigated farmland reserve	0.0	6.5	6.5	0.0	3.5	0.0	3.0	0.0
Pasture	6,395.3	-21.4	6,373.9	375.7	2,111.9	715.8	2,704.4	466.1
Forests	455.3	-3.6	451.7	20.0	196.3	119.0	58.9	57.6
Others	97.6	-0.6	97.0	13.2	48.4	7.0	21.8	6.7
Unused land	7,738.8	-42.2	7,696.5	2,240.3	833.2	2,237.4	1,411.1	974.5
Lakes	6,255.0	0.0	6,255.0					
Total	23,362.0	0.0	23,362.0	3,244.0	3,610.0	3,625.0	4,544.0	2,084.0

Source: JICA Study Team

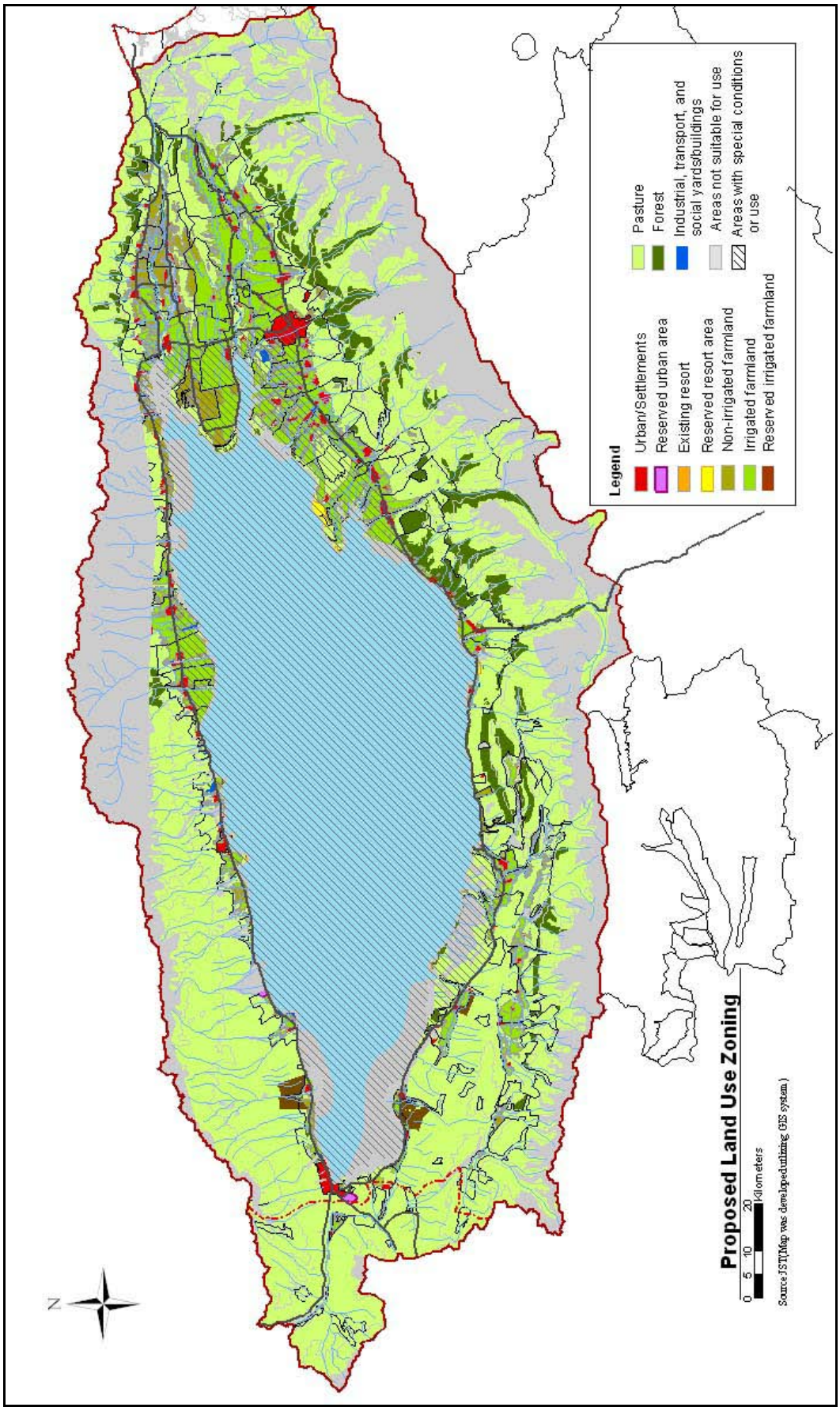


Figure 7.13 Future Land Use Zoning

7.4 Land Use Management Plan

In the Kyrgyz Republic, the "General Scheme" and "General Plan" have been used as a policy level plan to guide the detailed physical plans for development in smaller areas that are used for design and investment purposes. The land use regulations have also been recognized by the people though there are a great number of laws and regulations issued in a relatively short period.

The Kyrgyz government has in mind to adopt the land use plan formulated under this study into the legal physical planning system of the country. The land use plan formulated under this study, however, will not be efficient enough to resolve day-to-day issues providing potential investors with necessary information for their examination. It is therefore proposed that the legal physical planning and land use management system be restructured to satisfy users' requirements in a more effective and efficient manner. The public interest should be reflected on the land use plan and it management.

(1) Major Constraints on Current Land Use Management

The first concern related to the current management system is a negligence of landowner's decisions on their own properties. The land use categories shown on the land use plan are to seek for the best solution for respective land use purposes. It will not aim at forcing the landowners to use their land as depicted in the plan. This perception is particularly important for the management of agricultural and pastures land.

The second concern is the access to the beach area. For development of the beach resort area along the lake, it is important that the access to the beach area is ensured for the public in most cases. Currently the water buffer zone of 500 m from the shore is exclusively used by resort facilities, though the land remains as a state property. Although the easiest solution is to prohibit the use of this water buffer zone, it will not be practical under the future land use plan. In order to ensure public access to the beach areas, it would be necessary to introduce additional regulations to permit a certain area for public use within the leased resort areas.

The third concern is the complicated process of evaluation and approval by the central government. The procedures should be simplified. If the land use plan proposed under this study is integrated into the national physical plan system, the public interest is considered to have been reflected and it will facilitate in simplify the evaluation and approval process. The central government, under such conditions, will concentrate on monitoring of land use, particularly on the conservation of the biosphere territory.

The forth concern is the fact that the detailed physical plans have not been prepared at the Aiyl Okmotu level. The current physical planning system of Aiyl Okmotu should be

improved to facilitate evaluation and approval of land use, as well as to facilitate monitoring systems.

(2) Recommended Programs for Land Use Management

For better management of the land use in the Issyk-Kul zone, some programs are recommended. They are:

(i) Introduction of Incentives for Land Use Control
(ii) Restructuring of Spatial Planning System
(iii) Streamlining of Procedures for Land Use Permission

(i) Introduction of Incentives Measures

The incentives measure for land use control should be introduced over the taxation system on farmland and lease pricing on pasture land. The land tax is a major source of income for the Ayil Okmotu administration. The tax rates are set by the Ministry of Finance with a certain range of difference to be entrusted to own decision by Ayil Okmotu administration. The condition and productivity of each farming land plot must be assessed by updating the existing information such as the Recommended Future Land Use prepared by GTZ, or the results of Detailed Land Use Survey conducted in the Study. There is certain accumulation of know-how to carryout this task in the Kyrgyz State Project Institute for Land Development, or better known as Giprozem, under the Gosregistre. As preparation of an electronic map system for taxation purpose is about to start in Gosregistre, the result of assessment can be effectively integrated. The responsibility of carrying out the series of works should be set on the Oblast administration for a while, since only the Issyk-Kul zone has officially adjusted with national level policies. The fund for the assessment work shall be fully provided by the Oblast administration.

Regarding the setting of tax rates the following should be taken into consideration:
The higher tax rate should be set on fine agricultural lands while lower for the lands which are degraded but designated to agricultural use in the plan. The highest rate may be set to the level by which the profitability of the land is still higher than those lands rated lower. The lowest rate should be set to partly cover the cost for investment in the land to regain the productivity.

For setting the leasing price for pastures, the on going effort should be enhanced by providing information of the distribution of pastures by conditions, and guiding the concerned bodies to set the prices rationally in view of wider context. These works should be initiated by the Oblast administration on the same reason mentioned above. Since there is a possibility of privatizing the State Forest Service as sometimes discussed in the country, the establishment of pricing scheme should be pursued with a flexible manner.

(ii) Restructuring of Spatial Planning System

The role and the character of the hierarchical physical plan system should be changed. A quick manner of planning should be pursued by reducing the number and depths of the pre-planning surveys to fit the current private land ownership system. The character of the drawing will be shifted from a design to a vision in each level of the plan more or less. The spatial structure of the target area of the plan should be set agreed among upper level administrations as well as inhabitants and other stakeholders, and be authorized. Those detailed plans on district level can be planned later on by full consultation with the neighbourhoods or even by the initiative of the neighbourhoods. Hiring of planning consultants and/or architects may become necessary. In order to reduce the high cost for procurement of these experts, the current license policy should be amended to enable local experts to participate in bidding. In the discussion among stakeholders, the importance of restructuring the Spatial Planning System was well understood. However, it seemed that the practical contents of the work required for the amended system

(iii) Streamlining of Permission Procedure

A quick and effective permission procedure should be established by expanding the authority and enhancing the capacity of Oblast level administration, while strengthening the monitoring function of the Biosphere Territory by the central government. Concerning the Issyk-Kul zone the interest of the nation is involved in the JICA Masterplan, thus further assessment by the national agencies on the construction/land development application will not be necessary. The central government should concentrate on international factors on Issyk-Kul zone, such as Ramsar treaty, Biosphere Territory Reserve, and possibly the Historical Heritages Conservation. To meet this, strengthening the capacity for assessment works is needed as the assessment works should be carried out by qualified experts situated in the local area. The central government organizations responsible for monitoring these international issues shall be clearly identified.

7.5 Proposed Projects/Program for Land Use Management

For integrated development of the Issyk-Kul zone, it is proposed that the following projects be implemented for promotion of the land use management.

Table 7.4 Progress Projects for Land Use Management

Sector/Subjects	Program/Project	Schedule		
		2005	-2010	-2025
Land Use				
Effective and efficient land use control	1) Introduction of incentives for land use control	▬		
	2) Restructuring of spatial planning system	▬		
	3) Streamlining of procedures for land use permission	▬		

CHAPTER 8

ENVIRONMENTAL ASSESSMENT AND MANAGEMENT

8.1 Environmental Considerations

As agreed at the outset of this study, the strategic environmental assessment (SEA) is applied for the formulation of a master plan of integrated development of the Issyk-Kul zone. SEA is a series of coherent assessments of environmental issues, for both natural and socio-economic environments, to establish environmentally sound development policies. SEA is defined as "an assessment being implemented at an upper level rather than a project level environmental impact assessment (EIA). It is conducted at a planning stage or a policy stage" (Guideline for Environmental and Social Consideration, JICA, April 2004).

While the project level EIA focuses on the impacts of specific sectoral projects, for example transport and agriculture, and often treats sectoral strategic planning as a given, SEA offers an opportunity for sector or zone-wide environmental analysis before projects are outlined. The main purpose of SEA is to improve investment decisions by bringing environmental opportunities and constraints into development planning at the policy and planning levels. SEA provides unique opportunities to internalize environmental factors into development planning to minimize future environmental costs, and ensure long-term economic and environmental sustainability.

Based on this guideline of SEA, the tasks of environmental consideration are defined for the integrated development plan of the Issyk-Kul zone as follows:

(i) To review the sector frameworks and development directions/principles
(ii) To decide environmentally significant or likely significant items, such as water quality or air quality, that may be affected with the implementation of the master plan
(iii) To evaluate the environmental capacity and pollutant loads for the environmental item(s) mentioned above (macro evaluation, evaluation of potential cumulative/multiple impacts)

(iv) To evaluate and analyze the environmental impacts of each project/program proposed by the master plan (IEE)
(v) To implement consultation with the stakeholder and to obtain agreement on the contents of the master plan
(vi) To formulate the environmental management plan

The review of the frameworks has been made in respect of social, economic, and spatial development, as discussed in Chapter 4. The future land use plan, as discussed in Sections 7.2 to 7.4 is also reviewed as one of the most significant factors for SEA. The direction of sector development, as outlined in Section 5.2 and the latter part of this report is also reviewed from the environmental viewpoint. They are summarized in the following table.

Table 8.1 Review of Development Framework for SEA

Item	Development Principle
Socioeconomic Framework	• Promote the tourism industry as major economic force contributing to the regional self-sustaining development of relevant industries such as other services, food processing and souvenir industries. Review the potential of manufacturing and mining sectors, which have stagnated after independence, and strategize the industry development through new investment.
Spatial Development Framework	• The development of southern coast is inevitable for the "Advanced Growth Scenario" and "Average Growth Scenario". • The concept of Balykchy developed as the gateway of Issyk-Kul zone was agreed in Workshop 2.
Human Resource Development/Health Care	• Vocational training should be intensively upgraded to support the tourism industry and other related skills such as IT need to be introduced for further development. • Preventative medicine needs to be introduced to improve the health condition of the local people by mobilizing local resources and knowledge. • In order to promote "health resorts", the quality of health services will be improved not only for local people but also for tourists and specific patients, by modernizing the existing facilities and training medical experts.
Land Use	• In 2025, a tourism resort area of approximately 20 ~ 60km^2 is predicted to be necessary in addition to the present resorts in the Issyk-Kul zone. Appropriate resort land around the Issyk-Kul Lake is estimated to be 40km^2, judging from the topographic characteristics, present land use and needs for environmental conservation. • Advanced Growth Scenario (60km^2), Average Growth Scenario (40km^2), Low Growth Scenario (20km^2) are discussed in Workshop 2; Average Growth Scenario was adopted for further land use study.
Community Development	• After independence, local communities have suffered from deterioration of social services and are seeking ways to improve themselves by restoring the social capital and employment opportunities. • A mutual assistance system with a participatory approach is ensured to maintain the local infrastructure and facilities. • The government should support communities by providing necessary expertise on various technical aspects and encourage entrepreneurship among local people with transparent assistance.

Item	Development Principle
Agriculture Development Plan	• The integrated agriculture shall be developed on the basis of natural/organic agricultural production, which characterizes current agriculture in the Issyk-Kul zone. • Despite the decrease in cereal production, the industrial crop (e.g. oil crops) and potatoes, vegetables, and fruit will be cultivated more. Production of beef will be increased, while goats and sheep are projected to decrease. • The product volume of vegetables, fruit and livestock and poultry will be increased in line with the demand of tourists and the increase in the export of the processed products.
Tourism Development Plan	• The tourism sector should grow as the most promising industry in the Issyk-Kul zone. Medical care, sports, conventions, training and education, etc. shall be promoted in addition to the current recreational and eco-tourism menus. • Proposal of Advanced Growth Scenario (2.5 million tourist arrivals in 2025), Average Growth Scenario (1.8 million), Low Growth Scenario (1.1 million) was discussed in Workshop 2; it was concluded that the Average Growth Scenario was agreeable.
Manufacturing Industry Development Plan	• SME will be established primarily in the category of agricultural food processing. The processing industries of livestock, fruit, honey and herbs will also be promising. • In accordance with the enhancement of the tourism industry, souvenir goods, food processing and flower nurseries will be advanced. • The construction industry will also be enhanced in accordance with the development needs for resorts and hotels, as well as for their maintenance. • IT software industry is a promising future industry of the Issyk-Kul zone. Utilizing the superior environment around the Issyk-Kul Lake area, incubation of the IT software industry in the Kyrgyz Republic could be promoted. • Financial infrastructure needs to be improved for easing the financial difficulties SME currently suffers.
Investment Promotion Plan	• Establishment of a tourism free zone and preferential tax treatment for tourism investors will be preferable to promote FDI in the Issyk-Kul zone, in the short run including a possible exemption of 20% VAT. • Appropriate control to prevent illegal use of the preferential incentives shall be intensified. • Capacity building is required for the local focal point of investment promotion. • Special attention will be paid for large-scale private investment for public consultations.
Infrastructure (Utilities)	• The restoration of the water supply facility is urgent for the improvement of the living environment of the local community. • Rehabilitation of the sewage treatment plant in Cholpon-Ata, Karakol, and Balykchy is urgently required. • Strict application of the effluent treatment law and regulation should be executed. • In line with the power demand increase, power transmission and distribution capacity should be reviewed to ensure stable power system and supply. • In the longer term, power supply through the grid would be combined with the hydrogen cell to effectively supply electric power and heating energy, as well as to credit the reduction of CO_2 emission by means of hydrogen energy. • Telecommunications between the Issyk-Kul zone and domestic core region and foreign countries should be upgraded. This will be the basic infrastructure for development of the IT software industry. Digital tourism reservations and digital agricultural market information, for instance, will support the upgrading of conventional industry in the Issyk-Kul zone. • Solid waste disposal system should be consolidated in the tourism area.

Item	Development Principle
Infrastructure (Transport)	• The bus and mini-bus will be the major modes of transportation for domestic and foreign tourists in the Issyk-Kul zone, while air and railroad will be subordinate modes. Tourism water buses on the Issyk-Kul Lake will provide an alternative option from Balykchy to coastal resort areas. • Through traffic from Almaty to the Chinese border via Naryn should bypass the Issyk-Kul zone. Therefore, development of a new Almaty - Cholpon-Ata route should be carefully studied. • The national road between Issyk-Kul zone and Bishkek is well paved. However, exceedance of capacity in Boom Valley is predicted due to concentration of tourism traffic in the peak season.
Institutional Setup for the Issyk-kul Development Zone	• Review the existing stakeholders for Issyk-kul development and streamline the complex institution for smooth implementation.

Source: JICA Study Team

The environmentally significant or likely significant items have been identified in formulating the strategy for the integrated Issyk-Kul development, as discussed in Section 6.1. It has been clarified that the water quality of the Issyk-Kul Lake is the most significant and sensitive factor for the regional environment.

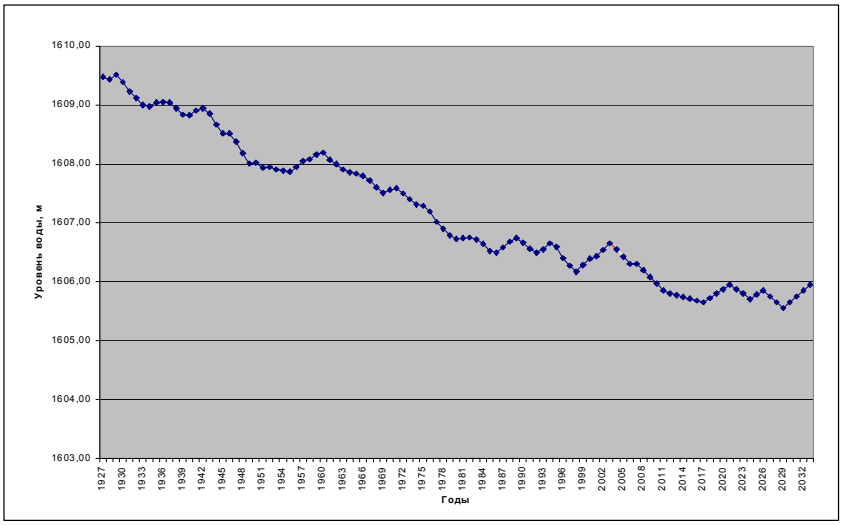
The environmental capacity and pollutant loads of the Issyk-Kul Lake have been assessed, as discussed in Section 4.6. Under the moderate growth scenario targeted for the integrated Issyk-Kul development, the predicted BOD, T-N and T-P values of the lake and inflow rivers are reproduced and tabulated in the following table.

Table 8.2 Predicted Water Quality under Targeted Moderate Growth Scenario

			Moderate Growth Case	
Year		2002	2010	2025
BOD	Average pollutant concentration of inflow rivers forecasted	1.33	1.48	1.74
	Average pollutant concentration of the Lake forecasted (mg/l)	0.61	0.66	0.75
	Average pollutant concentration of the Lake monitored (mg/l)	0.61	—	—
T-N	Average pollutant concentration of inflow rivers forecasted	1.03	1.130	1.290
	Average pollutant concentration of the Lake forecasted (mg/l)	0.15	0.160	0.180
	Average pollutant concentration of the Lake monitored (mg/l)	0.15	—	—
T-P	Average pollutant concentration of inflow rivers forecasted	0.012	0.0014	0.016
	Average pollutant concentration of the Lake forecasted (mg/l)	0.0011	0.0012	0.0014
	Average pollutant concentration of the Lake monitored (mg/l)	0.001	—	—

Source: Gidromet and JICA Study Team

Another issue to be addressed is the water level of the Issyk-Kul Lake. Its recent fluctuations have been a matter of concern for the Kyrgyz people. The level of the lake water surface was previously on a decreasing trend, but in more recent years has increased. The National Science Academy has analyzed and predicted the future trend as illustrated in the following.



Source: Academy of Science

Figure 8.1 Change in Water Level of the Issyk-Kul lake

A joint review of the above prediction has been made by the experts of the Academy of Science and JICA expert (Prof. Fukushima). Their findings are summarized as follows:

The Issyk-Kul Lake has a surface area of 6,236 km² or 28% of its catchment area (22,080 km²). The water level descended by 2.42 m in 78 years or 0.031 m per annum on an average. It ascended in 1956-60 (0.064 m per annum) and 1999-2004 (0.13 m per annum). The monthly fluctuation is high in August-September and low in January-March. The annual mean precipitation (1994-2003) varies from 147.9 mm at Balykchy to the west, 291.2 mm at Cholpon-Ata, and 382.7 mm at Kyzyl-Suu to the east.

Three methods are considered for analysis of changes in the lake water level. The first is a hydrological water budget method. The available precipitation data, however, are too sparse to estimate the evaporation from the Lake. The second method is an atmospheric water budget method, and it appears more appropriate to estimate atmospheric changes in larger areas like the Issyk-Kul Lake; however the upper meteorological observation has not been executed in the Republic. The third method is a statistic analysis as applied by Dr. Romanovsky. He analyzed that the water level has been varied for a cycle of 30 years.

A conceivable reason of the lake water fluctuation is the shrinkage of glaciers. Glaciers in the catchment area extend some 650 km² that appears to be relatively small (less than 3%) compared to the water budget of the catchment area. Another reason is the irrigation water intake. It has some relations with the lake water level fluctuation. Irrigation intake was at the minimum level in 1958 and 1998 and water level started to ascend in 1959 and 1999.

It is concluded that the prediction of the Issyk-Kul Lake water fluctuation is difficult at this stage due to the shortage in hydrological and meteorological data. It is therefore recommended that the hydrological and meteorological observation network be strengthened (at least 2 additional stations should be set up) and that the upper atmospheric layer be observed by radio-sonde to obtain adequate data for prediction.

The atmospheric pollutants contributing to air quality should be reviewed and discussed, although their impacts or loads in the Issyk-Kul zone appear to be less significant. With the increasing number of tourists and expansion of urban areas, traffic volume of vehicles and consumption of energy will without doubt increase.

According to the available data, the volume of emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x) and carbon monoxide (CO) from stationary sources is summarized in the following table.

Table 8.3 Emission of Air Pollutants from Stationary Sources

Unit：1,000 ton

	1990	1995	1996	1997	1998	1999
Kyrgyz Republic						
Dust	82.5	25.1	21.6	17.0	18.8	13.6
SO_2	56.0	15.7	14.0	9.9	10.9	8.7
NO_2	12.3	3.4	3.5	3.5	3.5	2.4
CO	30.4	7.5	5.5	4.6	5.09	3.7
Total	194.0	55.0	47.4	37.5	41.2	30.9
Issyk-Kul Oblast						
Dust	5.5	1.8	1.9	2.3	2.0	1.9
SO_2	3.2	0.9	1.1	0.9	0.5	0.5
NO_2	0.5	0.2	0.2	0.2	0.2	0.1
CO	3.4	0.7	0.8	0.6	0.4	0.4
Total	12.7	3.6	4.0	4.0	3.1	2.9

Source: National Statistical Committee

With the economic development in the Issyk-Kul zone under the moderate growth scenario, the estimated total emission (2,900 tons/year in 1999 and 3,640 tons/year in 2002) would increase to around 4,370 tons/year in 2010 and 5,260 tons/year in 2025, as shown in the following table.

Table 8.4 Estimated Emission from Stationary Sources

		Average Growth	
	2002	2010	2025
Amount of Emission Generated (Ton/Year)	3,640	4,370	5,260
%	100	120	145

Source: JICA Study Team

With the increase in traffic volume, air pollutants (e.g. carbon monoxide and hydrocarbons) are generated. Based on the estimated traffic volumes for the years

2010 and 2025, the estimated volumes of generated automobile emissions are presented in the following table.

Table 8.5 Estimated Volume of Automobile Emissions

(Unit: ton/year)

	Year	2004					2010					2025				
		CO	HC	NO_X	CO_2	SPM	CO	HC	NO_X	CO_2	SPM	CO	HC	NO_X	CO_2	SPM
Boom Valley	Passenger car	31.4	2.0	5.3	3,854	0.2	48.3	3.1	8.1	5,932	0.3	99.0	6.3	16.6	12,155	0.7
	Bus	10.4	4.6	15.1	1,960	2.3	17.1	7.6	24.7	3,210	3.7	34.1	15.1	49.4	6,409	7.4
	Truck	9.8	4.9	14.1	1,767	2.1	11.2	5.6	16.1	2,019	2.4	26.3	13.1	37.8	4,733	5.6
	Total	**51.6**	**11.5**	**34.5**	**7,582**	**4.6**	**76.6**	**16.2**	**49.0**	**11,161**	**6.4**	**159.4**	**34.4**	**103.8**	**23298**	**13.6**
Balykcy-Cholpon Ata	Passenger car	69.0	4.4	11.5	8,470	0.5	108.5	6.9	18.2	13,326	0.7	214.8	13.6	35.9	26,379	1.4
	Bus	33.0	14.6	47.9	6,213	7.2	49.7	22.0	72.1	9,348	10.8	100.0	44.3	145.0	18,812	21.7
	Truck	9.8	4.9	14.1	1,768	2.1	10.4	5.2	14.9	1,872	2.2	24.3	12.1	34.9	4,369	5.2
	Total	**111.8**	**23.9**	**73.6**	**16,451**	**9.7**	**168.6**	**34.1**	**105.2**	**24,547**	**13.7**	**339.1**	**70.0**	**215.9**	**49,561**	**28.3**
Cholpon Ata-Karakol	Passenger car	35.0	2.2	5.9	4,296	0.2	54.7	3.5	9.2	6,718	0.4	124.3	7.9	20.8	15,262	0.8
	Bus	23.2	10.3	33.6	4,358	5.0	33.5	14.9	48.6	6,310	7.3	78.2	34.6	113.4	14,708	17.0
	Truck	14.9	7.4	21.4	2,680	3.2	18.8	9.3	26.9	3,376	4.0	46.1	22.9	66.1	8,286	9.8
	Total	**73.1**	**19.9**	**60.8**	**11,334**	**8.4**	**107.0**	**27.7**	**84.8**	**16,403**	**11.6**	**248.6**	**65.4**	**200.3**	**38,256**	**27.6**
Issyk-Kul Ring Road South	Passenger car	24.0	1.5	4.0	2,952	0.2	55.0	3.5	9.2	6,752	0.4	104.2	1.0	2.7	1,988	0.1
	Bus	15.8	7.0	22.8	2,962	3.4	30.6	13.6	44.4	5,755	6.6	61.7	27.3	89.4	11,595	13.4
	Truck	10.2	5.1	14.6	1,831	2.2	13.4	6.6	19.2	2,403	2.8	31.8	15.8	45.7	5,721	6.7
	Total	**50.0**	**13.6**	**41.5**	**7,745**	**5.7**	**99.0**	**23.7**	**72.8**	**14,910**	**9.8**	**197.7**	**44.1**	**137.8**	**19,304**	**20.2**
Tup-Kegen	Passenger car	-	-	-	-	-	1.7	0.1	0.3	207	0.0	0.4	0.0	0.1	45	0.0
	Bus	-	-	-	-	-	0.7	0.3	1.0	132	0.2	0.0	0.0	0.0	0	0.0
	Truck						0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.0
	Total	**-**	**-**	**-**	**-**	**-**	**2.4**	**0.4**	**1.3**	**338.57**	**0.2**	**0.4**	**0.0**	**0.1**	**45.44**	**0.0**
Total		**286.5**	**68.8**	**210.4**	**43,112**	**28.4**	**453.6**	**102.0**	**312.9**	**67,360**	**41.8**	**945.3**	**214.0**	**657.8**	**130,464**	**89.8**

Source: JICA Study Team

Judging from the emission estimate from stationary sources and automobiles, it is concluded that the influence of atmospheric pollutants in the Issyk-Kul zone will not be serious under the moderate growth scenario, and the air quality would be maintained in good condition without special traffic restrictions. It should, however, be noted that air quality in Issyk-Kul should be regularly monitored and maintained within the permissible ranges of emission.

The initial environmental examination (IEE) will be made for each major project/program to be proposed for the integrated Issyk-Kul development.

8.2 Legal and Institutional Arrangements for Environmental Management

The legal foundation of environmental impact assessment in the Kyrgyz Republic is provided in Article 16 of the **Law on Environmental Protection** (1999), which requires the exercise of "ecological expertise" to prevent unfavourable environmental impact of economic or other activities prior to their implementation. Details of the objectives, scopes, and procedures of ecological expertise are stipulated in the **Law on Ecological Expertise** (1999). In this law, ecological expertise is defined as "assessment of ecological risk and danger arising from targeted decisions, implementation of which directly or indirectly has an impact on the condition of the environment and natural resources" (Article 1). Ecological expertise comprises two aspects: **state ecological expertise** exercised by the Ministry of Ecology and

Emergency Situations (MoEES) and **public ecological expertise** performed by citizens, public associations and Local Self-Governments (LSGs). In the Kyrgyz Republic, Environmental Impact Assessment (EIA) refers only to the work conducted by project initiators. The rest of the process, where the MoEES and the public are involved, is referred to as performance of ecological expertise. The procedure of environmental impact assessment, as provided in the law and the instructions and as practiced are as follows:

Table 8.6 Procedure of Environmental Impact Assessment

	Step	Legal/regulatory Basis
1.	PI conducts environmental **screening** and determines the necessity of conducting EIA.	Appendix 2 and Appendix 3 of the EIA Instruction lists activities that are subject to EIA and those that are not, respectively. (The two lists are provided in the Appendix.) The activities listed are too broad and PIs in many cases need to consult MoE to determine whether the project requires EIA.
2.	PI sends Notification of Intentions to the LSG. (The LSG receives this Notification as part of the application for a construction permit.)	Section 4 - Stage 1 of the EIA Instruction The Instruction on State Ecological Expertise
3.	LSG forwards Notification to the Oblast Division of MoE, where it is decided whether state ecological expertise is handled at the republican level or at the Oblast level.	The Instruction on State Ecological Expertise provides guidelines for deciding on the level.[1]
4.	PI conducts **scoping** and **EIA**.	EIA must be conducted by an "EIA developer", with a licence granted by the State Committee on Architecture and Construction (SCAC) in accordance with the Law on Licences and the Government Regulation on Separate Types of Activities.[2] Rights and duties of PIs are stipulated in Section V of the Law on Ecological Expertise. EIA is required to cover the points provided in Section 4 - Stage 2 of the EIA Instruction.
5.	PI conducts **public hearings**.	Section 4 - Stage 3 of the EIA Instruction. Also, Section IV of the Law on Ecological Expertise provides basic rights and duties on public ecological expertise.
6.	PI conducts forecasting of environmental and social changes and adds mitigation measures and research as appropriate.	Section 4 - Stage 4 of the EIA Instruction.
7.	PI makes a **statement of ecological consequences (SEC)** as part of **EIA documents**.	Section 4 - Stage 5 and Appendix 5 (list of EIA documents) of the EIA Instruction.

[1] In 2002-2003 there were a total of 455 cases that went through EIA, of which 30% were handled at the republican level and 70% at the Oblast level. In Issyk-kul, a decision was made in May 2004 as part of the Issyk-kul Decentralization Pilot (in accordance with a Presidential Decree of February 2004) that all EIAs are handled at the Oblast, in principle. In reality, however, the Oblast Division does not have sufficient capacity, particularly in human resources, to handle all EIA cases.

[2] Currently there are 20 licensed EIA developers in the Kyrgyz Republic.

	Step	Legal/regulatory Basis
8.	MoE receives EIA documents to perform state ecological expertise.	Section III - Clause 9 of the Law on Ecological Expertise Section III - Clause 12 provides that the state ecological expertise must finish in three months or less. The Instruction on State Ecological Expertise
9.	MoE organizes **Expert Commission**.	Section III - Clause 11 of the Law on Ecological Expertise.[3] The Instruction on State Ecological Expertise
10.	MoE issues a **statement of state ecological expertise**. Positive statement: valid during a period defined by MoE Negative statement → prohibition of the project → PI submits EIA documents for repeated state ecological expertise	Section III - Clause 13 of the Law on Ecological Expertise The Instruction on State Ecological Expertise
11.	PI conducts post-project analysis and control (as a follow-up)	Section 6 of the EIA Instruction

PI: Project Initiator
MoE: Ecology Block of the Ministry of Ecology and Emergency Situations
LSG: Local Self-Government

The existing regime of environmental impact assessment in the Kyrgyz Republic, as summarized above, follows the international standard. There are some areas, however, that require adjustments so as to improve its clarity, transparency and efficiency. The following have been identified by the JICA Study Team and discussed with MoEES officials:

- While holding of public hearings and constitution of the Expert Commission are the requirements in accordance with the existing environmental impact assessment regime, they are done only for large-scale projects and projects that create trans-boundary impacts. This practice is reasonable and should be reflected accordingly in the laws and regulations, by introducing a simplified process of environmental impact assessment. In doing so, the definitions of activities as provided in Appendix 2 (positive list) and Appendix 3 (negative list) of the EIA Instruction need to be detailed and categorized. JICA Study Team has been informed by MoEES that such a simplified system, which will be applied to small- to medium-sized projects, is currently in preparation and is expected to be ready by the end of 2004.
- (Step 4) Section 4 - Stage 2 of the EIA Instruction requires performance of ecological and economic assessment. For the convenience of private investors, it is advisable to provide them with access to the information on the

[3] MoE maintains a list of around 25 experts from both public and private sectors who will be called upon to serve in the Expert Commission when it is organized.

methodologies of incorporating ecological costs in the calculation of economic and financial internal rates of return.

- (Step 5) Section II - Clause 8 and Section IV - Clause 14 of the Law on Ecological Expertise with regard to the roles of "local administrations and local councils" need re-writing to reflect the new roles of LSGs and local state administration bodies.
- (Step 8) Section III - Clause 9 of the Law on Ecological Expertise requires a PI to submit, together with EIA documents, "statements and/or permissions from correspondent authorized state inspection organizations and local administrations." This provision refers to the permissions required from concerned state bodies for construction approval and should be accompanied with relevant, specific references. Also, the last paragraph of the same clause needs to be deleted as "prepayment" by a PI for state ecological expertise is no longer required.
- In regard to the construction approval, the environmental impact assessment regime needs harmonization with the new Government Regulation on the Procedure for Realization of Investment and Construction Intentions (February 2004), which provides a streamlined procedure for investors to apply for and receive construction permits. Under this Regulation, a local body of State Committee on Architecture and Construction (SCAC) serves as a "one stop shop," accepts an application, exercises state construction expertise, coordinates with relevant government bodies as necessary, and issues a permit after a review by a to-be-instituted Urban Development Council. In order for this Regulation to become fully enforceable, the involvement of other state bodies including MoEES needs to be taken account and properly reflected in the procedure. (See also the investment promotion part of the Sector Report F.)
- The Law on Ecological Expertise, the Instruction on State Ecological Expertise, and the EIA Instruction may be merged so that PIs, MoE officials and other stakeholders can refer to only one legal document. The merged document may be adopted as a law so as to give more importance particularly to the steps and requirements described in the EIA Instruction. MoEES does not have a plan for such a merger at present but wishes to receive support to create and publish a brochure detailing the procedure and requirements for environmental impact assessment for the convenience of investors.
- Section 7 of the EIA Instruction (application of EIA methods to policy, plans and programs) can be treated as a separate law or, if maintained as it is, "Strategic Environmental Assessment (SEA)" may be used instead of EIA in order to differentiate between EIA requirements for projects and requirements for assessing impacts of policies, plans and programs.

The current administration of environmental protection is split into two main bodies: the Ecology Block of the MoEES (hereinafter "the MoEES-Ecology Block") and the State Forestry Service under the Presidential Administration. The MoEES-Ecology Block is responsible for regulating industrial activities, while the State Forestry Service carries out administration of forests and specially protected natural areas. The Biosphere Territory Administration, which has an important operation in Issyk-kul, is under the State Forestry Service. The two bodies were together until 2001, when the functions of the State Forestry Services were transferred to the Presidential Administration. The mandates and organizational structure of these two agencies are reviewed below.

The MoEES-Ecology Block

The basic goals and objectives of the MoEES-Ecology Block, as provided in the Government Regulation (2001), are elaboration and implementation of unified policies in the spheres of hydrometeorology, environmental conservation and nature management. The organizational structure of the Ecology Block in the central government as well as Oblast and Rayon is shown in the following table.

Table 8.7 Organizational Structure of the MoEES-Ecology Block

Central Government (in Bishkek & Osh)	Dept. of Ecology and Nature Management (DENM) • Division of Ecology Strategy & Policy • Division of Ecology Monitoring • Division of Nature Management Organization • Division of State Inspectorate Agency (DSIA) • Division of Ecology and Ecological Expertise Gydromet – surface water Republican Fund
Oblast (in Cholpon Ata)	Oblast Division of Environmental Protection Head Experts : Land Resources & Ecological Expertise : Water : Atmosphere : Nature Management & Duties (calculation) • Ecological Information Management Dept. (Jan. 04-) → *Information Centre* Gydromet Issyk-kul Fund for Environment Protection (7 staff incl. Director) (Cholpon-Ata)
Rayon (Karakol and 5 Rayons)	Karakol City: 2 Inspectors + Group for Monitoring: 3 laboratory analysts (water, land and atmosphere) Tong: Chief Inspector (Balykchy) + 2 Inspectors Issyk-kul: Chief Inspector (Cholpon-Ata) + 2 Inspectors Tup: 2 Inspectors Ak-Suu: 2 Inspectors Jeti-Oguz: 2 Inspectors

Source: MoEES

The State Forestry Service

The State Forestry Service is responsible for ensuring ecological safety, conservation of biodiversity, protection and development of the national forestry, management of specially protected natural territories, and ensuring sustainable hunting activities. Their organizational structure in the central government as well as in Oblast and Rayon is shown in the following table.

Table 8.8 Organizational Structure of the State Forestry Service

Central Government (under the Presidential Administration)	• Dept. of Forestry Resources & Forest Cultivation • Dept. of Legal Activity, State Control & Protection of Forest • Dept. of Monitoring & Int'l Cooperation • Section of Specially Protected Natural Territories & Biodiversity Protection Biosphere Territory Administration
Oblast (in Cholpon Ata, Balykchy, and Karakol)	Biosphere Territory Issyk-kul Branch (15-20 staff) • General Directorate (Balykchy) • GIS System (Cholpon Ata) → *Information Centre (Cholopon-Ata)* Oblast Service of Control & Protection of Flora and Fauna (Cholpon-Ata) (15-20 staff) Oblast Division of Regulation of Hunting Resources (Cholpon-Ata) (10-15 staff) Karakol National Nature Park (Karakol) (15-20 staff)
Rayon (Karakol, Balykchy, and 5 Rayons)	Forest Entities (Total 180-200 staff engaged in forest protection and felling)

Source: State Forestry Service

Sustainable operation of the environmental management plan (EMP) requires sustainable financing. The existing monitoring tasks of the MoEES have not been fully implemented in recent years due to budget shortages. JST proposes to utilize the existing funding arrangement in Issyk-kul, the Issyk-kul Fund for Environmental Protection, to the full extent to achieve the objectives of the EMP.

The Issyk-kul Fund for Environmental Protection is part of the funding arrangement established by a Presidential Decree for the purpose of environmental protection. The Presidential Decree created both the Republican Fund for Environmental Protection (hereinafter "the Republican Fund") maintained at the republican level and the Local Fund for Environmental Protection maintained at the level of each Oblast, both placed under the control of the MoEES. The Issyk-kul Fund for Environmental Protection

(hereinafter "the Fund") is the name for the Local Fund in Issyk-kul Oblast.[4] Fees collected for emission and discharge of pollutants by economic entities, fines for violating the standards, and voluntary donations are main sources of the Fund. The Fund is required to contribute 25% of its collections to the Republican Fund each year. The sources and expenditures of the Fund in recent years are presented in the following table.

Table 8.9 Sources and Expenditures of Issyk-kul Fund for Environmental Protection

(Unit: thousand soms)

	Collection	Sources			Expenditures		
		Eco-posts (1)	Nature use fees (2)	Fines (for violations)	Planned	Actual	Actual/ Collection
2001	3,920	223	2,706	992	960	615	15.7%
2002	2,860	224	1,993	840	1,040	475	16.6%
2003	4,930 (3)	81	1,498	835	1,900	2,100	42.6%

Note: 1) Collection from vehicles for the use of air at Balykchy, the border with Naryn and the border with Kazakhstan. Until recently these three eco-posts were operated jointly by the MoEES and the Biosphere Territory Administration. The MoEES decided to close down all the eco-posts in the country in June 2004 and as a result the eco-posts cease to be a source of the Fund from 2004. (The three eco-posts in Issyk-kul are now under the sole administration of the Biosphere Territory Administration.)

2) Collection from physical entities for discharge, placement of solid waste, exceeding permissible levels, etc. The payment schedule of the nature use fees is based on the methodologies prepared by MoEES in 1999.

3) Payments by Kumtor, whose exemption arrangement expired at the end of 2002, for the amount of 2,308 contributed to this increase.

Source: Issyk-kul Fund for Environmental Protection and MoEES

The Fund is currently treated as a non-budgetary fund and is not part of the Oblast budget, although the Oblast and Ministry of Finance receive reports on its budget and expenditure. The Fund expects to collect approximately 4 million soms for 2004 and after the contribution to the Republican Fund will retain about 3 million soms to be used in Issyk-kul. This is not an insignificant amount in light of the fact that the total amount of special means in the Oblast for the same year will be 17 million soms. The JICA Study Team has proposed, and MoEES officials have agreed, to use the Fund in accordance with the priorities identified in the EMP. At the same time, against the background of the need to enhance the quality and transparency of the overall budget formulation and expenditure in the country, it is recommended that proposed annual uses of the Fund be presented and discussed with the public before their finalization.

The need to consolidate the budget system in the country may require the Fund to be transformed into a budgetary arrangement in the near future. Should it take place, it is advisable to create a mechanism so that the revenue generated in Issyk-Kul (which will be raised from tax collection on various uses of nature) will be used for the purposes of

[4] As part of the Decentralization Pilot of the Issyk-kul Oblast (see Sector Paper A), this re-naming was done in May 2004. While the original intention was to bring the management of the Fund under the direct supervision of the Oblast administration, the Fund is managed by the Oblast Division of MoEES under the supervision of the MoEES headquarters, as of today.

environment protection in Issyk-Kul. An experience of transparent and accountable management of the Fund will pave the way for such fiscal decentralization.

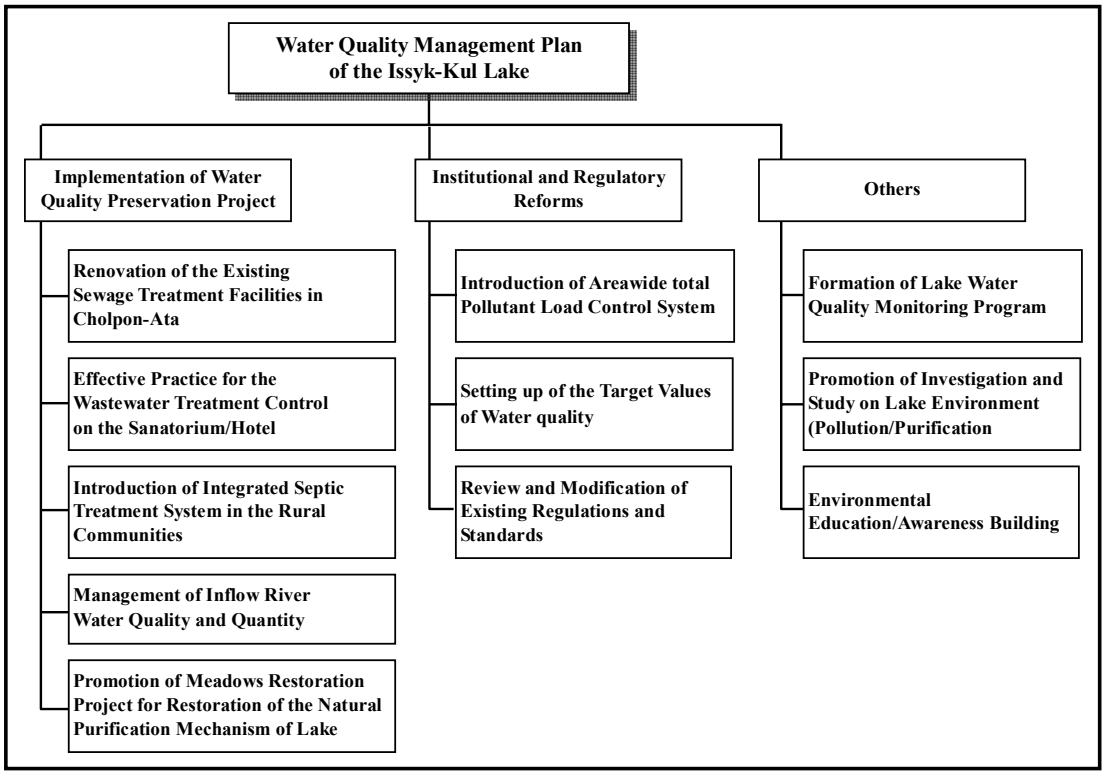
8.3 Environmental Management Plan

At present, the Issyk-Kul Lake maintains good water quality conditions together with the surrounding environment, mountains and rivers. The values of BoD_5, total nitrogen (T-N) and total phosphorous (T-P), which show the degree of eutrophication in the Lake, were 0.61 mg/l, 0.15 mg/l and 0.001 mg/l, respectively as of 2002. In order to maintain the present condition of water, a proper water quality management plan it is be formulated. The water quality management plan will serve to maintain the good water quality of the Issyk-Kul Lake, and sustain its present ecosystem. To this end, the environmental management plan is formulated taking into account the following concepts:

- While it is easy to contaminate lake water, it is very difficult to recover the water quality once it has been polluted. Therefore, the policy should focus on maintaining the lake water quality as observed under present conditions. Namely, as for the conservation of the lake ecosystem, “Prevention is better than cure”.
- At present, water use of the Issyk-Kul Lake is limited only to recreational and fishery use. The polluted waters, such as sewage water and industrial wastewaters, are prohibited by regulations to be discharged directly into the lake. These should be kept in the future for the sustainable conservation of the lake environment.
- The lake water deterioration is caused by various sources, and focusing on just one source of deterioration does not necessarily contribute effectively to the overall maintenance of the lake water quality. Therefore, the policies for maintenance of water quality should encourage cooperation among the related organizations and people.
- The environmental management plan of the Issyk-Kul zone should be implemented and managed by the local government in collaboration with the concerned organizations such as the Ministry of Ecology and Emergency Situations, the Academy of Science, etc.

The environmental management plan is to be executed with the objectives of: (i) preventing deterioration of water quality of the Issyk-Kul Lake, and (ii) realizing a “Healthy and Harmonized Region of Issyk-Kul”, particularly around the lake. The executive organization is the Oblast division of environmental protection and local

government. The environmental management plan consists of the programs as illustrated in the following figure.



Source: JICA Study Team

Figure 8.2 Scope of Environmental Management Plan

(1) Water Quality Preservation:

(i) Renovation and/or installation of sewage system in urban area:
The existing sewage systems in Balykchy, Cholpon Ata and Karakol should be renovated and expanded. Treated water should not be discharged directly to the Lake.

(ii) Improvement of wastewater treatment at sanatoriums and hotels:
Sanatoriums, hotels and other establishments (more than 120 at present) are equipped with wastewater treatment facilities, but they are old and not functioning appropriately. Their treatment facilities should be monitored and, if required, renovated to maintain the required quality of treated wastewater.

(iii) Small-scale wastewater facilities for rural communities:
Rural communities and low-density population villages around the Lake are pollutant generators, and integrated septic tank treatment systems are to be developed.

(iv) Management of river water quality:

The pollutants from rivers account for 29% of BOD, 24% of T-N and 22% of T-P of the Lake, and proper management of inflow rivers is required. Point pollutant sources should be properly managed.

(v) Recovery of self-cleaning system by aquatic vegetation:
Since the Lake shore has a function of self-cleaning, particularly in transition zones, the lake ecosystem should be further studied for conservation, inclusive of cultivation of reed colonies.

(2) Institutional and Regulatory Reforms:

(i) Introduction of area-wide total pollutant load control system:
Since the current effluent standards are applied source-by-source, an area-wide total pollution load control system should be applied for the Lake water quality control. For instance, the total annual volume of pollutants from rivers should be restricted to within the volumes as specified below:

Table 8.10 Targets of Permissible Annual Pollutant from Rivers

(Unit: ton/year)

Year	2005	2010
BOD_5	4,900	5,200
T-N	3,700	3,900
T-P	43	45

Source: JICA Study Team

Note: Permissible pollutant load for individual factories is separately calculated using the following formula:

$L = C \times Q \times 10^{-3}$

Where: L: Permissible pollutant load by sector and by kind of pollutant (kg/day)
C: Permissible concentration defined by sector and by kind of pollutant (mg/l)
Q: Volume of wastewater discharged (m^3/day)

(ii) Setting-up of targets in permissible volume of BOD, T-N and T-P:
The total volume of BOD, T-N and T-P should be controlled within the target to be specified. For instance, the Lake water quality should be controlled under the permissible volumes as follows:

Table 8.11 Target of Permissible Pollutant in Issyk-Kul Lake

Item		Average Value (Whole lake)	
		Present value (2001)	Target value (2010)
BOD_5	Average	0.61	1.0
	75% value	0.85	-
T-N	Average	0.15	0.2
	75% value	0.18	-
T-P	Average	0.001	0.005
	75% value	0.000	-

Source: JICA Study Team

(iii) Review and modification of existing regulations and standards:
As noted in Section 7.6, there are several points to be reviewed and revised in the existing environmental regulations and standards.

(3) Other Environmental Management Programs

(i) Formulation of monitoring of lake inner-water and river inflows:
The water monitoring program, now suspended, should be revived and implemented periodically, including water quality monitoring, water quantity monitoring, biological monitoring and environmental monitoring.

(ii) Promotion of investigation and study on the lake environment

(iii) Environmental education and awareness building

8.4 Proposed Projects/Programs for Environment Management

For integrated development of the Issyk-Kul zone, several projects and/or programs for promotion of the environmental management have been formulated through this study. These projects/programs will include the following:

Table 8.12 List of Proposed Projects for Environmental Management

Sector/Subjects	Program/Project	Schedule		
		2005	-2010	-2025
A. Environmental Preservation				
Application of Strict environmental control	1) Formulation and Implementation of Environmental Management Plan for Sustainable Conservation of Ecosystem of Lake Issyk-Kul			
	2) Reinforcement of laws and institutional systems on the environment of the Lake Issyk-Kul			
	3) Environment education/awareness building			
	4) Establishment of Data Management System for Sustainability of Water Environment Using GIS			
	5) Restoration of water purification function in lake transition zone			
	6) Project for the management of water level change			

It should be noted that the above list will not necessarily indicate all projects/programs to be implemented for environmental management. The projects under planning by the respective organization in charge should also be implemented as envisaged. It is also added to note that the environmental management plan would study the possibility of

applying the CDM mechanism under the Kyoto Protocol and obtain some funds for implementation of the environmental protection programs in the Issyk-Kul zone.

CHAPTER 9

SOCIAL AND COMMUNITY DEVELOPMENT

9.1 Issues to be Addressed

An overview of the current social environment in the Issyk-Kul zone, as well as the demographic and settlement situations, has been presented in Sections 3.3 and 3.4. As pointed out in the overview, the Issyk-Kul society still has various constraints in social development, and the social services are said to be at lower standards when compared to the situation before independence.

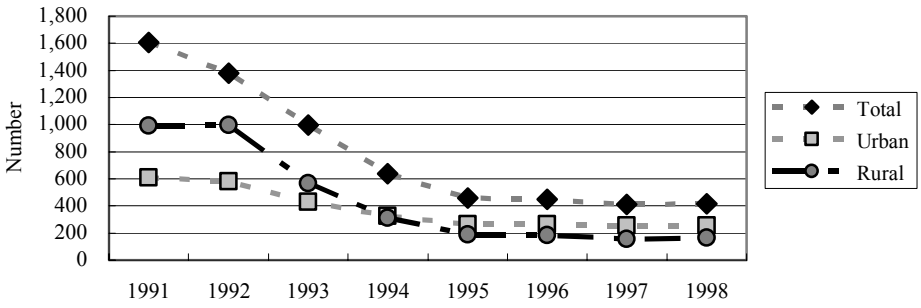
Major constraints in social development of the Issyk-Kul zone are summarized as follows:

Constraints in the Educational Sector

(i) While the number of pupils per school and per teacher in Issyk-Kul is generally in line with the national average for primary education, the enrollment ratio has decreased and drop-out ratio has increased. The enrollment ratio for secondary education has demonstrated more substantial decreases, from 65% in 1989 to 50% in 2002 (national average).

(ii) The reduced enrolment ratio is partly attributable to the substantial requirements for payments of school repair charges, fees to subsidize teachers' salaries, and costs of text books and other materials, as a result of the government budgetary reduction in the education sector (7.6% of GDP in 1990 reducing to 4.5% in 2002). According to the UNDP study on "Macroeconomics of Poverty Reduction, 2002, unofficial payments in urban public schools would amount to $3 to $20 per month. 24% of respondents to the social survey conducted by the JICA Study Team have expressed their concern about education of their children

(iii) Pre-school education is another constraint for the Issyk-Kul people, particularly in the rural area. The number of pre-schools has decreased in line with the national decrease in pre-school institutions. Although the historical trend in Issyk-Kul is unavailable, the national statistics show a sharp decrease in pre-school education facilities, as illustrated in the following.



Source: Ministry of Education

Figure 9.1 Number of Pre-school Institutions

(iv) Unemployment rate is relatively high in Issyk-Kul (9.3% in 2002). For graduates from schools, and even higher education faculties, it is usually difficult to find employment in the region.

(v) Vocational training is insufficient in Issyk-Kul, as is also the case in the Republic as a whole. Education in entrepreneurship is much desired at universities and higher education faculties, at both basic and professional levels. Most teaching staff remain inexperienced in business under the market economy.

Constraints in the Public Health Sector

(i) With a decrease in public expenditure in the health sector (from 3.7% of GDP in 1990 to 2.9% in 2002), the healthcare and medical systems have been degraded. For instance, the number of doctors and beds is still on the decrease in Issyk-Kul and the Republic as a whole, and medical facilities have become obsolete in many centres.

(ii) Drug abuse by adolescents and alcoholism has been increasing. Mental health is a concern to increasing numbers of Issyk-Kul people. More than half of the respondents (57%) in the social survey by the JICA Study Team pointed out that health care and mental care are the major concerns.

(iii) Sanatoriums are mainly for foreign and outside visitors. Maintenance of facilities in sanatoriums is degraded, and reduced services are provided to the local people.

In the public health and education sectors, external assistance has been extended and a number of villages in Issyk-Kul have benefited. Examples of external assistance are outlined below:

(i) Health reform project, called “MANAS” was implemented in 1996 with support of the World Bank, USAID, Swiss Development Corporation, and other donor agencies. MANAS has focused on restructuring of hospitals and sanitary

epidemiological services (SES) to strengthen primary healthcare and replace polyclinics with a network of family physicians at the primary level.

(ii) UNDP has supported the poverty reduction program since 1998, including policy advice, social mobilization, micro-finance, and small-scale business development, with a target of 142 focal villages. In Issyk-Kul, 19 villages in Ak-Suu, Jeti-Oguz, and Ton rayons have been focused.

(iii) UNDP also supported the local self-governance program since 1998, covering programs for decentralization, institutional capacity building, participatory planning, and LSG village infrastructure improvement. In Issyk-Kul, 36 villages in Tup rayon are covered. During 2001-2003, six villages in two Aiyl Okmuto in Tup have been implemented as a model. Village infrastructure will cover public baths, schools, water supply, barbershops, etc.

(iv) The World Bank is supporting the village investment project with a budget of US$15.1 million in five years (2004-08). It covers the improvement in local governance, small-scale group enterprise development, and provision of essential infrastructure services. In Issyk-Kul, 38 Aiyl Okmuto are targeted for this project.

In addition to the social services, it has been found that the social capital has not been well set up in villages and communities. After the shift to the market economy, cooperative works were disorganized and the villagers have remained distrustful of each other. The economic decline for several years after the shift to the market economy has aggravated the social capital and the spirit for collaborative works. Division of labor is hardly likely.

Such an unfavorable phenomenon is particularly serious among the younger generations. Although they find some short-term jobs in tourist resorts and other centres during the summer seasons, they mat be unemployed during the remainder of the year. Drug abuse and alcoholism, as well as quarrels and trouble-making among adolescents, has come to be a serious problem, as noted above.

Community centres, constructed during the period of the Soviet regime, has been left in a deteriorated condition due mainly to the lack of maintenance and collaborative works in communities. Gatherings of villagers are seldom held. Youth has taken hardly any initiative in community activities and collaborative works.

Under such circumstances, the discussions between stakeholders and JICA Study Team at the Workshops and rapid rural appraisals have resulted in an agreement that the social development program under the integrated development plan of the Issyk-Kul zone should primarily focus on the following issues.

(i) Strengthening of the social capital is of prime significance. Individual efforts are limited and collaborative works are necessary to re-activate the village community. The first step will be to renovate the community centre and to promote communications among community members.

(ii) Income generation activities should be promoted in a more active manner. The primary constraints in education and healthcare would be mitigated with the new income generation by collective efforts of villagers.

(iii) Since public investment in social infrastructure has decreased, the community should have proper funding for repair and maintenance of village infrastructure. The possibility of creating a Community Fund will be studied.

(iv) Programs for income generation should focus on the seasonal unemployment. It would be desirable if village products are manufactured during the off-tourist season and sold during the summer tourist season.

(v) For income generation, the community should learn how to market their products and services, particularly to tourists and visitors to the Issyk-Kul zone.

(vi) Community-based organization (CBO) will be formed with the support of NGOs experienced in CBO and village development planning. Self-help efforts should be made in improving the social environment and infrastructure.

(vii) The youth should be particularly nourished as they are to shoulder the future community at the village, rayon and oblast levels.

(viii) Despite the emphasis on community empowerment, vocational training should be improved not only from the viewpoint of educational development but also from the viewpoint of community development. This is particularly the case for youth, tourism and other industrial development.

9.2 Pilot Operation of Community Empowerment Programs

To formulate a practical program for social and community development through community empowerment and by addressing the major issues as highlighted in the foregoing Section, the JICA Study Team has assisted in the operation of two pilot community development projects. It should be noted that these pilot projects are to be combined with another pilot project for a village nursery conducted separately for diversification of agricultural activities and promotion of reforestation in the Issyk-Kul zone, as introduced in the following Chapter.

An outline of the pilot operations and preliminary evaluation after six months operation are described below.

(1) Pilot Villages for Community Empowerment

Two pilot village community programs operate to address the major issues identified in the Issyk-Kul zone through the Workshops. In particular, the programs have the objectives to promote: (i) community-based improvement in living conditions, (ii) income generation activities through collaborative works, and (iii) nourishment of the youth that shoulder the future community development.

The pilot sites were selected in late June 2004 in accordance with the following procedures:

(i) two villages are located in Issyk-Kul rayon as tourism development would be focused in and around this rayon

(ii) One is to be located along the road section between Balykchy and Cholpon Ata, where more tourist traffic and income generation activities targeted towards tourists are expected

(iii) The other village will be selected along the road section between Cholpon Ata and Tup, to compare the effectiveness of the income generation activities

(iv) Villagers should have strong motivation and willingness to restore their communities, by repairing their community centres and forming community-based organizations

The two selected villages are:

(i) Ornok village in Chong-Sary-Oy Aiyl Okmuto:
(with about 300 families and a population of about 1,030)

(ii) Oruktu-Hutor village in Oruktu Aiyl Okmuto
(with about 120 families and a population of about 660)

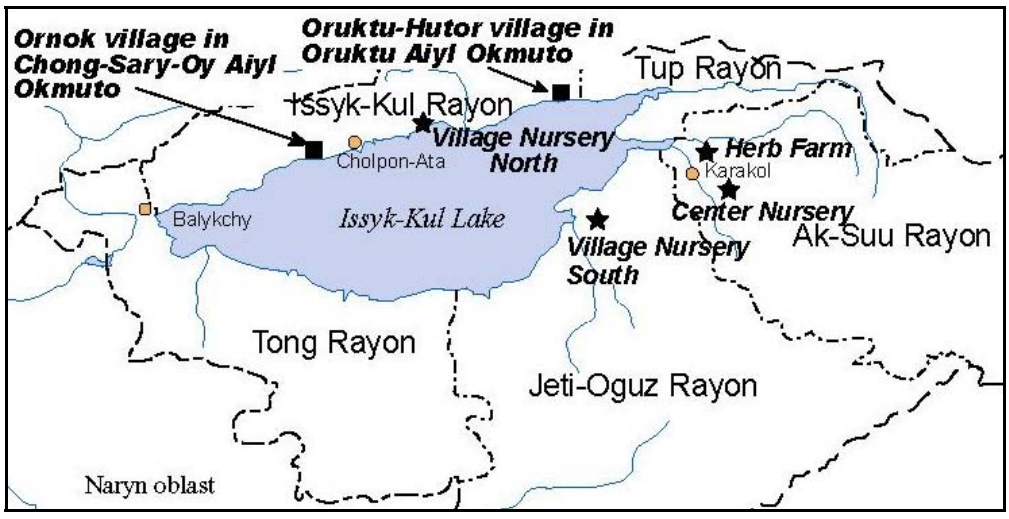


Figure 9.2 Location of Pilot Program Operation

(2) Program Outline

Immediately after the selection of the two pilot communities, a baseline survey was conducted by the NGO retained by the JICA Study Team. At the same time, the NGO assisted the villagers in formulating a community development plan by forming a community-based organization.

Photo 9.1 Workshop for Formulation of Community-based Plan

Photo 9.2 PCM moderator facilitated formation of Community-based Organization

Since the community development plan is guided to include the rehabilitation of the community centre, the repair works were initiated soon after the selection of the pilot sites. In the repair works, the community members participated by offering their labor free of charge. The members who were unable to participate in the repair works contributed either in cash or offering lunch services to member workers. The construction works of the community centre took about two months.

Photo 9.3 Villagers joined Repair Works

Photo 9.4 Community Center after Repair

Under the community development plan, villagers were challenged to set up a Yulta shop beside the community centre in order to sell their village products to tourists and visitors. The NGO arranged a trainer in the cottage industry to conduct training for women in handicrafts (e.g. felt products) and packaging of village products (e.g. jam),

as well as for pricing in marketing. Herbs, honey and other products produced at the other pilot project (village nursery) have also been sold at the Yulta shop.

Photo 9.5 Yulta Shop for Marketing Village Products

Photo 9.6 Training for Handicraft

Together with the repair works of the community centre, tables, chairs and other facilities for meetings/gatherings have been procured (some having been prepared by villagers themselves). Likewise, a toilet service building has been constructed mainly to serve for tourists and visitors.

Photo 9.7 Toilet Facility beside Yulta Shop

Photo 9.8 Inside the Toilet

For the construction works and procurement of materials of the community-planned program (i.e. repair and installation of the community centre, toilet facility, Yulta shop), as well as the services provided by the NGO and trainers, costs of around US$30,000 have been incurred. Villagers have contributed the labour works and services free of charge.

Operations of the two pilot programs have been executed generally in line with the following schedule.

Items	2004					
	June	July	August	September	October	November
1. Selection of communities						
2. Baseline Survey						
3. Formation of community based plan						
4. Constructor of community center						
5. Implementation of community activation program						

Figure 9.3 Implementation of Two Pilot Community Centres

(3) Preliminary Evaluation

The construction of the community centre and Yulta shop was completed towards the end of August 2004. As the tourist season was about to end, the activities of the Yulta shop were relatively limited. As of the beginning of November 2004, a preliminary evaluation of the operation of the pilot community empowerment project has been based on the following:

Villagers' Meeting

Before the operation of the pilot project, villagers had their meeting/gathering once or twice a year. During the pilot project operation period of about 4 months, around 20 meetings of villagers were held in each pilot site, as tabulated in Table 9.1. The villagers collectively discussed community activities and the level of cooperation has been substantially enhanced, although there were some disputes in the initial stages.

Table 9.1 Meetings Held at Pilot Villages (July-October 2004)

	Ornok Village		Orkutu Hotur Village	
	(times)	(persons)	(times)	(persons)
- General meeting	2	142	3	105
- Community centre repair work plan	2	86	1	92
- Yulta business plan	4	66	3	43
- Community development fund	3	95	2	66
- Accountant	2	71	2	92
- Repair work management and supervision	2	36	2	13
- Community needs assessment	1	72	1	31
- Joint monitoring and evaluation	3	120	3	14
- Joint elaboration on drafting regulatory documents	3		2	
Total	22	142	19	105
Before project (per year)	1	80	2	60

Rehabilitation and Operation of Community Centre

The community centre was repaired through the contribution of labour by villagers under the supervision of the NGO-retained construction engineer. Villagers that were

unable to join the repair works contributed some cash and women also served meals. The procurement of construction materials and facilities, particularly those imported, has proved to be relatively costly, as there were serious limitations in obtaining local products.

After completion of the rehabilitation centre, it has been used for various village activities, as shown on the following table. The impacts on the formation and enhancement of the social capital in the community have proved to be substantial.

Table 9.2 Utilization of Repaired Community Centre (August-October 2004)

	Ornok Village		Orkutu Hotur Village	
	(times)	(persons)	(times)	(persons)
- Meeting	16	142	11	100
- Training	3	72	2	60
- Discotheque	8	80	6	112
- Concert	3	216	1	200
- Holiday event	3	350	2	250
- Elections			1	350
Total	33	750	23	560

Training in Handicraft and Marketing

Training in handicraft has been conducted by the NGO-recruited expert, mainly for designing, dyeing, and manufacturing of felt products from sheep wool produced in the village. Training in packaging, bottling and labelling (Russian and English) for local products (e.g. herbs, dry fruit, honey, jam, and milk products) has also been extended to villagers. In fact, it was the first time for villagers to confront visiting buyers/customers and obtaining practical experience in marketing of their products. Training conducted by the beginning of November 2004 is shown on the following table.

Table 9.3 Training Conducted for Community Empowerment (August-October 2004)

	Ornok Village		Orkutu Hotur Village	
	(days)	(persons)	(days)	(persons)
- Yulta business	4	18	4	2
- Agriculture			2	18
- PCA	3	22	3	25
- English for tourists	5	36	5	28
- Service for tourists	1	6	1	8
- Youth leadership	2	30	2	18
Total	15	112	17	99

Operation of the Yulta Shop with Toilet

Although the Yulta shop was completed towards the end of the tourist season, the shop had fairly good sales of its products. The revenue from the sales at the Yulta shop and the newly constructed toilet facility is tabulated in the following.

Table 9.4 Revenues from Sales at Yulta Shop (August-October 2004)

	Ornok Village	Orkutu Hotur Village
1. Sales (som)		
- Sales Amount	11,750	11,460
- Material Cost	1,650	1,460
- Salary	2,000	2,500
- Profit	8,100	7,500
2. Number of Tourists (person)		
- to visit	182	115
- to buy herb	21	17
- to buy souvenir	83	25
- to buy local product	52	43

Table 9.5 Users and Revenue from Toilet (August-October 2004)

	Ornok Village	Orkutu Hotur Village
Number of Users (Person)	100	5
Income (som)	300	15
Expense (som)	78	0
Profit (som)	222	15

Direct contacts with customers have great impacts on villagers and communities. They come to understand the customers' choice and preference in local products. Such impacts are noticeable in the fact that the youth have started to learn the English language as they are willing to sell their products to foreign tourists (as noted in Table 9.3 above, five courses in the English language have been held at each pilot site).

Furthermore, the community leaders have contracted with tourist agencies and bus service companies to offer services at the Yulta shop in the next tourist season, where stops for rest would be made and tourists/travellers would obtain services at the Yulta shop.

Youth Activities

Special attention has been paid to the youth as their social and economic activities are limited and their abuse of drugs and alcohol has raised serious concerns. The youth, after being released from the tourism-related and agricultural works in September 2004, have been engaged in training for collective social activities. Some joined the English language course. A debate club was formed in October, and they are discussing various topics. Likewise, a disco group was formed for weekly practice.

Creation of Community Fund

At the workshop of community development planning, the villagers agreed that the income from operation of the Yulta shop and other facilities would be reserved as a Community Fund at each pilot village on a provisional trial basis. The incomes have accumulated as tabulated in Table 9.6. It should be noted that the products sold at the Yulta shop have been contributed by the participants in the Yulta program free of charge, and utilization of the Community Fund for improvement in village infrastructure and facilities has not yet been decided by the participants. (For reference, a budget allocated by the rayon administration for the improvement of the school building at Ornok village in 2003 was 30,000 soms. No other budget was earmarked by the oblast, rayon and Aiyl Okumut administrations.)

Table 9.6 Amount of Income Reserved for Community Fund
(August-October 2004)

(som)

	Ornok village	Orkutu Hotur Village
Income from Yulta shop	8,100	7,500
Income from community centre rental	950	525
Income from toilet	222	15
Others (donation)	11,000	0
Total	20,272	8,040

Although it is premature to evaluate the pilot operation of the community empowerment program, the following are provisionally concluded:

(i) Villagers have been substantially motivated by the pilot program. Collaborative works have been initiated voluntarily through the workshops and meetings. Participation and collaboration among the youth and women have been particularly noticeable.

(ii) The participatory approach is found to be effective in social and community development. Although there have been some disputes in discussing the programs at the initial stage, an amicable atmosphere has been created, along the lines of the proverb “after rain comes fair weather”. The social capital would be consolidated through collaborative works for mutual and group interest.

(iii) Involvement of NGOs is important as a facilitator for social and community development. Although villagers have come to freely discuss their common issues, they are not yet accustomed to the social and community works of mutual interest. NGOs would be a catalyst in consolidating the democratic and cooperative frameworks in communities.

(iv) Linkages with other communities and business activities have been cultivated through direct contacts with customers and markets. It is encouraging that the pilot communities are initiating negotiations with hotels and sanatoriums for marketing their products. Although the Yulta shop has not yet proven viable, villagers have understood that cooperation and collaboration among them are of great value for social and community development.

(v) Impacts of pilot community empowerment on poverty reduction are to be evaluated after the operation of the next tourist season. The recent operation period for the pilot project has been quite limited and quantitative assessment of the impacts is not possible at this stage.

(vi) Local self-government (LSG) can play a significant role in social and community development by encouraging villagers in the formation of groups for collaborative works, leasing land and other properties, facilitating procedures to obtain permission, and providing small amounts of finance. LSG should, however, make

efforts to improve the regulations affecting village activities and businesses; these are found to be one of main hindrances in promoting community development programs. Improvement and consolidation of "local governance" has proved to be of prime importance. Dependence on NGOs and donors should be gradually shifted to collaboration with LSGs.

(vii) Although the operations of pilot programs in community empowerment are be further monitored, it is safe to conclude that the community empowerment programs should be disseminated to an increased numbers of villages and communities. The learning-by-doing approach has proved to be effective. Experiences accumulated therein should be shared widely for promotion of "cooperation and competition" in the Issyk-Kul communities.

9.3 Social and Community Development Plan

Social infrastructure and services in the Issyk-Kul zone have significant room for improvement, as highlighted in this study. Educational facilities and healthcare services have been degraded, when compared to levels of service provided during the Soviet administration. Such degradation is primarily attributable to the reduced resource allocation to social development at the central government level. It is hoped that the central government would recognize the actual situation of social services, particularly in rural areas, and set up a policy to allocate more resources to the social development sector.

Understandably, the central government currently faces a difficult financial position with the accumulated debt, and it is beyond the scope of this study to argue the appropriate resource allocation at the national level. However, it might be reasonable to insist that the oblast administration take the actual situation into account and allocate as many resources as possible to the social development sector under the policy for decentralization of public administration, particularly as the Issyk-Kul Oblast is designated as a model oblast for its promotion. If the financial constraints are resolved for the maintenance and improvement of existing facilities, social infrastructure and services at the village level would be enhanced with little technical problems.

While expecting more resource allocation from the central and oblast administrations in the social and community development sector, a self-help approach should be initiated to formulate a more realistic plan for integrated development of the Issyk-Kul zone. In this context, it is proposed that a variety of community empowerment programs be formulated and implemented by community members themselves in the Issyk-Kul zone. Consequently, the focus of this master plan will be placed primarily on the empowerment of communities and their linkages with tourism and other economic

development in Issyk-Kul. Several programs are to be integrated for community development as outlined below:

(i) Community empowerment by referring to the pilot program introduced in the foregoing section, as well as the pilot program of a village nursery as discussed in Chapter 10. Experience accumulated by other community development projects will also be referred to.
(ii) Development of marketing system for community products
(iii) Creation of a Community Fund at the village/community level
(iv) Networking of communities in promoting social and community development
(v) Deregulation and public support in promotion of community-based development (enhancement of local governance)

(1) Community Empowerment

Communities in the Issyk-Kul zone should be empowered for self-help, as well as for consolidation of their social capital. To this end, mutual trust and collaborative works should be promoted through community empowerment. The pilot program for community empowerment has disclosed that villagers are rather isolated and the individual effort to break through the poverty level is substantial.

Community empowerment should start with the formation of a community-based organization (CBO) with a definite target for the interest of the community and community members. Without the definite target set for the empowerment, the empowerment programs would turn out to be less sustainable. In the case of pilot programs at Ornok and Oruktu-Hutor villages, they formed their CBO and set several targets for collective works (e.g. rehabilitation and utilization of a community centre, operation of a Yulta shop, and creation of a community fund) for the betterment of their living in villages. The pilot operations have also verified that the learning-by-doing approach is effective.

Rehabilitation of the village community centres is also found to be effective in promoting the collaborative works, empowerment of villagers and consolidation of the social capital in communities. The impacts of the community centre are significant on villagers and their communities. It is desirable that such community centres would be rehabilitated in a greater number of villages initiating the community empowerment programs. It is noted, however, that this rehabilitation is not a prerequisite for community empowerment. It is in fact costly as local products and materials for rehabilitation are limited and imported products and facilities are expensive.

It is rather difficult for most communities to initiate the community development programs by themselves with a lack of social capital and initial funding. NGOs should be mobilized at least at the initial stage of the community empowerment programs.

Fortunately, there are more than 300 NGOs in the Issyk-Kul Oblast, and many have been accumulating their experience in community empowerment.

Community empowerment is to be promoted by means of learning-by-doing. Facilitated by NGOs, the CBOs in respective villages will formulate their community development plans by themselves and set a common target for their activities. The Yulta shop program, conceived and implemented at Ornok and Orutu-Hutor pilot villages, is an example of a common target set up under their community development plan. With the limited resources made available, it might be possible that the Oblast Administration will call for a competition among communities in adopting the community empowerment programs. The communities, in this case, are invited to formulated their CBOs and Community Development Plans (CDPs) with the support of NGOs, and the Oblast Administration would select the most attractive and sustainable CDPs by forming a selection committee. LSG should also be encouraged to join in facilitating the formulation of CDPs.

CDPs are better formulated with a program for promotion of small business through collaborative works, as in the case of the Yulta shop under the pilot program. In this context, it is desirable that incubators are encouraged through production and processing of niche products by utilizing indigenous resources. Agro-based incubators, like cultivation and processing of herbs as experimented with under the other pilot program, would be promising in the Issyk-Kul zone. By encouraging incubators, a new model of agro-based industries would be formulated in Issyk-Kul.

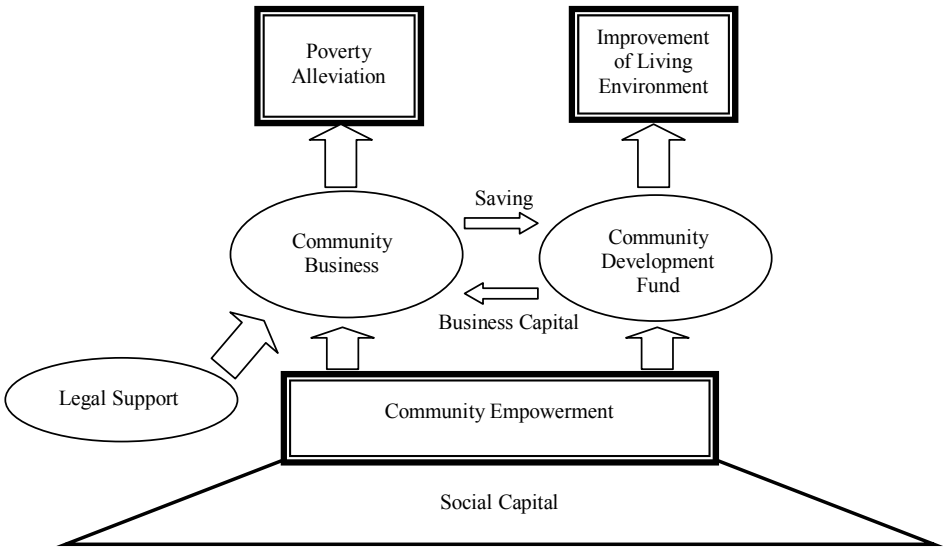


Figure 9.4 Concept of Community Empowerment Programs

(2) Development of Marketing System

The pilot community development program has initiated how to find markets for products, not passively but actively. It included opening the Yulta shop and 'forcing' the

villagers to make contact directly with customers. They are learning how to market their products and through direct contacts with customers, can better appreciate the market requirements and customer preferences. The program also saw the initiation of negotiations with travel agents and bus service companies, villagers asking them to stop at the Yulta shop for rest and shopping. Negotiations are now underway with hotels and sanatoriums to sell their products to tourists and promote linkage between the community and tourism developments. The Yulta shop is considered to be an example of "Michi-no-Eki" or Road Station along the main route of tourism.

Marketing practices should start with gaining knowledge on packaging and labelling of products. Communities will understand that individual work is not as effective and marketing needs collective work and specialization. For instance, a glass bottle for jam and other village products is purchased at a lower price if it is ordered in bulk. A packaging centre will be required if and when the market expands.

Integration with the pilot village nursery program is also underway. Herbs, honey and other local products of specific value should be produced more widely in Issyk-Kul as they would be marketable for visitors and for industrial processing. It should be noted, however, that each community can cultivate such products but marketing should be promoted in a more collective form. It is anticipated that specific enterprises would be established in marketing the community products.

(3) Creation of a Community Fund

A trial to create a community fund at the pilot projects is still underway and it is premature to decide if the fund could be effectively and efficiently operated for the benefit of the community. However, the pilot community has come to understand that the individual effort and saving is not as effective in the enhancement of communities and collective efforts are required to improve social environments. If the incomes from community business are distributed to the individual members or they are collectively utilized for their common interest, it is important that the fund is well managed and used for the betterment of their society.

An idea discussed among stakeholders at the Workshop is to create an "Issyk-Kul Foundation" with funds donated by private enterprises in the Issyk-Kul zone. Some funds have been donated by the Kumtor Gold Company (KGC) to be used for community development. In many Islamic countries, private enterprises are donating some of their profits for social and economic development rather independently. In the event that a number of private investors are operating in tourism and other business in Issyk-Kul, they might be guided into the association of the "Issyk-Kul Foundation", instead of contributing independently, and the Foundation would jointly support community development programs, subsidizing the Community Fund on a matching basis and accelerate the social infrastructure improvement at the village level. It is

recommended that this idea be further studied in line with the promotion of investments in the Issyk-Kul zone.

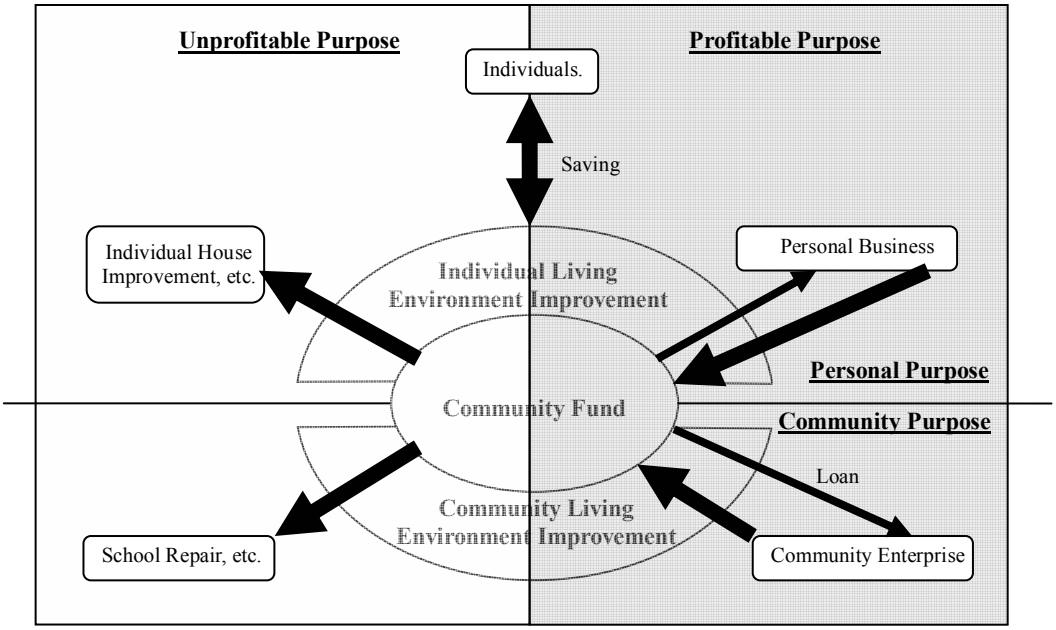


Figure 9.5 Concept of Community Fund Creation

(4) Networking of Communities

In parallel with the community empowerment programs, it is necessary that the respective communities at the village level are integrated into a network in the Issyk-Kul zone. Although villages in Issyk-Kul are set up under 58 administrative Aiyl Okumutto and four SUTs, there is little linkage among communities within Aiyl Okumuto and rayon at present. Donor-assisted community development programs have also been implemented with specific target villages or districts, and have not been integrated into one system for community development in the Issyk-Kul zone.

Networking of NGOs has been developed by themselves with regular meetings held by representatives. One of the leading NGOs in Issyk-Kul is planning to set up a Civil Society Support Centre (CSSC) with the support of USAID. Of 306 NGO groups in Issyk-Kul, around 20 NGOs are well developed with a permanent office and staff and more than three years experience in activities. It is noted, however, that only three NGOs are specialized in community empowerment and social mobilization. Networking of NGOs should be further promoted with special emphasis on community empowerment as it is a basis of social and economic development under the current financial position of the central and oblast administrations.

Preferably, the community empowerment program would be networked through the Internet in the medium term. It would also integrate NGOs that are interested in

promoting community empowerment. Through Internet communications, a more open and integrated society would be formed and communities would be more empowered for their self-help activities. Advise on community empowerment would also be made available by NGOs and external experts in a more effective and efficient manner. It would also be utilized for B&B type community tourism development in the region.

In parallel with the promotion of community empowerment at the village level, it is planned that the community leaders would be trained and encouraged at the oblast level. One of the effective ways of training leaders is to invite them to the models of community empowerment programs implemented with the support of donors, including those two pilot programs executed under this JICA study. By looking at the success or failure of programs and learning from their experiences, the community leaders would be empowered and networked.

(5) Deregulation and Public Support (Local Governance)

Self-help efforts at the community level are of prime importance but it is not sufficient to simply satisfy the objectives of the social and community development plan. Public support is indispensable.

Through the operation of the pilot programs, the community has encountered various hindrances due to legislative issues. For instance, various procedures are required to open a Yulta shop and sell products. Permission for use of state land for the facilities related to the community centre also takes a prolonged period. Without involvement of a donor agency, the procedures might have taken a longer period. NGOs are well aware of such difficulties imposed by local governments and it is a fact that a large number of regulations related to the implementation of community development programs exist.

It is therefore proposed that deregulation be studied and implemented so that community development activities can be realized through the initiative of villagers, with unnecessary regulations being modified. To this end, it is recommended that the deregulation at the LSG level be promoted in parallel with the decentralization program now promoted by the central government. It is suggested that NGOs would join in the modification process for deregulation. Local governance is enhanced if the deregulation is promoted for social and community development through a participatory approach.

9.4 Proposed Projects/Programs for Social and Community Development

For integrated development of the Issyk-Kul zone, several projects and/or programs for social and community development have been formulated through this study. These projects/programs include the following:

Table 9.7 List of Projects/Programs Proposed for Social and Community Development

Sector/Subjects	Program/Project	Schedule		
		2005	-2010	-2025
Social Development				
1. Education/Health	1) Strengthening of Vocational training	■	▨	▨
	2) Rehabilitation of health facility management in sanatoriums		▨	
	3) Development of Central Asia rehabilitation center in Issyk-Kul			▨
Community Development				
1. Community empowerment	1) Establishment of network for the community empowerment	■	▨	▨
	2) Development and marketing of community products/goods (Michi no Eki)	■	▨	▨
	3) Community development fund		▨	▨
	4) Deregulation concerning the CBO business/ community development		▨	

It is noted that rehabilitation of health facilities in sanatoriums and development of Central Asian rehabilitation centres are related to the healthcare sector, but they might alternatively be considered as programs for medical tourism under the tourism development plan.