Afghanistan

Reconstruction Vision

September 2002

JSCE

in consultation with

Kabul University

Preface

Twenty years of war have devastated Afghanistan. It is estimated that the reconstruction of the devastated national land and government agencies will cost $10.2 billion over the five years to 2006. The countries and organizations participating in the earlier International Conference on Reconstruction Assistance to Afghanistan identified education, health, infrastructure development and other priorities for the war-torn country's reconstruction and pledged a total of $4.5 billion in aid. Aid-providing countries and international organizations are now working out the specific ways of assistance. In this respect, they must take care to prevent their assistance from being unreasonably dispersed in an inefficient manner, since a variety of countries and international organizations are providing aid for a variety or areas and geographical regions. To this end, donor countries, international organizations and nongovernmental organizations share a basic strategy and vision on the national reconstruction with the aid-receiving nation and its people. They are urgently required to formulate this strategy and vision.

It is up to the Afghan people to decide on the basic strategy and vision for national reconstruction. The Interim Administration of Afghanistan has spelled out its strategy for the reconstruction and development in its National Development Framework that it worked out in the run up to the International Conference on Reconstruction Assistance to Afghanistan. It is now mapping out a specific vision for the reconstruction. Japan, as one of a few donor countries that experienced reconstruction after World War II and as an Asian country like Afghanistan, is positioned to make positive contributions to the Afghan people's efforts to work out the national reconstruction vision.

Based on such realization, the Japan Society of Civil Engineers (JSCE), as a new-type NGO consisting of experts, has launched the Special Committee on Reconstruction Vision of Afghanistan to consider a reconstruction vision from the viewpoints of national land planning, regional community development, infrastructure development and other special areas. Furthermore, the committee discussed the issue with Kabul University, and finally we reached a consensus on the vision.

The vision by the JSCE centers on the reconstruction of physical infrastructure, which is the second of the three pillars cited in the National Development Framework.

The JSCE and the committee hope that the vision will become a base for the exchange of views between experts from the Afghan government, stakeholder nations and international organizations and will make some contributions to the Afghan people's efforts to map out their own vision.

Note) Main text is available on http://www.jsce.or.jp/ & any inquiry and comments should be addressed to nishino@grips.ac.jp

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Executive Summary

0. Background

A year after the World War II, Japan formulated National Reconstruction and Development Plan. As its economy started recovering in the 1950s, Japan compiled several comprehensive regional development plans for key development areas. In 1960s, Japan formulated the first National Comprehensive Development Plan to cope with massive population inflow to urban areas, great needs in infrastructure development, and the high pace of economic growth. Japan has formulated 5 such national plans so far, which are said to have played key roles in achieving Japan's present prosperity. It is noted that Japanese civil engineers are a part of main contributors to those comprehensive development plans.

With the above experiences in mind, and as Asian nation, Japan Society of Civil Engineers (JSCE), decided to contribute intellectually to the reconstruction and development of Afghanistan as an NGO free from policies of any donor. Members of JSCE consist of responsible engineers of infrastructure projects to city planners, urban and rural development specialists, national development policy specialists and specialists on cooperation with development countries for development policy and implementation of infrastructure projects. JSCE established the special committee for drafting the Afghanistan Reconstruction Vision in April 2002.

The proposed Vision is composed of two parts. The former part figures out anticipated situation of the target year of 2010; and measures that should be taken to attain sustainability with limited funds. The Vision is based on the data available from Afghanistan Statistics Office, international aid agencies, UN agencies and so on. The know-how for formulation of Japan's National Comprehensive Development Plans was extensively used in the course of preparation of the Vision. The latter part is devoted to provide cautions towards effective use of 4.5 billion (USD) pledged for 2.5 years at Tokyo conference held in January 2002.

Kabul University was duly consulted on a draft of the Vision when it was finalized. With the input from Kabul University, some of the officials of the Transitional Government of Afghanistan and some of the participants of the International Conference on Kabul and the National Urban Vision, September 21-24, 2002, Kabul, the Vision has been completed and distributed to international agencies, UN families and bilateral donors for their consideration. The Vision is of a rolling nature with continuous improvement. A revised Vision will be distributed again to the international community whenever appropriate.

1. Basic concepts for reconstruction

For the Afghan people who have been relieved of a long war, the top priorities are the unification of peace-pursuing people and stabilizing the national livelihood.

With a view to this, reconstruction may center on mid-term economic development measures and relevant infrastructure development, such as redevelopment of farming land, restoration of light industry, renovation of existing power supply facilities, reconstruction of key roads and so on. Locations for such measures are form a crescent-shaped axis that links Kabul as the center to other major cities such as Mazar-i-Sharif, Ghazni, Kandahar and Herat. Considering that reconstruction is to be expanded to cover the whole nation in the medium- term, one may name the concept of reconstruction proposed in this Vision as the "Crescent to Full Moon Initiative." The target year of this Vision is 2010. Also proposed therein is the establishment of a special administrative organization and a relevant planning institution.

The Vision proposes that the basic principle for reconstruction of the physical side should be to aim at Afghanistan to its state of 23 years ago before the outbreak of civil war. Large infrastructure projects that had somehow been initiated since then, successfully or otherwise, should be taken into account. Thus, Afghanistan could obtain fundamental conditions for sustainable growth as an autonomous nation. More specifically, attention has to be paid for changes in political and economic factors during the long war, economic effect of the end of the Cold War and subsequent independence of the Central Asia countries from the former Soviet Union; economic development of all neighboring countries need to be considered in the Vision. Another principle proposed is that the refugees and the internally displaced persons should be granted freedom in choosing the site of their resettlement. The development agenda should be owned by the Afghan nation. The position of the Vision is no more than one of the reference materials for Afghanistan for its reconstruction and development strategies.

2. Methodology for preparation of the Vision

As the core methodology, population projection for the whole country and geographic breakdowns played key roles in the course of deliberation on the Vision. According to the UN Population Division projection, the overall population of Afghanistan in 2010 is projected to be 31 million, a population increase of nearly 10 million people in a ten-year period. Since achieving rapid economic growth in short term may be difficult under the current situations, this extremely clear trend of population increase could be a constraint for reconstruction and sustainable development.

As for the trend of the refugees outside Afghanistan, an influx of approximately 2.6 million people is anticipated in the ten years up to 2010. Therefore, smooth accommodation of rapidly increasing population, including provision of employment opportunities for returning refugees, is an urgent and critical issue for Afghanistan.

In the region-specific future population projections, a trend of population increase was recognized in Kabul, the major cities situated along the Ring Road and the major national highways, and the provinces along the border.

Possible food supply and necessity for rehabilitation of irrigation and drainage system were also projected, with such pre-conditions as finalization of de-mining and ending of drought, and along the following three scenarios for annual grain supply per person: 187 kg, 200 kg and 250 kg.

3. Major subjects included in the Vision

3.1 Rehabilitation of the Economy and Industry

For the time being, food self-sufficiency and employment creation are set as the top priorities for the economic and industry sectors of Afghanistan. The focal point of economic rehabilitation in the medium- and short- term is the revitalization of agriculture. The target should be to enable Afghanistan to secure food self-sufficiency and the first priority is to increase the productivity of agriculture by clearing landmines, building and restoring irrigation facilities and inputting fertilizers and farm machines and tools. Needs of restoration and improvement of the main existing small- and medium-sized irrigation facilities are highlighted.

As for light industry, it is necessary to rebuild the domestic production system by making investments, mainly for the restoration of the existing facilities. Priorities are: intermediary goods relating to agriculture and reconstruction (fertilizers, cement, bricks, farming tools and others) that the full-scale reconstruction work is expected to require; daily consumer goods (soap, matches, tableware, etc.); processed agricultural products (flour milling, livestock processing, etc.); traditional handicrafts, marble and precious stones, and mineral resources.

While both agriculture and light industry have to expand supply capabilities in the first place, development of their infrastructure and administrative systems is also an important task. As for the development of natural resources and transit trade, first priority will be to secure transportation routes, because this will contribute not just to job creation but also to obtaining foreign capital.

3.2 Improvement of Infrastructure

Regarding transportation infrastructure, the top priority to be implemented is to improve roads within Kabul and those that link the main cities on the “Crescent Axis”. At the same time, international roads connecting main cities and neighboring countries are to be enhanced for strengthening the function of international corridor. The improvement of Kabul Airport is also a priority in order to smoothly receive international aid. When these improvements are conducted, care must be taken for the improvement of the order-placing system, increasing the Afghan government’s capacity to place orders and developing the construction industry.

As for electric power, the medium- -term policy should be to raise per capita power generation to a level not far from those of neighboring countries, by developing electric power sources using domestic natural resources, and constructing gas

pipeline and / or transmission lines. The short-term development focuses are rehabilitation of the existing facilities mainly in Kabul, improvement of operation and management of generating facilities, and expansion of electric power import from neighboring countries.

Potable water supply in urban areas should basically be provided through water pipes and the first step is to restore the functions of the existing facilities to secure potable water supply for around two million people. Other improvement measures are diffusion of technology for digging wells and maintenance that will suit the local conditions; substitution of surface water for a part of ground water in the long run; promotion of participation of communities and NGOs; development of private companies; and education for the conservation of water resources; and countermeasures for the pollution of groundwater. In cities where population is expected to concentrate, a long-term strategy for using groundwater on a sustainable basis should be examined.

3.3 Promotion of collaboration between Cities and Agricultural Communities

To realize autonomous development of individual areas when input resources are limited, farming areas should be developed mainly as sites for producing foods and cities should be developed as sites for distributing and trading products from farming areas. To develop trunk roads and intra-area roads linking cities and agricultural communities and extending to airports is also very important to enable intra-area distribution of products between cities and agricultural communities and transportation of daily necessities.

As for reconstruction of major cities, master plans should be developed, even if they are very rough ones, to avoid urban sprawl that was experienced by most of Asian major cities including Japanese cities. The capital Kabul , as the political and economic center of Afghanistan, and as a symbol for national unification, must be restored and improved as soon as possible, in terms of housing and hygiene conditions in particular, as it is expected to accept the extremely large population influx. Reconstruction of other major cities should be undertaken along the "Crescent Axis" first, then to full moon, i.e. along the entire Ring Road.

4. Plan for using the $4.5 billion in pledged aid

4.1 Evaluation of $4.5 Billion in Pledged Aid

A total of $4.5 billion in aid has been pledged for reconstruction of Afghanistan over 30 months. For the immediate future, the pledged aid may determine the scope of reconstruction projects. Given the Afghan population of approximately 22 million, the $4.5 billion for two and a half years means only $80 per person per year. The same amount can also be translated as only 3.6 million simple labor jobs annually even if all amount is spent for job creation. The international community should recognize that the pledged $4.5 billion is too small in amount for Afghan reconstruction.

Given the medium- and long-term economic conditions for Afghanistan, the pledged aid of $4.5 billion should be in the form of grant-in-aid. In addition, aid should not be conditioned for non-urgent or unnecessarily high-grade projects while policy dialogues are essential in accordance with the latest National Development Framework and relevant UN policies.

4.2 Prioritization and Levels of Reconstruction Projects

In order to efficiently implement reconstruction projects with limited funds, Afghanistan must prioritize projects and consider specific levels for their implementation. Since the top priority for Afghanistan is the achievement of food self-sufficiency, reconstruction of agricultural infrastructure may top the priority list, followed by development of key highways and reconstruction of basic urban infrastructure.

Of agricultural infrastructure, irrigation and drainage facilities that had been working in the past will have to be restored. Roads subject to urgent restoration will include the Ring Road, access roads to neighboring countries and natural resources, and links between highways and nearby communities. Since most displaced people are expected to settle in urban regions, housing priority may have to be given to Kabul, the most populated cities in Afghanistan, and then to cities along the crescent of the Ring Road, and house construction should be implemented in line with urban development plans. Another priority may be given to restoration of existing electricity facilities and of cement plants necessary for reconstruction projects.

As the amount of funds allocated to each sector will be extremely small, and yet many sectors call for commencement of reconstruction as early as possible, policy makers and planners must be extraordinarily realistic in setting targets of actual reconstruction projects.

4.3 Efficient and Effective Usage

Given the limited aid funds available, appropriate technologies should be adopted so that local enterprises and engineers are properly involved in infrastructure restoration and job creation as widely as possible; and that labor-intensive methods and local know-how can be taken advantage of as much as possible. Some forms of technical assistance should be designed for developing and fostering private enterprises in the course of reconstruction process.

In order to appropriately distribute wages to rural poor people through relevant projects, and to efficiently and effectively achieve reconstruction, local NGOs and the Community Forums, which are organized by UN Habitat, should be mobilized in such a way that, for example, they are provided block grants together with necessary constraint conditions for the use of resources. It is greatly important to minimize the use of international engineers, managers and staff, and thus to minimize the outflow of aid funds from Afghanistan.

1. Overview

1.1. Significance of the Vision and Basic Concept

1.1.1. Support for National Unification

For the Afghan people who have been relieved at last of a long war, the top priority may be to avoid any more war. Without the prevention of further war, they cannot reconstruct their devastated national land or return to dignified livelihoods. The central government should put its governance into full play to secure national unification and stable national management.

The Reconstruction Vision of Afghanistan attempts to specify how best to reconstruct the nation in order to support promotion of the national unification. As the vision is worked out, the Afghan people as a whole are expected to participate in discussion in order to share the vision showing the nation's desirable perspective and to support promotion of their unification. On the other hand, Afghanistan must build good partnerships with neighboring countries. It is very important for Afghanistan to specify its national reconstruction concept through this vision to neighboring countries.

A reasonable target of the initial phase reconstruction is to rapidly restore the country to its state 23 years ago before the outbreak of civil war. In restoring the country, it is important to consider political and economic changes in the global context during the past two decades, including the end of the Cold War, the independence of its neighboring countries from the former Soviet Union, economic changes in Afghan neighbors including former Soviet republics as well as Pakistan and Iran, and economic globalization.

1.1.2. Improvement of People's Living Conditions and Provision of Employment Opportunities

At present, millions of displaced Afghan people are hurriedly returning home from domestic or foreign refuges. For people who have avoided being displaced, houses have been destroyed and jobs have been lost. Their living conditions have worsened remarkably. Thus, for the immediate future, the top priority of reconstruction is the stabilization of the livelihood for every citizen. At the same time, people's living conditions should be rapidly improved and employment opportunities should be given to as many citizens as possible, as early as possible. These are the basic tasks for national reconstruction.

In this respect, Afghanistan should adopt a national reconstruction program centering on medium-term economic measures, while having a long-term, comprehensive viewpoint on appropriate national development. The medium-term

economic measures should include the restoration of agriculture, the reconstruction and development of light industry, and the construction of roads as economic infrastructure. In order to efficiently proceed with reconstruction under limited resources and time, it is important to make the most use of recoverable existing facilities and natural resources.

In the case of Japan's postwar reconstruction, its positive steps to increase food production with foreign aid just after the World War II allowed the country to invest precious foreign currency reserves in industrial development, instead of spending them on food import. These steps created foundations for the later high economic growth.

1.1.3. Formation of "International Corridor Nation"

Afghanistan is a central Asian inland country neighboring six other countries. Since ancient days, Afghanistan has been a key point for the East-West Silk Road and North-South traffic linking Russia and India, seeing a crossing of various races and cultures.

A full-fledged national reconstruction policy must be designed for Afghanistan to enhance domestic highways and links with neighboring countries in order to exploit the potential to be an international traffic hub and play a role as an "International Corridor Nation." This should promote its economic development and stable national management toward its autonomy.

1.2. Preparation of Reconstruction Vision of Afghanistan

1.2.1. "Crescent to Full Moon Initiative"

Based on the above acknowledgement, our vision, while having a long-term, comprehensive view about national reconstruction and development for Afghanistan, gives top priority to promoting the unification of peace-pursuing people and stabilizing the livelihood for every citizen. First of all, it proposes a reconstruction vision including medium-term economic development measures and relevant economic infrastructure development.

Specifically, the vision calls for increasing food production through redevelopment of farming land in the vicinity of major cities, developing economy including restoration of light industry for meeting domestic demand, reconstructing electricity and other energy supply facilities mainly through the repair of existing facilities around Kabul, and redeveloping economic infrastructure such as key highways. In order to address the rapid increase expected in population, a master plan especially for urban development should be worked out.

Locations for these measures form a crescent-shaped axis that links Kabul as the center to other major cities such as Mazar-i-Sharif, Ghazni, Kandahar and Herat. Considering that reconstruction is to be expanded to cover the whole nation in the medium- and long-term, we name the concept of reconstruction proposed in this vision as the “Crescent to Full Moon Initiative” (Figure 1.2.1).

1.2.2. Toward Implementation of Reconstruction Vision

We set the target year for this vision at 2010 in consideration of limited data as preconditions for the vision and its economic development characteristics. The vision should not be rigid but should be followed up on in response to changes in conditions and the framework involving Afghanistan.

In order to achieve the efficient development of social capital, the appropriate distribution of capital and resources, and the balanced regional development in line with this vision, Afghanistan should establish a special administrative organization to work out the vision and manage the implementation of relevant projects and should build a relevant planning institution. It should also develop statistics to objectively grasp the conditions of the Afghan people and the national land.

This kind of national reconstruction vision should be considered and adopted by the Afghan people and understood by the donor community. We expect wide-ranging discussions based on our proposal.

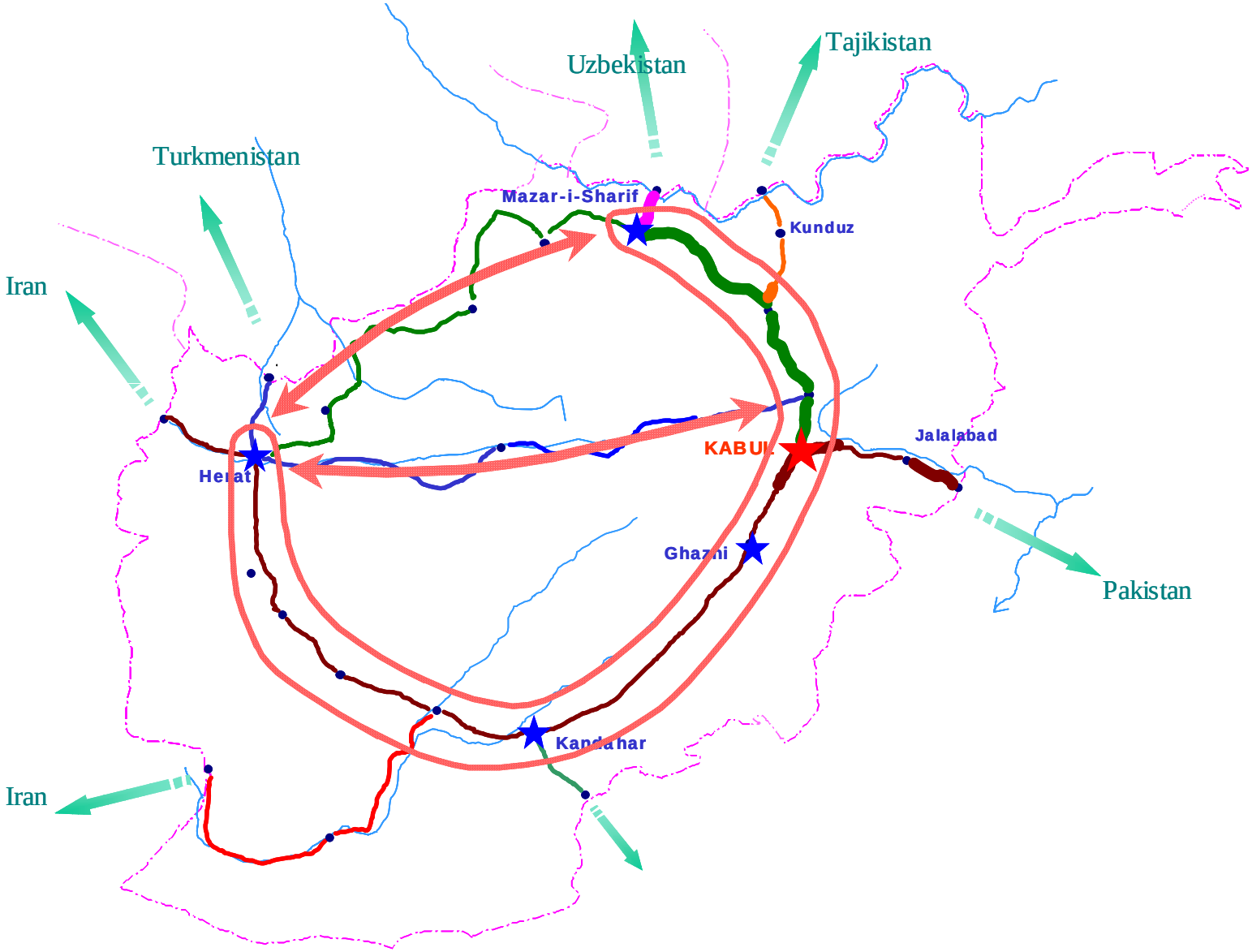


Figure 1.2.1 Crescent to Full Moon Initiative

2. Human and National Frameworks in Afghanistan

2.1. The Nation and Characteristics Thereof

Afghanistan is situated in the central part of the Eurasian continent. It is a landlocked country, with Tajikistan, Uzbekistan and Turkmenistan to its north, Iran to its west, Pakistan to its east and south, and China to its northeast. Afghanistan's total land area is approximately 650,000 square kilometers (1.8 times the size of Japan). Nearly three-quarters of this, however, is made up of the Hindu Kush mountain system, which advances across the country from Pamir in the northeast toward the border with Iran in the west, and is part of the Alps / Himalayas fold belt. The country occupies a critical transportation location, connecting Russia with India and with the Silk Road running from East to West. Various ethnic groups invaded the area and it was a place where different cultures encountered each other.

2.1.1. Transportation Infrastructure (Figure 2.1.1)

(1) Roads

The main transport means in Afghanistan are roads. The road network consists of primary highways, secondary highways and provincial roads. Primary highways total 4,510 kilometers in length. This includes a 2,360-kilometer belt highway called the Ring Road that links the main cities and towns (Herat, Kandahar, Kabul, Mazar-i-Sharif, Sibirgan, Maymana, and Herat) in a loop. Only 2,400 kilometers of the primary highway is paved. This paved part is mostly the Afghanistan section of the Asia Highway. Construction has been left unfinished on the 615 kilometers of the Ring Road linking Sibirgan to Herat. Secondary highways and provincial roads total 2,700 kilometers and 15,000 kilometers, respectively. Both types are mostly earth roads or partially gravel roads.

Landlocked Afghanistan has six major gateways. They are Herat and Mashhad (Iran), Kandahar and Quetta (Pakistan), Jalalabad and Peshawar (Pakistan), Tashkurgan and Termez (Uzbekistan), Tourghondi and Gushgy (Turkmenistan), and Shirkan (Tajikistan).

Key roads such as the Ring Road and the gateways were built mainly in the 1960s and 1970s using aid provided by the former Soviet Union and the United States. There are 0.03 kilometers of road per square kilometer in Afghanistan and 0.88 per 1000 people—extremely low figures. In addition, most roads are currently in a bad condition due to the lack of appropriate maintenance resulting from the wars since 1978.

(2) Airports

After roads, the next most important transport means are airports. There are,

including small ones, a total of 41 airports and the largest and most important one is Kabul International Airport. There are eight major airports. Kabul, Jalalabad, Kandahar, Mazar-i-Sharif, and Kunduz have civilian airports, and there are military ones in Bagram, Sheghnan, and Khost.

The major airports were built using aid from the Soviet Union and the United States. The airports in Kabul, Mazar-i-Sharif, Bagram, Jalalabad were built by the Soviet Union and those in Kandahar, Heart, Kunduz, Mazar-i-Sharif, and Jalalabad were built by the United States.

Currently, 36 airports are in usable condition. All the major airports are surfaced and usable, and 6 sub-major airports are also usable.

Airport facilities have been severely damaged due to inappropriate maintenance in the past twenty years. The fundamental structures of airports such as runways, guide roads, and terminals have also been damaged and equipment such as guidance lights are also lacking. Furthermore, human resources such as controllers and paramedics are insufficient.

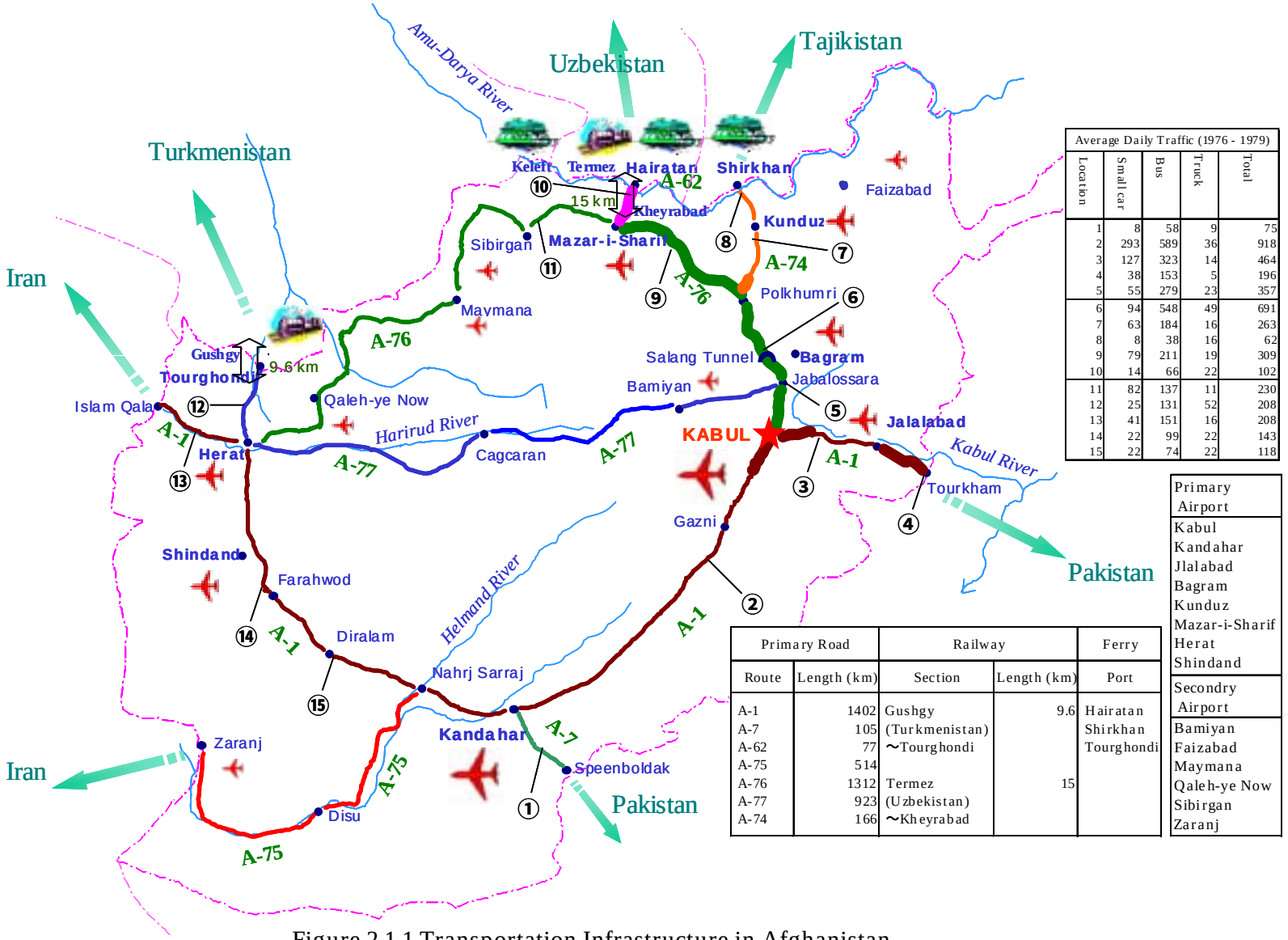
(3) Railways

Until the 1970s, Afghanistan was a country without railways. Topographical restrictions have prevented the development of railways in Afghanistan. After its invasion of Afghanistan, the Soviet Union built a communal-use rail and road bridge at Hairatan in 1982 over the Amu Darya, which forms the border with Uzbekistan, to transport munitions.

The total length of the railways is currently 24.6 kilometers (track: 1.524 meters). Of it 15 kilometers connect Termez of Uzbekistan with Kheyrabadad the remaining 9.6 kilometers connect Gushgy of Turkmenistan with Tourghondi. The operational status of these railways is not known.

(4) Water Transport

The Amu Darya river that forms Afghanistan's northern border with the former Soviet Central Asian republics is the only river in Afghanistan upon which water transportation is possible. Trade with the former Soviet Union by means of water transportation used to be conducted at three places on this river—Shirkhan, Hairatan, and Keleft—but the last one has come to a halt at present.



Average Daily Traffic (1976 - 1979)

Location	Small car	Bus	Truck	Total
1	8	58	9	75
2	293	589	36	918
3	127	323	14	464
4	38	153	5	196
5	55	279	23	357
6	94	548	49	691
7	63	184	16	263
8	8	38	16	62
9	79	211	19	309
10	14	66	22	102
11	82	137	11	230
12	25	131	52	208
13	41	151	16	208
14	22	99	22	143
15	22	74	22	118

Primary Road		Railway		Ferry
Route	Length (km)	Section	Length (km)	Port
A-1	1402	Gushgy	9.6	Hairatan
A-7	105	(Turkmenistan)		Shirkhan
A-62	77	～Tourghondi		Tourghondi
A-75	514			
A-76	1312	Termez	15	
A-77	923	(Uzbekistan)		
A-74	166	～Kheyrabad		

Primary Airport
Kabul
Kandahar
Jlalabad
Bagram
Kunduz
Mazar-i-Sharif
Herat
Shindand
Secondry Airport
Bamiyan
Faizabad
Maymana
Qaleh-ye Now
Sibirgan
Zaranj

Figure 2.1.1 Transportation Infrastructure in Afghanistan

2.1.2. Industry

In the agricultural society of Afghanistan, industry has remained in an early stage of development. However, it has come to be recognized that the evolution of industry is vital for Afghanistan's economic development, and earnest efforts have been made with a view to its realization. In the post-conflict reconstruction work, this is all the more necessary.

(1) Mineral Resources

There are a variety of mineral deposits in the central highlands of Afghanistan. Due, however, to problems such as lack of capital, underdevelopment of transportation means (roads), lack of market research, and shortage of technical capability, this has not been sufficiently exploited. Despite that, salt extraction and lapis lazuli (gem) extraction has been proceeding vigorously.

(2) Natural Gas

Natural gas has been stressed among the natural resources. Afghanistan's natural gas was discovered by Soviet experts in the 1960s and came to be exported to the Soviet Union. Natural gas mainly lies in the north, in Jowzjan Province near Mazar-i-Sharif. Short-term reserves exceed 70 billion cubic meters with residual reserves at 40-50 billion cubic meters.

(3) Coal

Coal deposits were already confirmed at 11.5 million tons in the 1960s. Coal has been yielded in Bagram Province and Samangan Province in the north. There are, however, known to be reserves in Herat Province in the west and Badakshan Province in the northeast, with residual reserves confirmed at 73 million tons.

(4) Light Industry

Before the conflict, salt refining, dried grape picking, fruit canning, dried fruit packing and others were conducted in the food processing industry. Although production volume for salt refining did not expand due to shortages in supply of sugar cane, the dried grape industry was up to international standards. Other than those, before the conflict in 1978, production took place of cement (126,500 tons), chemical fertilizer created with natural gas (105,700 tons), cotton fabrics (8,800 meters), and woolen goods using sheep's wool (259,500 meters).

(5) Export and Import

Export mainly consists of agricultural goods—karakul (leather goods), carpets (handicrafts) and others, and perishables such as grapes, melons, and pistachios. The main export destinations for leather goods and handicrafts were the former Soviet Union, Europe, and the United States. Grapes and melons were mainly exported to the former Soviet Union, Pakistan, and India.

Sugar, tea, fuel oil, machine oil, cement, sheet iron and steel, all kinds of daily necessities and others were imported. The main suppliers were the former Soviet Union, Japan, Pakistan, India, the former West Germany, and the United States.

2.1.3. Ethnic Problems Causing Concern

Unlike the case of Japan, rebuilding and reconstructing a nation like Afghanistan that has a wide variety of races and languages and has been devastated by long years of war accompanies various difficulties.

For some time, it has been pointed out that the formation of national consciousness in Afghanistan has been impeded by ethnic and tribal conflict. As one of issues for reconstruction, the current ethnic problems are causing concern in the same context.

According to the estimated figure of the United Nations Population Division (1), the current population of Afghanistan is approximately 22 million. It is held that the population was 15 million at the point when the country descended into conflict in 1978. Over 1 million lives were lost in the course of the more than 20 years of conflict in Afghanistan. On the other side, rapid population growth was attained with high birth rates. The multi-ethnic and multilingual country of Afghanistan is composed of over 20 ethnic groups. Of these, the main groups are the Pashtuns (38%), the Tajiks (25%), the Hazara (19%) and the Uzbeks (6%). The Pashtuns reside in the east and south, the Tajiks in the northeast and northwest, the Hazara in the central area and the Uzbeks in the north.

The name Afghanistan has its origins in the word Persian word Afghan, which signifies the Pashtun people, the main race of the country. Furthermore, since successive dynasties had used Persian (present-day Dari) as the language of court, the official language also became Persian. It was in the postwar period that Pashtu, the mother tongue of the Pashtun people, gained the position of equal status as official language along with Persian. The multi-ethnic and multilingual country of Afghanistan maintained its national unification by acknowledging the predominance of the Pashtun, who had provided successive kings from the inauguration to the abolition of the dynasty, in terms of race, Islam in terms of religion, and Persian in terms of language.

The civil war in post-Soviet withdrawal Afghanistan strengthened the orientation toward ethnic conflict in which each power became an armed faction, and furthered the development of regional warlords. In addition to that, if the central government itself becomes involved in ethnic-based conflict, Afghanistan’s unification becomes endangered. Furthermore, progress in reconstruction work comes to a halt. As the conflicts based on ethnic problems intensified in Afghanistan, the sense of caution also increased among its neighboring countries. Since Afghanistan’s main races are distributed across national borders, the preservation of Afghanistan’s unification is

vital for the stability of its surrounding countries.

It is known that the work of reconstruction of Afghanistan and the support and cooperation of various foreign countries and organs to that end will not be implemented in a "vacuum" devoid of conflict. However, from the viewpoint of wishing for the early reconstruction and stability of Afghanistan, there are great expectations upon the reason and nationalism of the Afghan people, as has been repeatedly stressed by Hamid Karzai, the Interim Afghan Minister.

2.1.4. Agricultural Communities and Cities

Afghan society, a nation based on agriculture, can be broadly divided into two groups: agricultural communities and cities.

Afghanistan's agricultural communities mostly evolve in river basins. Large-scale agricultural communities develop in valleys that are rich in melt water, where oasis agriculture can be conducted, as well as in the delta plains that extend around them. Such communities are also evolving in regions where man-made irrigation facilities (the Karez system etc.) have been developed. But most of Afghanistan's rivers have the characteristic that they dry up within the country. Rivers that join the sea can only be found in the eastern region. These flow into the Kabul River, which passes through the capital Kabul, and continue to the east before flowing into the Indus River of neighboring Pakistan, finally draining into the Arabian Sea.

The regions of the agricultural communities can be broadly divided into three categories. The first is the central highlands region, across which extends the Hindu Kush mountain system, which has several peaks of 5,000 or 6,000 meters above sea level. The second is the northern plains region, which is situated north of the Hindu Kush Mountains, facing Central Asia. The third is the southern plateau region, which is located south of the Hindu Kush Mountains, facing the western part of Pakistan, Balochistan Province. The central highlands are a land of complicatedly tangled high ridges and deep valleys, in which agriculture is conducted in the narrow valleys. Although the northern plains region is fertile, ensuring a water supply is necessary in order to utilize it as cultivated land. In the Kunduz basin and the Salang pass in the south part of the plains, however, sugar cane and cotton growing farming is conducted. The southern plateau region plays host to arid deserts, the remains of dried-up riverbeds, and the salt flat desert known as the Desert of Death, though there are also places such as Kandahar Province where there is a spread of irrigated and cultivated land.

The residents of the agricultural communities endeavor to live self-sufficiently by cultivating wheat, barley, maize, rice and others, as well as keeping a small amount of livestock, such as sheep. The agricultural communities themselves are also self-contained economic units. Generally, however, there have been no people

operating non-agricultural businesses such as stores or barbers in the agricultural communities, and necessities—farming tools, clothing, tea and sugar—have been supplied from nearby towns. Furthermore, an agricultural community becomes a social unit regardless of whether it is large or small in scale, and a neighborly consciousness is formed among its residents.

Afghanistan's economy is fundamentally supported by these agricultural communities, or in other words, by agriculture that produces a self-sufficient supply of food. The population of the agricultural communities makes up 70-80% of the total population, and the output from the agricultural sector accounts for over 80% of Gross Domestic Product.

In contrast to this are the cities. There are only four cities in Afghanistan: Kabul, Kandahar, Herat and Mazar-i-Sharif. These cities are all located in fertile regions and surrounded by agricultural communities in which irrigation facilities are developed. They are each in a position that easy access is possible to major cities of neighboring countries, and have come to be strategic cities from a commercial viewpoint. Access is possible from Kandahar and Kabul to Pakistan and India, from Herat to Iran, and from Mazar-i-Sharif to Uzbekistan and Turkmenistan.

Development that saw the establishment of high schools, hospitals, electric plants and others had been growing steadily in these four cities, through government modernization policy that began in the 1930s.

Of the four, however, only Kabul could be called an internationally modern city. That the central bureaucracy of the capital and the embassies of various countries are concentrated in Kabul goes without saying. Kabul also has banks and international-class hotels, and active international business has been performed there. Kabul was becoming a town with a jostling elite of high-level officials, military officers, all types of secretaries, foreign diplomats, and foreign tourists—a cosmopolitan city.

As well as the four cities, there are prominent towns. They are Jalalabad, Faizabad, Bagram, Maymana, Ghazni, and Pol-e-Khomri. Enjoying a water supply, these towns grew as strategic points of trade or industrial towns, and they became better known.

It was trade that came to bind the agricultural communities and cities and towns in this Afghanistan. A wide variety of agricultural produce, such as fruit, and handicrafts were produced in the agricultural communities. This was then accumulated through the cities and exported to surrounding countries.

For realizing speedy reconstruction, it is firstly important to develop the links between agricultural communities and cities. Thus, implementation of concrete and effective measures for practicing the "Crescent to Full Moon Initiative" and forming an "International Corridor Nation" are called for.

2.2. Current State of the Nation

Table 2.2.1 and 2.2.2 compare economic status and living standards between Afghanistan and neighboring countries.

Even before the civil war started in the late 1970's, Afghanistan was said be one of the world's poorest countries, saw widespread national devastation through the long period of conflict that began with the Soviet invasion, and became pushed into an increased state of poverty.

Due to limitation on the availability of statistical data during wartime, it is difficult to grasp individual or sector specific damage conditions whereas international organizations have generally pointed out the following things.

(1) Impact of War Cannot Be Underestimated

Over a million Afghans died in the course of the ten-year Soviet presence in Afghanistan from 1979 to 1988. Furthermore, it is estimated that nearly 700,000 Afghans suffered psychological or physical damage. Meanwhile, the long period of war produced a large amount of displaced people, both internally and overseas. Even at this current point of tentative cessation of war, it is estimated that 200,000 Afghan refugees remain in Pakistan and 140,000 in Iran. Therefore, smooth repatriation and accommodation of refugees is one of the most critical issues for reconstruction.

The brain drain from Afghanistan is also huge. Tens of thousands of the intellectual class have taken political asylum in or emigrated to North America, Europe, the Pacific region, and the former Soviet Union.

(2) Deprivation of Education Opportunities

It has become a well-known fact that Afghan women were forced into the workplace and deprived of education opportunities during the policy of segregation of men and women under the Taliban regime. What has come to receive less attention, however, is that thousands of schools have been damaged during the long years of conflict and education opportunities have been severely deprived.

Recently, the gross enrolment ratio in primary education is reported to be approximated 40% for boys and several % for girls. It is not difficult to imagine that the figures are lower for boys and girls receiving secondary education. In view of this worrying situation, NGOs from all countries have been establishing small private schools in each area and striving to put a stop to the decline in education services. Those provisions of education opportunities are to be the major targets of reconstruction.

(3) Lack of Medical Services

Afghanistan's infant mortality rate is 152 babies per 1,000—nearly the lowest level in the world. The under-five mortality rate is 257 children per 1000. 91% of delivery is not attended by trained personnel. The ratio of toddlers aged one that have been vaccinated for tuberculosis and polio are 48% and 35% respectively. Life expectancy at birth is 46 years for males and 45 for females, which are extremely low compared with international standards.

(4) Lack of Safe Drinking Water and Public Health Facilities

It is estimated that about 19% of people in urban areas and 11% in rural areas can avail of safe potable water in Afghanistan. It has been pointed out that disease due to drinking unsafe water is connected to the high infant and child mortality rates. From that perspective, several NGOs and communities have been striving to remedy the problem. It goes without saying that positive results cannot be expected unless education on sanitation is tied to education on water supply and sewage systems. In addition to safe water supply, it is important to strengthen education on dealing with dirty water and filth.

(5) Three Years of Major Drought

The major drought that has continued for three years since 1999 has also dealt a huge blow to Afghan society. The three-year drought has made fear of starvation in agricultural communities a reality, resulting in producing several tens of thousands of internally displaced persons.

Besides the problem of waterfall, the major drought also caused a serious problem on account of forest destruction, environmental disruption, farmland on which cultivation has been abandoned, and decline in water supply management capacity. Thus, addressing those problems is also an important task.

Table 2.2.1 Comparison of economic status between Afghanistan and neighboring countries

Items	Afghanistan	Pakistan	Iran	Tadzhikistan	Uzbekistan	Turkmenistan
Area	652,225km^2	796,096km^2	1,648,195km^2	143,100km^2	447,400km^2	488,100km^2
Population	21.8 million (Source: UN Population Div 2000 est.)	142.5 million (Growth rate 2.15%, est. from census in 1998)	62.8 million (99/00)	6.1 million (Jan 1999)	24.23 million (Dec 1998)	5.37 million (Jan 2001)
Ethnic groups	Pashutun, Tajik, Hazara, Uzbek etc	Punjabi, Shindhi, Pathan, Baloch	Persian, Azeri, Kuld, Arab etc.	Tajik: 64.9%, Uzbek: 25.0%, Russian: 3.5%, others: 6.6% (1995)	Uzbek:76%, Russian:5.7%,Tajik:4.8%, Kazakh:4.1%, Tatar:1.5%	Turkmen:77%, Russian:7%, Others:16%
Languages	Pashutun, Dari	Urdu (national language) English (official language)	Persian, Turkic, Kurudish etc,	Tajik (official)	Uzbek (official)	Turkic (official)
Religions	Sunni Muslim, Shi`a Muslim (Hazara)	Muslim:97%, Hindu:1.5% Christian:1.3%, Parsi:0.2%	Muslim, Christian, Jewish, Zoroastrian	Sunnni Muslim is the most superior in Tajik	Sunnni Muslim is the most superior in Uzbek	Muslim (mainly sunni)
Key Industries	Agriculture (wheat, barley)	agriculture, cotton related industry	petroleum related industry	agriculture (cotton, fruit), stock farming light industries (textile)	cotton, mining	mining (natural gas, petroleum etc), agriculture (cotton)
GNP (nominal)		$ 59.62 billion (00/01)	416.7 trillion real (99/00) (GDP)	$ 2.14 billion (98:WB)	$ 20.94 billion (98:WB)	$ 3.2 billion (99:WB)
GNP/capita		$ 429 (00/01)	$ 1,760 (99)	$ 290 (99:WB)	$ 870 (98:WB)	$ 660 (99:WB)
Real Growth Rate(GDP)		2.6% (00/01)	2.4% (99/00)	+1.7% (97:The Interstate Statistical Committee of CIS)	4.4% (99:The Ministry of macro economic statistics)	16.0% (97:The Interstate Statistical Committee of CIS)
Export commodities		cotton goods, leather products, garment, rice	crude oil	Aluminum, cotton	textiles, mineral products, base metal	natural gas, cotton, petroleum products, textiles, electricity
Import commodities		petroleum, machinery, chemicals, iron & steel, edible oil	machinery, foodstuffs, iron & steel, vehicles	aluminum, natural gas, grain	machinery, equipment, vegetable products	foodstuffs, airplane, vessel, machinery and machinery parts, plastic, Rubber

Source) The Ministry of Foreign Affairs Web Site

Table 2.2.2 Comparison of living standards between Afghanistan and neighboring countries

			Afghanistan	Pakistan	Tajikistan	Turkmenistan	Uzbekistan	Iran	Japan	USA
Population (thousands)		2000	22,720	156,483	6,188	4,459	24,318	67,702	126,714	278,357
Total Fertility Rate (average number of children per woman)		1995-00	6.9	5.0	4.2	3.6	3.4	2.8	1.4	2.0
Infant Mortality Rate (per 1000 live births)		1995-00	152	74	57	55	44	35	4	7
Under-5 Mortality Rate (per 1000 live births)		1997	257	136	76	78	60	35	6	8
Life Expectancy at Birth (year)	Female	1995-00	46	65	70	69	71	70	83	80
	Male	1995-00	45	63	64	62	64	69	77	73
Births Attended by Trained Personnel (percent)		1995-97	9	18	79	96	98	86	100	99
Population with Access to Safe Water (percent)		Rural 1990-97	5	73	49	X	88	82	X	X
		Urban 1990-97	39	89	82	X	99	98	X	X
		Total1990-97	12	79	60	74	90	90	X	X
Population with Access to Sanitation (percent)		Rural 1990-97	1	39	X	X	99	74	X	X
		Urban 1990-97	38	93	46	X	100	86	X	X
		Total1990-97	8	56	X	91	100	81	X	X
Net Primary School Enrollment (percent)		Female 1996-97	33	X	X	X	X	89	100	100
		Male 1996-97	66	X	X	X	X	91	100	100
Net Secondary School Enrollment (percent)		Female 1996-97	14	X	X	X	X	76	100	96
		Male 1996-97	30	X	X	X	X	86	100	97
Gross Tertiary School Enrollment (percent)		Total 1996-97	2	4	20	20	36	18	43	81
		Female 1996-97	X	X	X	X	X	36	X	X
Adult Literacy Rate (percent)	Female	1995	19	29	99	X	83	67	X	X
	Male	1995	50	58	100	X	93	82	X	X

Source) World Resources Institute

2.3. Population Trend and Future Population Projection

In planning the reconstruction of Afghanistan, it is extremely important to implement efficient and effective policies for reconstruction by forecasting the population frame for the future to the most accurate degree possible, through grasping the current population trend. In order to grasp the population trend and thus project the future population, it is necessary to first grasp the fundamental population composition of the country, then the various factors affecting population shifts, and also assess the trends of domestic and overseas migratory movement. Based on the current situation of Afghanistan, gradually securing the stabilization of the factors of fluctuation of the population in flux—refugees in foreign countries and internally displaced—and solving this population issue can be said to be a really urgent task in order to strive for smooth national reconstruction.

In the current circumstances, the reality is that the approach of accurately grasping the various factors pertaining to the population trend and being able to conceive its future direction is limited. On the other hand, however, it is to a certain degree also important to organize and confirm estimated figures based on the existence of recent factors of fluctuation of the population in flux and in consideration also that there are statistical constraints.

Here, after establishing certain assumptions, we wish to attempt to determine rough projections for the future population trends by region for Afghanistan based upon the statistical data compiled by the United Nation Population Division (UNPD) and others.

2.3.1. Basic Concept

Above all else, the important thing for the sound reconstruction of Afghanistan is to smoothly return the refugees and internally displaced people to their original areas of residence. In considering the desirable form of the country, it is of primary importance that each and every citizen of Afghanistan, without restriction, can by his/her own free will select the area in which he/she wishes to reside. Furthermore, if the many refugees seeking sanctuary overseas do not in fact return to Afghanistan and then take a hand in the reconstruction of the country, it would be fair to say that smooth reconstruction of the country will not progress.

In conducting a population projection for a country, the basic factors of population fluctuation are population by gender and age, death rates, birth rates and overseas migratory movement. It is necessary to also consider internal migratory movement if establishing population distribution by region.

Although there are many difficult aspects to grasping the factors of the current major population fluctuation and internal and overseas migratory movement in particular, the statistics of the UNPD projected population by country have provided major

indicators. That is, basing the current population projection for Afghanistan on the UNPD World Population Projects (1) that were published in 2000 is the sole assistance with respect to population by gender and age, death rates and birth rates.

Accordingly, this vision takes the approach of presenting a framework for future population trends, using the published figures in the UNPD Projected population by country as the basis and attempting to supplement this as far as possible with published statistical material on refugees.

2.3.2. Projected Future Population of Afghanistan

According to the projected figures of the UNPD, the overall population in Afghanistan in 2000 was approximately 21.765 million. In 2010, it will be 31.308 million, indicating a population increase of nearly 10 million in this ten-year period. The ten-year period from 1990 to 2000 also shows an increase of approximately 8 million people, and it can be said that there is an extremely clear stage of population increase as the long-term trend (Figure 2.3.1).

This increasing trend can be explained in a large part by the high number of births due to the rate of young population and so forth. The natural shift in population was about 3.5 million in the 1970s and 1980s, but approximately 4.8 million in the 1990s and about 6.95 million in the 2000s, showing a large-scale expansion trend. Though it is not the case that we can assume absolutely no impact from other factors, the trend of population increase in Afghanistan, an extremely young country in terms of population composition, is estimated to steadily continue in the future also.

For Afghanistan, a nation for which it is difficult to assume rapid growth and expansion of the economy and industry in the short term, it is also easy to assume the possibility that this kind of pressure of extremely high population increase, approximately 1.5-fold in a ten-year period, will become a major shackles on accomplishing sustainable growth. Table 2.3.2 is the overall population projection to 2050 by the UNPD. Accordingly, in order to pursue sustainable growth in Afghanistan in the future, it is necessary to investigate reducing population increase pressure, or in other words, measures for population control.

Table 2.3.1 Projected Population of Afghanistan (1970-2010)

Year	1970	1980	1990	2000	2010
Total Population	12,677	15,035	13,675	21,765	31,308
Male	6,555	7,770	7,065	11,227	16,136
Female	6,122	7,266	6,610	10,538	15,172
% aged 0-14	43.6	43.8	43.9	43.5	43.4
% aged 15-24	18.6	19.0	19.1	19.3	19.1
% aged 60 or over	4.7	4.7	4.7	4.7	4.7

Year	1970-1980	1980-1990	1990-2000	2000-2010
Variation	2,358	- 1,360	8,090	9,543
(Domestic)	3,480	3,510	4,695	6,945
(Migration)	- 1,122	- 4,870	3,395	2,600

（unit：thousands）

Source) United Nations Population Division, *World Population Prospects: The 2000 Revision*

Table 2.3.2 Projected Population of Afghanistan (2010-2050) (reference)

Year	2010	2020	2030	2040	2050
Total Population	31,308	40,206	50,542	61,824	72,267

（unit：thousands）

Source) United Nations Population Division, *World Population Prospects: The 2000 Revision*
Note) Appendix 2 Afghanistan : Urban Population Estimate, a handout from The Ministry of Urban development and Housing at the International Conference on Kabul and the National Urban Vision, Sept.21 2002

On the other hand, the trend of outflow and inflow of refugees that composes a large part of the numbers of international migration has at times an impact on the population trend through large volumes that exceed the natural shift, corresponding to the national circumstances at the time.

In the projected figures of the UNPD, it is estimated that there will be in inflow of approximately 2.6 million people in the ten-year period from 2000 to 2010. In other words, approximately 2.6 million refugees that are displaced overseas will return to Afghanistan. This tallies for the most part with the 2.65 million refugee population volume in 2000 in the refugee statistics of the United Nations High Commissioner for Refugees (2). As for the refugee population itself, it is needless to say that it includes

numbers that are impossible to grasp statistically, that accurate estimated numbers do not exist and that there are no other means of assistance. Because of these points, in this work of grasping the long-term shift of the overall domestic population, we would like to use as a base the 2010 projected population figures that include the projection of an increase of 2.6 million people due to an international population shift.

Aside from this long-term trend, it is easy to project that circumstances are becoming severe due to the current Afghan refugee situation, including internally displaced. The September 2001 UNHCR statistics (3), as current statistics on refugees, show an increase of more than one million people in comparison to 2000, just in terms of refugees. Meanwhile, in the most recent statistics, approximately 620,000 people in total returned from Pakistan and Iran in the roughly three-month period from March 1 – May 20, 2002. For overall domestic population in this vision, we adopt the future population projections by the UNPD (2000). Be that as it may, however, it is necessary to sufficiently base the vision on the fact that this trend of refugees has a major impact on shifts in the overall population of Afghanistan and on smooth progress in reconstruction.

2.3.3. Projected Population by Region (Province / City)

The 1998 Population Statistics by City and Province by the Central Statistic Office (4) is the base data for domestic population by province. Since the UNPD future population projection statistics do not cover population by region, we calculate projected future population by region in this work in reference to the statistical figures of the Central Statistic Office.

As for natural shift etc. of population distribution excluding outflow and inflow of refugees, the 1998 population distribution by province is also assumed as is for 2010. On the other hand, regarding the 2.6 million refugees returning from 2000 to 2010, we distribute this figure by province based upon the proportions in the 1992-1997 statistics on returnee refugees by province published by the UNHCR (5).

The projected 2010 population by province and city (provincial capital) are as in Tables 2.3.3 and 2.3.4. Looking at the numbers of population increase, we can see that major increase is indicated for Kabul, for which a hike of 1.15 million people is presumed, provinces along the Ring Road such as Herat, Nangarhar, Ghazni, Balkh, Kunduz and Kandahar, as well as provinces that have major cities positioned along major national highways. In addition, in terms of population increase rate, major increases are indicated for provinces along borders with either Pakistan or Iran, such as Paktya, Herat, Farah and Nangarhar.

Such outcomes are indicated as the projected figures for population distribution by province based upon certain assumptions. It will be necessary to avoid the occurrence of problems of destabilization of public security and the creation of slums due to

excessive population accumulation in specific regions—major cities or cities near national borders. In the future, through the work of reconstruction, civil engineering projects in connection with the revitalization of agriculture and preparation of the social base will be implemented in each region of Afghanistan. From the perspectives of necessary food and obtaining employment, too, it is necessary that there is a well-balanced population distribution in the various regions in which these projects will be implemented. Above all, it is desirable, to distribute the population in a planned manner to the periphery of agricultural areas (including land formerly used for agriculture) of the various regions for which a recovery of agricultural production is expected.

Furthermore, regarding the population distribution calculated in this report, it is necessary to consider the projected figures based upon a variety of assumptions in the trends up to this point. In addition, attention should be paid to the facts that trends of internal migratory movement have hardly been considered in this report and that major migratory movement can occur in accordance with the domestic public security situation in the future, the economic situation and others.

Table 2.3.3 Population Projection by Province

Region	1998	2010	Increase	State	1998	2010
East-Central	6,147	9,340	3,193	Kabul	2,728	4,184
				Kapisa	334	499
				Parwan	674	1,008
				Wardak	383	584
				Logar	271	449
				Ghazni	1,759	2,616
Eastern	2,685	4,772	2,088	Paktya	385	859
				Nangarhar	1,007	1,870
				Laghman	286	459
				Kunar	298	526
				Paktika	327	497
				Nuristan	104	152
				Khost	279	409
North-Eastern	550	814	264	Badakhshan	550	814
Northern	5,259	7,987	2,727	Takhar	647	965
				Baghlan	703	1,077
				Kunduz	979	1,527
				Samangan	282	419
				Balkh	1,097	1,679
				Jawzjan	471	708
				Faryab	648	975
				Sari Pul	434	637
Western	2,135	4,004	1,869	Badghis	279	432
				Hirat	1,092	2,259
				Farah	314	628
				Ghor	451	686
Southern	2,450	3,889	1,439	Nimroz	138	232
				Hilmand	691	1,081
				Kandahar	799	1,321
				Zabul	229	360
				Uruzgan	592	895
Central	315	502	187	Bamyan	315	502
TOTAL	**19,541**	**31,308**	**11,767**		**19,541**	**31,308**

（unit：thousands）

Source) United Nations Population Division, *World Population Prospects: The 2000 Revision*
Afghanistan Central Statistics Office Estimate (1998)
UNHCR, Refugees, January 1998

Table 2.3.4 Population Projection by City (Provincial capital) (2010)

City	1998	2010	Increase
Kabul	2,137	2,867	729
Mahmud Raqi	54	74	19
Chaharikar	145	196	51
Markazi Bihsud	98	134	37
Puli Alam	80	120	40
Ghazni	1,011	1,342	331
Gardez	60	158	98
Jalal Abad	165	322	158
Mihtarlam	107	152	45
Asad Abad	53	94	41
Sharan	49	69	20
Nuristan	47	62	15
Khost(Matun)	65	86	21
Fayz Abad	180	239	59
Taluqan	160	215	55
Baghlan	31	53	22
Kunduz	223	318	95
Aybak	75	100	25
Mazari Sharif	196	277	81
Shibirghan	135	183	47
Maymana	53	76	23
Sari Pul	130	172	42
Qalay-I- Naw	35	52	17
Hirat	221	468	247
Farah	69	135	67
Chaghcharan	119	164	44
Zaranj	39	59	20
Lashkar Gah	76	118	42
Kandahar	413	584	171
Qalat	26	41	15
Tirin Kot	58	83	25
Bamyan	63	93	31
TOTAL	**6,370**	**9,104**	**2,734**

(unit : thousands)

Source) United Nations Population Division, *World Population Prospects: The 2000 Revision*
Afghanistan Central Statistics Office Estimate (1998)

(Notes on the calculation of projected population by region)

- Population by province for 2000 is calculated based on the assumption that the population composition by province for 1998 would have scarcely changed in 2000.
- In the course of the population increase in the ten-year period from 2000 to 2010, assumption is made that there is no major misdistribution by region in age distribution, birth rates, and death rates with respect to natural shift, and the 2000 population composition by province and city is used unchanged in application on the overall population in 2010 for the projection.
- Reference is made to the statistical values published by the UNHCR with respect to international migratory movement, that is, the outflow and inflow of refugees by province, for the ten-year period from 2000 to 2010. Table 2.3.5 shows the number of refugees returning to each province from the neighboring countries of Pakistan and Iran in the period from 1992 to 1997. Regarding international migratory movement, calculation is made based upon the assumption that the composition of returning refugees by province shown in these figures will remain the same in the future.
- For reference, Table 2.3.6 shows population projection by province based on recent statistics of UNHCR on refugee returns from Pakistan and Iran (March 1 to May 20, 2002).
- Within refugees returning in each province, assumption is made that a fixed percentage will return to the provincial capital. The 2010 average city to agricultural community rate (national average: 27%) is adopted for this percentage.
- According to figures published by the UNHCR in 2001 on Afghan refugees, refugees departing from Afghanistan to Pakistan or Iran account for 95% of all refugees.

Table 2.3.5 Number of Refugees Returning from Pakistan or Iran by Province (1992-1997)

Region	State	Refugees Return			% total
		from Pakistan	from Iran	Total	
East-Central	Kabul	176,614	11,452	188,066	8.6
	Kapisa	6,013	1,374	7,387	0.3
	Parwan	13,606	3,036	16,642	0.8
	Wardak	13,630	4,538	18,168	0.8
	Logar	58,320	810	59,130	2.7
	Ghazni	15,282	9,252	24,534	1.1
Eastern	Paktya	340,264	93	340,357	15.5
	Nangarhar	452,193	32	452,225	20.6
	Laghman	42,522	1,374	43,896	2.0
	Kunar	101,880	30	101,910	4.6
	Paktika	19,298	44	19,342	0.9
	Nuristan	0	0	0	0.0
	Khost	0	0	0	0.0
North-Eastern	Badakhshan	1,178	2,570	3,748	0.2
Northern	Takhar	4,665	5,393	10,058	0.5
	Baghlan	25,889	10,595	36,484	1.7
	Kunduz	59,033	18,121	77,154	3.5
	Samangan	2,150	1,278	3,428	0.2
	Balkh	18,719	24,489	43,208	2.0
	Jawzjan	10,282	3,189	13,471	0.6
	Faryab	1,251	10,680	11,931	0.5
	Sari Pul	0	0	0	0.0
Western	Badghis	715	9,903	10,618	0.5
	Hirat	550	311,739	312,289	14.2
	Farah	4,979	77,577	82,556	3.8
	Ghor	91	11,340	11,431	0.5
Southern	Nimroz	365	13,383	13,748	0.6
	Hilmand	69,522	2,963	72,485	3.3
	Kandahar	155,615	6,261	161,876	7.4
	Zabul	26,257	64	26,321	1.2
	Uruzgan	1,398	11,444	12,842	0.6
Central	Bamyan	42	18,607	18,649	0.9
TOTAL		**1,622,323**	**571,631**	**2,193,954**	**100**

(unit : thousands)

Source) UNHCR, Refugees, January 1998

Table 2.3.6 Population Projection by Province based on recent data on refugee returns

Region	1998	2010	Increase	State	1998	2010
East-Central	6,147	10,185	3,193	Kabul	2,728	4,926
				Kapisa	334	518
				Parwan	674	1,131
				Wardak	383	581
				Logar	271	424
				Ghazni	1,759	2,606
Eastern	2,685	4,767	2,088	Paktya	385	566
				Nangarhar	1,007	2,218
				Laghman	286	488
				Kunar	298	449
				Paktika	327	483
				Nuristan	104	153
				Khost	279	409
North-Eastern	550	814	264	Badakhshan	550	814
Northern	5,259	8,100	2,727	Takhar	647	987
				Baghlan	703	1,096
				Kunduz	979	1,519
				Samangan	282	427
				Balkh	1,097	1,656
				Jawzjan	471	770
				Faryab	648	1,001
				Sari Pul	434	643
Western	2,135	3,187	1,869	Badghis	279	418
				Hirat	1,092	1,613
				Farah	314	484
				Ghor	451	671
Southern	2,450	3,783	1,439	Nimroz	138	204
				Hilmand	691	1,066
				Kandahar	799	1,285
				Zabul	229	354
				Uruzgan	592	875
Central	315	473	187	Bamyan	315	473
TOTAL	**19,541**	**31,308**	**11,767**		**19,541**	**31,308**

(unit : thousands)

Source) United Nations Population Division, *World Population Prospects: The 2000 Revision*
Afghanistan Central Statistics Office Estimate (1998)
UNHCR Website

3. Reconstruction Vision of Afghanistan

3.1 Rehabilitation of the Economy and Industry

3.1.1. Basic Concept

- For the time being, food self-sufficiency and employment are set as the top priorities.
- The focal point of the economic recovery in the short- and medium-term is the revival of agriculture. The target is for Afghanistan to recover its economic level of 1978 when the country generally secured food self-sufficiency and exported some agricultural products.
- The most efficient and effective measure to achieve this target would be to promptly restore abandoned land that was once used as farmland. The first priority should be the clearance of landmines from such farmland while its productivity should be increased by building and restoring irrigation facilities and inputting fertilizers and machines and tools.
- As for light industry, it is necessary to rebuild the domestic production system by making investments, mainly for the restoration of the existing facilities for intermediary goods such as daily consumer goods and simple construction materials, which the country is importing from neighboring countries. Production priorities will be the fertilizers, cement, bricks, farming instruments and others that the full-scale reconstruction work is are expected to require.
- While both agriculture and light industry have to expand supply capabilities in the first place, development of the infrastructure that supports supply and systems linking supply and demand (distribution and market) is also an important task.
- The development of natural resources and transit trade will contribute greatly to not just the securing of employment but to obtaining foreign capital as well. The first priority will be securing transportation routes, which requires improving the transportation infrastructure.
- Whereas, in the short term, certain employment-absorbing effects are expected in the revitalization of agriculture and in the development of various kinds of economic infrastructure involved in the restoration works described below, in the medium- and long-term, it is necessary to promote light industry, develop natural resources and expand transit trade, from the viewpoint of securing sustainable economic growth.

3.1.2. Promotion of agriculture

(1) Grain needed for food self-sufficiency

The average daily calorie consumption per capita in Afghanistan was 2085 kilocalories in 1980. It fell to 1914 kilocalories in 1990 and then decreased further to 1755 kilocalories in 1999 due to worsening civil wars and a series of droughts (6). Despite food aid from international organs and NGOs, the conditions would have worsened further due to droughts from 1999 to 2001 and the warfare since last year.

In such circumstances, simple food aid has only a temporary effect, making it an urgent need to increase the country's ability for food self-sufficiency. FAO data (7) shows that Afghanistan produced 2.026 million ton of grain and the shortage was 2.2 million ton. If its population is assumed at 22.6 million in 2001, grain distribution per capita was 187 kilograms in the year (This figure includes indirect consumption such as feed for livestock. It was 150 kilograms when indirect consumption was excluded. Figures hereinafter include indirect consumption). Assuming the minimum grain consumption for survival, 5.049 and 5.855 million ton will be needed in the years 2005 and 2010, respectively, when the respective population is estimated to reach 27 and 31.31 million.

This figure, however, is the minimum amount for survival. It is hoped that, in the medium term, grain supply will return to the country's 1980 level of more than 2050 kilocalories, and in the long term, to 2450 kilocalories, the minimum energy intake set by the FAO. Since the grain production was 4.038 million tons and the population was 15.95 million in 1980, grain distribution per capita in the year was around 250 kilocalories. If this figure is taken as the consumption target per capita, the grain needed in the years 2005 and 2010 will be 6.75 and 7.827 million tons, respectively.

The issue is the per capita grain consumption of 250 kilograms. The grain consumption and average energy consumption of neighboring Pakistan in fiscal 1980/1981 were 193 kilograms and 2157 kilocalories, respectively. This, therefore, shows that grain consumption of around 200 kilograms per capita enables an energy intake of more than 2050 kilocalories, if energy consumption is possible from items other than grain, such as meat, dairy products and fruit (The average per capita annual grain consumption of low-income countries is around 200 kilograms). So, if 200 kilograms is set as the mark, grain supply of 5.4 and 6.262 million tons will be needed in the years 2005 and 2010, respectively.

Table 3.1.1 shows the amount of grain needed for food self-sufficiency in Afghanistan based on its long-term population growth as mentioned above and the three scenarios above (Scenario 1: grain consumption per capita: 187 kilograms; Scenario 2: 200 kilograms; Scenario 3: 250 kilograms).

Table 3.1.1 Grain Needed for Food Self-Sufficiency

Year	2000	2005	2010	2020	2030	2040	2050
Scenario 1 (187kg/capita)	4,070	4,892	5,854	7,519	9,451	11,561	13,514
Scenario 2 (200kg/capita)	4,353	5,233	6,261	8,041	10,108	12,366	14,453
Scenario 3 (250kg/capita)	5,441	6,541	7,827	10,052	12,636	15,456	18,067

（Unit：thousand tons/year）

(2) Status and problems of agricultural producing power

The main industry of Afghanistan has traditionally been agriculture. Afghanistan's potential for agricultural production is high and the productivity of its irrigation agriculture is comparatively high as can be understood from the fact that the country generally secured food self-sufficiency in 1978. Grain production in 1997 and 1998 reached almost the same level as that of the pre-civil war period and expansion of supply seems possible to a certain extent by improving and expanding the irrigation facilities.

Four grains－wheat, barley, rice and maize－account for the most of the domestic production. Research from 1977 shows the distribution of the areas that produce those grains. The production areas of wheat, which accounts for three quarters of grain production, are dispersed widely where irrigation is possible, but they are densely located in the Northern areas around Mazar-i-Sharif and Kunduz. Production of barley concentrates on the Eastern areas around Kabul although it is also produced in the North and the South. Rice is produced mainly in the Northern areas around Kunduz and Eastern areas around Jalalabad while the Eastern areas around Kabul and Jalalabad are the main production areas of maize.

At this point, we will give an overview of the land use in Afghanistan. Table 3.1.2 shows the land use of the country from 1984 to 1986.

Table 3.1.2 Land Use in Afghanistan

Year	1984	1985	1986
Total geographical area	65,223	65,223	65,223
1. Agricultural area	39,810	39,810	39,810
A. Arable land	7,910	7,910	7,910
－Area under temporary crops	3,686	3,691	3,816
of which: irrigated	2,581	2,586	2,719
of which: non-irrigated	1,105	1,105	1,097
－Area under permanent crops	144	144	144
－Area not under cultivation	4,081	4,076	3,950
B. Pastures and Meadows	30,000	30,000	30,000
C. Forests	1,900	1,900	1,900
2. Other area (non-agricultural area)	25,413	25,413	25,413

（Unit：thousand hectares）

Source) Afghanistan Central Statistics Office, Statistical Year Book 1984-1987

Table 3.1.3 shows the grain production and planted acreage of Afghanistan based on figures published by the Central Statistic Office and materials of the Japan Office of the FAO.

Table 3.1.3 Grain Production in Afghanistan

Crops		Unit	1978	1984	1985	1986	1998	1999	2000	2001
Wheat	Cultivation[1]	10^3 ha	2,348	2,324	2,321	2,313	1,760	1,505	1,256	1,192
	Production	10^3 ton	2,813	2,860	2,850	2,750	2,834	2,499	1,469	1,597
	Yield	kg/ha	1,198	1,232	1,228	1,189	1,610	1,660	1,170	1,340
Rice	Cultivation	10^3 ha	210	214	214	214	180	140	130	121
	Production	10^3 ton	428	479	480	480	450	280	156	182
	Yield	kg/ha	2,038	2,238	2,243	2,243	2,500	2,000	1,200	1,500
Corn	Cultivation	10^3 ha	482	480	480	480	200	160	96	80
	Production	10^3 ton	780	798	799	810	330	240	115	160
	Yield	kg/ha	1,618	1,663	1,665	1,688	1,650	1,500	1,200	2,000
Barley	Cultivation	10^3 ha	310	306	306	304	200	180	123	87
	Production	10^3 ton	325	332	333	330	240	216	74	87
	Yield	kg/ha	1,048	1,080	1,088	1,085	1,200	1,200	600	1,000

Source) 1978～1986) Afghanistan Central Statistics Office, Statistical Year Book 1984-1987
1998～2001) FAO, http://www.fao.or.jp/topics/index.html

[1] The sum of irrigated and non-irrigated cultivation areas. Yields for each area may differ substantially.

Since the researchers in and before 1986 are not the same as the researchers in and after 1998, it is normally inappropriate to compare the data of 1978 with those of 2001. In this comparison, however, much attention should be paid to the fact that both the planted acreage and the production volume of Afghanistan's grain production have substantially decreased. Of particular note is the fact that the total planted acreage of the four grains has decreased by around 19,000 square kilometers, falling below half the level of some 23 years ago. Such lost farmland can be seen left unused in a country that has geographically limited land that can be irrigated.

On the other hand, the crops per unit area (hectare) of wheat, rice, maize and barley in the year 1998, when the country did not suffer droughts, are 1.6 tons, 2.5 tons, 1.65 tons and 1.2 tons, respectively. Although wheat, rice, maize and barley show increases from 1978 of 34%, 23%, 2% and 15%, respectively, their crops per unit area are low when compared with those of neighboring countries, leaving room for improvement.

Table 3.1.4 is data on irrigation in Afghanistan prepared by Yasuhiko Kunihiro (8) on the basis of his field study in 1971, showing the water resources of the total area irrigated of 2.6 million hectare (rivers, Karez systems, springs and wells) and the stability in water supply for irrigation.

Table 3.1.4 Conditions of Irrigation

Source	Irrigation Status[2]	Amu River		Indus River		shistan River		Total	
		Area	%	Area	%	Area	%	Area	%
River	Plenty	402	39	376	36	260	25	1,038	100
	Scarce	240	74	60	19	23	7	323	100
	Fallow	517	61	17	2	318	37	852	100
	Total	1,159	52	453	21	601	27	2,213	100
Kareze	Plenty	3	4	32	41	44	55	79	100
	Scarce	2	20	2	20	6	50	10	100
	Fallow	2	3	4	5	73	92	79	100
	Total	7	0	38	23	123	77	168	100
Spring	Plenty	39	21	32	17	116	62	187	100
Well	Plenty	8	50	1	6	7	44	16	100
Total	Plenty	452	37	441	82	427	50	1,320	51
	Scarce	242	20	62	14	29	4	333	13
	Fallow	519	43	21	4	391	46	931	36
	Total	1,213	100	524	100	847	100	2,584	100

(Unit : Thousand hectares)

Source) Y. Kunihiro (June 1975), *Irrigation in Afghanistan*, Journal of JSIDRE

[2] Status from the beginning of April to the beginning of August.
- Plenty: irrigated water is available except destruction of irrigation facilities due to flood.
- Scarce: deficit of irrigated water for weeks occur every year.
- Fallow: dry farming is applied since water supply is not available.

Next, the problems of the irrigation facilities in the 1970s are discussed below.

a) Inefficiency of the irrigation facilities

The research shows that the area where irrigation can be always conducted is only 1.3 million hectares, a little over 50% of the approximately 2.6 million hectares irrigated even in the pre-war period. And around 0.3 million hectares do not receive enough water in the irrigation period of each year due to low irrigation efficiency resulting from the precedence of upstream areas within irrigation organizations and the loss of simple irrigation facilities. Furthermore, of particular note is the fact that 0.9 million hectares of land has irrigation facilities and yet is used by dry agriculture or left unused because there is no irrigation water available. This is caused by precedence of upstream areas in taking water. Most of the 0.9 million hectares of land is located in downstream areas or belongs to the lowest levels of irrigation organizations.

b) Fragile irrigation facilities

- The problem of the irrigation method is difficulty in controlling the amount of water taken in. The irrigation facilities cannot take in the water needed when water levels of rivers lower.
- Irrigation facilities are fragile and are lost due to floods, not allowing farmers to take in water during the most important period (May to July).
- Even when take-in facilities are not lost in floods, floods run down watercourses, causing destruction of the watercourses, inundated farmland and the accumulation of earth and sand in the watercourses every year.
- Fragile facilities that will become ruined soon if they are not continuously maintained
- Karez systems, which are famous as a way for using groundwater, are widely distributed in the provinces in the south and west of the Hindu Kush mountain range. Statistics show there are 6,740 of them and the area irrigated by them reaches 167,000 hectares. However, 60-70% of Karez irrigation facilities are not in operation due to maintenance problems. Karez systems do not continue to work if earth and sand are not removed periodically and have problems such as shortage of skilled workers for them and high maintenance costs.

c) Large-scale irrigation facilities built by foreign aid

In the year 1971 when the research was conducted, modern irrigation facilities were built using foreign aid of countries including the Soviet Union, the People's Republic of China, the United States and Germany. Most of them were intended to reclaim barren land, but despite the input of funds over a long period, have seen almost no results, with these projects making only limited progress.

The impact of war on irrigation facilities and problems of the development of groundwater in recent years are stated below.

a) Destruction and decline of irrigation facilities due to wars and abandonment of maintenance

Irrigation facilities in the 1970s, which had the problems described above, suffered damage from war since around 1979 and 30% of irrigated farmland was also damaged. 15-20% of irrigated farmlands are not maintained or inadequately maintained and their basic irrigation facilities are not functioning, leading us to think that farmland actually irrigated was seriously affected. There are, however, no detailed reports available. Some irrigation facilities are being restored by international organs or NGOs.

b) Use of groundwater and problems involved

In such a situation, groundwater is becoming more important, especially in the southwestern region. Wells dry up in one or two years and have to be dug deeper. In certain areas that use wells, the levels of groundwater have been lowering by one to three meters every year. Therefore, use of groundwater for irrigation cannot be a measure that is sustainable for a long period of time.

(3) A plan for food self-sufficiency (balancing of supply and production for the grain needed for food self-sufficiency)

Table 3.1.5 shows the medium-term target of grain production against the grain needed for grain self-sufficiency described above and amounts of grain that can be supplied in the long term.

Table 3.1.5 Balance of Grain Self-Sufficiency

Year	1998	2005	2010	2020	2030	2040	2050
Requirement (10^3 tons)							
Scenario 1 (187kg)	-	4,892	5,854	7,519	9,451	11,561	13,514
Scenario 2 (200kg)	-	5,233	6,261	8,041	10,108	12,365	14,453
Scenario 3 (250kg)	-	6,541	7,827	10,052	12,636	15,456	18,067
Production (10^3 tons)	3,855	4,926	6,133	8,712	11,529	15,303	19,128
Wheat (irrigated)	2,025	2,639	3,396	4,824	6,271	8,140	10,175
Yield (ton/ha)	1.64	1.9	2.2	2.5	2.6	2.7	2.7
Area (10^3 ha)	1,235	1,389	1,544	1,929	2,412	3,015	3,768
Wheat (non-irrigated)	810	1,072	1,310	1,861	2,418	3,139	3,924
Yield (ton/ha)	0.85	1	1.1	1.25	1.3	1.35	1.35
Area (10^3 ha)	953	1,072	1,191	1,488	1,860	2,325	2,907
Rice (irrigated)	450	547	653	872	1,160	1,582	1,978
Yield (ton/ha)	2.5	2.7	2.9	3.1	3.3	3.6	3.6
Area (10^3 ha)	180	203	225	281	352	439	549
Corn	330	376	425	656	977	1,465	1,831
Yield (ton/ha)	1.65	1.67	1.7	2.1	2.5	3	3
Area (10^3 ha)	200	225	250	313	391	488	610
Barley	240	293	350	500	703	977	1,221
Yield (ton/ha)	1.2	1.3	1.4	1.6	1.8	2	2
Area (10^3 ha)	200	225	250	313	391	488	610
Demand and supply balance (10^3 tons)							
Scenario 1 (187kg)		*34*	*278*	*1,194*	*2,078*	*3,741*	*5,614*
Scenario 2 (200kg)		*-307*	*-129*	*671*	*1,421*	*2,938*	*4,675*
Scenario 3 (250kg)		*-1,615*	*-1,694*	*-1,339*	*-1,107*	*-153*	*1,061*

Area under cultivation

Irrigated area (10^3 ha)	1,415	1,592	1,769	2,211	2,763	3,454	4,318
Non-irrigated area (10^3 ha)	1,353	1,522	1,691	2,113	2,642	3,302	4,128
Total cultivation (10^3 ha)	2,767	3,113	3,459	4,324	5,405	6,756	8,445

The balance of grain self-sufficiency above has the following as the premise of the analysis.

- Grain needed is calculated using the population estimate mentioned above and cases of annual grain consumption per capita of 187 kilograms (Scenario 1), 200 kilograms (Scenario 2) and 250 kilograms (Scenario 3).
- Crops per unit area in farmland that uses irrigation are assumed to reach the levels of neighboring countries such as Pakistan in 2010 and then the world level in 2040. Given the actual crops in 1998, grain crops per unit area of the farmland that depends on rainwater is assumed to be 50% of the irrigated farmland.
- The areas of farmland that is irrigated or dependent on rainwater are assumed

to expand by 25% in 2010 compared with those of 1998. The rate of expansion after that is assumed to be 25% per 10 years.

The above calculation yields the following analyses.

- Even when considerably large crops per unit area and areas irrigated or dependent on rainwater mentioned above are assumed, the case of 250-kilograms grain consumption per capita (Scenario 3) predicts grain shortages of around 1.6 and 1.7 million tons in 2005 and 2010, respectively, necessitating imports to make up for these shortages. However, if the target is set at 187 kilograms (Scenario 1) or 200 kilograms (Scenario 2), food self-sufficiency will almost be achieved in 2010.
- Although Scenario 3 predicts near food self-sufficiency as late as in 2050, the arable land of the country will have been used up during the period from 2040 to 2050, making it impossible to further expand farmland.
- Therefore, if the population is assumed to continue to grow after 2050, population control and the securing of energy sources besides grain will be important policy tasks.

To put agricultural production back on track as soon as possible, increasing the rate of food self-sufficiency, securing employment opportunities as well as promoting smooth absorption and settlement of the returning population, and restoring the farmland as soon as possible will be the most reasonable means. To achieve this aim, the conditions for conducting safe and stable production must be improved by raising the priority of clearing landmines in farmland. Further, it is very important for Afghanistan's agriculture, which has limited areas of arable land, to increase productivity by taking measures for appropriate administration of water resources including restoration and creation of irrigation facilities and by deploying a large number of input goods such as good seeds, fertilizers and agricultural tools.

Next, specific measures for realizing grain self-sufficiency in the medium term are discussed.

Priority should be placed on the restoration of small- and medium-sized irrigation facilities, completing the restoration and improvement of the main existing small- and medium-sized irrigation facilities by 2010.

① Principal party of restoration and aid

The financial capabilities of communities that own irrigation facilities are believed to be poor and shortage of water-supply engineers due to wars is serious. Although the principal party of the restoration is definitely communities, the government, international organs and NGOs should provide technological and financial aid until communities have recovered certain abilities and reached the level of self-independence.

② Priority in the restoration

Rank A: Irrigation facilities rated at this rank were able to supply water except when they were destroyed by floods. They should be given first priority of restoration and restored as soon as possible.

Rank B: Irrigation facilities rated at this rank have defects in their systems and could not supply water for several weeks every year. They should be restored or improved after the Rank A facilities.

Rank C: Irrigation facilities rated at this rank are facilities abandoned due to upstream precedence in taking in water. They should be restored by realizing appropriate distribution of water.

③ Implementation of a fact-finding investigation into the irrigation facilities of the country and preparation of a restoration plan

As for the small-and-medium size irrigation facilities of the country, a fact-finding investigation should be conducted into their systems, design, maintenance and current functions as well as the man power and financial capabilities etc. of communities. A restoration plan should be prepared.

④ Implementation of restoration pilot projects concerning small- and medium-sized irrigation facilities

Based on the results of the fact-finding investigation into the irrigation facilities of the country and from the viewpoints of technology, restoration effects and developing human resources, model projects that will promote and induce restoration of irrigation facilities should be selected to provide and implement aid for them.

⑤ Establishment of a center providing technological assistance for the restoration of irrigation

Since simple restoration of old facilities will bring about many of the problems they had, the problems should be resolved as far as possible in restoration. As the official organization that will conduct this technological assistance, the “center providing technological assistance for the restoration of irrigation (tentative name)” will be established. The center will have the purposes below.

- Provision of technological assistance for restoring small- and medium-sized irrigation facilities
- Development of engineers who will design, build and maintain irrigation facilities
- Development of technologies that suit local circumstances for improving primitive irrigation facilities

⑥ Establishment of a system for using and maintaining rivers such as a system of water rights

⑦ Laying out of a plan for controlling the overall water environments of river systems

⑧ Establishment of a system for monitoring the flow rates and stream patterns of the country's rivers

(4) Rehabilitation of livestock farming

A task as important as the establishment of grain self-sufficiency in the restoration of Afghanistan's agriculture sector is the revitalization of livestock farming. Pre-civil war statistics show that livestock farming accounted for 30%, 16% and 14% of the agriculture sector, total GDP and total exports, respectively. The industry supplied raw materials for light industry such as woolen textiles (carpets), livestock products and leather products, playing an important role in its manufacturing industry.

Livestock farming is comprised of cattle rearing by resident farmers and grazing by nomads. Villages adopt mixed agriculture that combines livestock farming and grain production. Resident cattle make up for shortage of energy when farmers cannot consume enough grain, representing valuable food resources providing nutrients such as protein, calcium and vitamins. Cattle are also used for farm work and transportation of materials and are useful because its manure can be used as a fertilizer and fuel. Livestock products such as milk, eggs and wool are valuable sources of cash money so that livestock farming represents a kind of risk hedge against crop fluctuation. In the country, 1.5 million nomads (Kuchi), which accounts for 20% of the whole working population, make a living on livestock farming (2000 estimate). Table 3.1.6 and 3.1.7 show the amount of livestock and production quantities of livestock products.

Table 3.1.6 Estimated Amount of Livestock

Livestock	1978	1985	1995			1997		
	total	total	settled	nomadic	total	settled	nomadic	total
Cow	3,730	3,800	1,916	178	2,094	2,925	83	3,008
Sheep	14,414	19,500	6,438	6,130	12,568	8,420	7,832	16,252
Goat	3,187	—	2,897	2,492	5,389	4,649	1,951	6,600
Poultry	6,200	6,800	6,067	535	6,602	7,449	378	7,828

（Unit：thousand）

Source）1978:Afghanistan Central Statistics Office, Statistical Year Book 1978-1979
1985/91/95/97/2000: FAO (data for 1997 excludes northern areas)

Table 3.1.7 Production Quantities of Principal Livestock Products

Stock farm products	Unit	1978	1995
Milk			
Cow	ton	532,000	680,000
Sheep / Goat	ton	260,000	620,000
Meat			
Beef	ton	67,000	42,750
Mutton	ton	120,000	104,000
Chicken	ton	8,000	5,000
Egg	ea.	446,400,000	350,000,000
Wool	ton	22,800	33,000
Karakul pelts	ea.	1,294,000	450,000
Cow and Buffaloes skins	ea.	620,000	450,000
Small skin and hides	ea.	7,000,000	6,500,000

Source） 1978:Afghanistan Central Statistics Office, Statistical Year Book 1978-1979
1995:WB (2001), *Role and the Size of Livestock Sector in Afghanistan*

A report by the FAO [7] states that the amount of livestock that is slaughtered or die due to droughts since 1999 has been increasing, thus reducing the amount of livestock reared. Production of livestock products is believed to have decreased at the same time. Farmers and nomads who have lost their livestock will be living in severe conditions.

To revitalize livestock farming, one target should be to increase the amount of livestock reared to reach the level before the drought (1999). This requires financial assistance for the purchase of livestock. Not simply provision of funds but provision of "livestock loans" under which part of livestock revenue is used to repay the purchase amount would be ideal, in terms of reducing dependence on aid as well as becoming responsible for the livestock.

Afghanistan, however, does not have enough good-quality pasture, making livestock farming in winter especially difficult. This has caused problems in terms of livestock nutrition and health control, which leads to generally low livestock productivity. Although in-shed rearing using grain feed instead of grazing is effective for higher productivity, this involves large-scale consumption of grain as its indirect consumption and risks decreasing the amount of grain directly consumed by the people. Ruminants such as cattle, goats and sheep consume more grain feed than animals that have only one stomach such as pigs and poultry. Table 3.1.8 shows the amounts of grain feed needed to increase the weight of each head of livestock by one kilogram.

Table 3.1.8 Amounts of Grain Feed Needed for Raising Livestock

	Cow / Sheep	Poultry	Egg
Necessary crops for producing 1 kg of livestock	7 kg	2kg	2.6kg

Source) Lester R. Brown (2001), *Eco-Economy*, Earth Policy Institute

Therefore, unless there are surpluses in grain production, Afghanistan should aim for sustainable livestock farming centering on livestock rearing on pastures within the limits of that not affecting direct consumption of grain. For this purpose, it is hoped that the country will aim to make maximum use of livestock farming that uses fodder and waste crops. Take the example of milk production in India. By avoiding the use of grain feed and using fodder and waste crops, India increased its milk production from 20 million tons in 1961 to 79 million tons in 2000 and became the world-leader in milk production. Another great challenge for Afghanistan's agriculture sector, in addition to grain self-sufficiency, is how it will revive its livestock farming and achieve sustainable development within the limitations on its pastures and usable grain feed.

3.1.3. Development of light industry

Rehabilitation of the agriculture sector will play an important role in securing employment whereas it is important in securing foods as has been described above. However, given the need to absorb a large returning population from Iran and Pakistan and a very large population growth pressure in the medium- and long-term, the country has to create employment in other sectors besides agriculture, in order to bring back its economy to the pre-war level and achieve sustainable growth. Although temporary creation of employment related to the full-scale reconstruction projects is expected in the immediate future and the country will have a certain employment absorbing capability, attention must be paid to the fact that employment schemes related to reconstruction work are, after all, temporary and agriculture's employment absorbing capability has its limits.

The realistic approach to this situation should be, first, concerning intermediary goods that Afghanistan used to produce within the country such as daily consumer goods, simple construction materials and fertilizers, to shift gradually from imports from neighboring countries to domestic production. Since these light industries do not need high-level technology transfer and are labor-intensive industries, it will be possible to expand their supply capabilities with a certain degree of official support by restoring and improving the existing facilities and building new facilities in appropriate locations. These goods are expected to see large demand as the reconstruction work progresses. It is important to give priority to the production of

such intermediary goods as fertilizers, cement, bricks, pumps and farming implements and realize the domestic production system for them as soon as possible. As the imbalance of demand and supply of grain is likely to continue for a long period of time, it is also hoped that domestic production of light industry products will bring about positive effects in the country's international balance of payments.

Tables 3.1.9 and 3.1.10 show the past production quantities (from 1978 to 1991) and production facilities (governmental corporations only). Owing to the destruction of production equipment and cutting off of routes supplying raw due to the civil war, the production level of the country's domestic manufacturing industry should have decreased substantially and be currently below its 1991 level.

Table 3.1.9 Production Quantities of Afghanistan's Manufacturing Industry (1978-91)

Products	unit	1978	1980	1982	1984	1986	1988	1990	1991
Cement	10^3 ton	126.5	85.5	87.1	11.6	130.3	69.6	69.3	50.5
Chemical fertilizer	10^3 ton	105.7	105	120.8	120.5	126	117	105.5	74.5
Flour	10^3 ton	97	98	102	154	182	166	186	162.4
Bread	10^3 ton	20.4	21	21	18	17	61	48	44.5
Cotton goods	10^6 m	88	50	31.9	45	58	45.9	23	24.2
Wool goods	10^3 m	259.5	132	126.5	164	-	-	167.2	157
Sugar	10^3 ton	10.8	7.8	4.2	3.9	2.2	1.5	0.2	0.1
Vegetable oil	10^3 ton	8.75	8.1	4.3	2.7	3.06	1.62	0.74	0.8

Source) UNDP(1993), *Afghanistan Rehabilitation Strategy: Action Plan for Immediate Rehabilitation Vol.3*

Table 3.1.10 Example of Production Facilities by Industry in the early 1990s

Industry	Region	Equipment	Note
cement	Baghlan	Ghori 1 cement factory	Established with the assistance from Czechoslovakia. The capacity is 126,000 tons. The estimated quantity of production in 1993 was 5,000 tons. There is an ore deposit of limestone in Baghlan.
	heart	Herat cement factory	The planned capacity is 210,000 ton. Most of equipment has been destroyed. There is an ore deposit of limestone in Herat.
	Parwan	Jabal-e-Siraji cement factory	There is an ore deposit of limestone in Parwan.
marble	Kabul	Puli-i-Charkhi marble and onyx factory	Operated until 1992. Equipment was destroyed by war. There is an ore deposit of limestone in Kabul.
chemical fertilizer	Balkh	Mazar-i-Sharif fertilizer factory	Designed in the former USSR. It produces urea fertilizer using local supplies of natural gas.
metallurgy		Jangalak metallurgical factory	Established with the assistance from the former USSR. It has been kept operated after the cessation of USSR assistance.
sugar refining	Baghlan	Baghlan New Sugar Factory project	Participation of a private French firm. Construction is incomplete.
fruit processing	Kandahar	Kandahar fruit conserving factory	Started by import of the equipment from Czechoslovakia. Original capacity was 1,300 tons. The quantity of production in 1992 was 50 tons. It ceased to operate in 1993.
wheat milling・bakery	Kabul	Kabul Bread Combine	Established with the assistance from the former USSR.
woolen textiles	Kabul	Afghan Wool Industries	The capacity is 1 million meters. It ceased to operate in 1993 due to the damage of war and superannuation of machines.
cotton textiles	Kunduz	Spinzar cotton mill	The integrated cotton processing facility performing from ginning to processing. It was badly damaged by war.
		Bagrami textile mill	Established with the assistance from China.
	Kandahar	Kandahar textile factory	The capacity is 40 million meters of textiles and 10,000 tons of yarn.
	heart	Herat textile factory	Damaged by war, and inactive.
	Baghlan	Pul-i-Khumri textile factory	The oldest textile factory, dating back to 1942.
	Kapisa	Gulbahar textile factory	The largest textile factory in Afghanistan. The total capacity of 50 million meters. The quantity of production was 7 million meters in 1992. The damage of war, superannuation of machines, and shortage of parts.

Source） UNDP (1993), Afghanistan Rehabilitation Strategy: Vol.3

It is desirable to carry out planning for the promotion of the revitalization of the light-industry sector, and mainly the following five departments. Item-1 should be given priority from the aspects of domestic supply of raw materials, the small initial investment required and the acquisition of production technology.

1) Intermediary goods relating to agriculture and reconstruction work:

   fertilizers, cement, bricks, pumps, farming tools, cotton threads, cotton cloths

2) Daily consumer goods:

   soap, matches, tableware, shoes, clothing, wine etc.

3) Processed agricultural products:

   food processing such as flour milling, livestock processing, leather goods, dried fruit etc.

4) Traditional handicrafts:

   handcrafted articles such as carpets

5) Marble and precious stones

As for exports, dried fruit, handcrafted articles such as carpets, and leather goods traditionally had the competitive edge and were valuable sources of foreign capital. There are, however, no other goods with export competitiveness, which suggests that the country should set its sights on domestic demand. And if it becomes possible in the future to develop natural resources within the country such as natural gas and minerals, growth in the mining and related industries through the introduction of foreign capital will be likely. Although expansion of supply capabilities is the top priority, like the agriculture sector, important tasks will be to the improve systems that support supply (infrastructure, industrial parks, finances for small-and-medium size corporations, training etc.) as well as systems that link supply and demand (distribution and markets) and official support for these fields will be indispensable. Strategies for the future development of the country should aim, based on such support, for industrialization exploiting the given conditions and features of the individual provinces.

3.1.4. Development of natural resources

When Afghanistan's political situation becomes stable in the medium- and long-term, it is possible that the country will develop its natural resources through the introduction of foreign capital, making them contribute not only to employment creation but to obtaining foreign capital too.

Natural gas reserves, shown in Table 3.1.11, are mainly located in the Jowzjan province along the border to the north including the cities of Jorqadug, Khowaja,

Gogedrdak and Yatimtaq.

As for coal, reserves of 73 million tons have been confirmed in the regions of which the main cities are Herat and Badashkan.

Table 3.1.11 Natural Gas Reserves

Gas field	No. of wells／wells for production	Initial reserves (10^9 m^3)	Remaining reserves (10^9 m^3)
Khowaja Gogerdak	53/39	46.8	6.1
Jorqadaq	59/33	26.0	12.2
Yatimtaq	26/6	5.9	
Khawaja Bulan	9/-	2.5	
Boshikord & Juma		21/-	27.4
Jangal Kalan	1/-	15.0（est.）	
Chighchi	1/-		

Source） UNDP(1993), *Afghanistan Rehabilitation Strategy: Action Plan for Immediate Rehabilitation Vol.3*

(1) Gas pipelines

In May 2002, the heads of state of the three countries involved in a plan for building a natural gas pipeline running from Turkmenistan to Pakistan—Chairman of the Interim Administration of Afghanistan, President Nyazof of Turkmenistan and President Musharaf of Pakistan—signed a memorandum for its construction in Islamabad. The three countries have also decided to set up three work panels regarding natural gas, roads and railways, and to establish trade and economic cooperation. The pipeline is set to run from Dauratabad in southern Turkmenistan through southwestern Afghanistan to Guwadaru Port of the south Pakistan, covering a distance of around 1,400 kilometers. The total cost is estimated at 2.5 billion dollars (309 billion yen). An extension plan from Pakistan to India has also been developed. It is said that Afghanistan and Pakistan are likely to receive annual usage charges of 500 million dollars too.

(2) Contribution to the revitalization of the economy

As has been mentioned above, progress has been made for building the pipeline, with the three countries concerned having signed a memorandum and the pipeline will make a certain contribution to the country's reconstruction with its usage charges and so on. This, however, does not lead us to expect large-scale development of its domestic natural gas and petroleum industries. For the time being, Afghanistan will depend on individual development projects funded by foreign capital investment.

In any case, to promote development of natural resources, developing transportation infrastructure and distribution systems which will be the basis of the development is

most important and the environment for the development has to be improved by improving transportation routes within the country as well as to neighboring countries, which will be discussed below.

(3) Supply of raw materials for creating materials related to the reconstruction work

In the preceding paragraph, we described the importance of building a system that will enable Afghanistan to supply construction materials such as cement and bricks from within. The prerequisite for this is the mining of limestone and clay as the raw materials for such products. Considering the possibility to resume the mining of these natural resources and securing transportation routes to cement and brick factories will be an urgent task.

Table 3.1.12 shows the distribution of reserves of those materials.

Table 3.1.12 Distribution of Reserves of the Materials for Cement and Bricks

Minerals	Use	Area	Field / Reserves
Limestone, Marl	Cement	Badakhshan	Jamarchi Bolo quarry
Limestone, Dolomite	Cement	Badakhshan	Sabz limestone quarry Estimated reserve: 0.5 bil. ton
Limestone	Cement	Badakhshan	Bakunvij limestone quarry
Limestone	Cement	Herat	Benosh Darrah limestone quarry Estimated reserve: 12 bil. ton
Limestone	Cement	Herat	Darra-i-Chartagh limestone quarry Estimated reserve: 1 bil. ton
Limestone	Cement	Herat	Rod-i-Sanjur deposit
Limestone	Cement	Baghlan	Rul-i-Khumry limestone deposit
Marble	Cement	Parwan	Jabel-us-Saraj marble deposit
Clays	Brick	Herat	Karukh clay deposit
Clays	Brick	Herat	Malumat clay deposit
Clays	Cement	Baghlan	Surkhab clay deposit
Clays	Drilling mud	Baghlan	Kaukpar clay deposit
Clays	Brick, roof tile	Samanghan	Dahane-Tor clay deposit
Clays	Drilling mud, molding	Samanghan	Shabashak clay deposit

Source）ESCAP, United Nations (1995), *Geology and Mineral Resources of Afghanistan*

3.1.5. Transit Trade

Afghanistan is surrounded by Iran, Central Asia and Pakistan, and these surrounding areas have a total population of 290 million, suggesting the country's large potential for economic development in the long term by developing trade within the region.

Afghanistan's transit trade is conducted mainly with Pakistan and Iran using trucks. To revitalize trade, it is important to improve the transportation infrastructure, or in

other words, the roads. The first roads, which need to be improved for this purpose, are the routes from the major cities along the border to neighboring countries. Other important roads are routes that link major cities within the country including the Ring Road as the Asian Highway. Their rehabilitation and improvement is essential, since this will have a direct impact on the vitalization of the regional trade.

Further, if village roads within the country are improved in such a way as to be connected with the major key roads linking cities within and without the country, it will be possible to transport surplus agricultural produce and mineral resources from areas of agricultural communities, leading to higher incomes in these areas.

3.2 Improvement of Infrastructure

3.2.1 Basic Concept

Of the five priority fields indicated in National Development Framework (9) concerning the improvement of the country's infrastructure, we will here focus upon improvement policies for "transportation infrastructure," "electric power" and "urban potable water," which have been allocated largest reconstruction funds in the Preliminary Needs Assessment by the WB, ADB and UNDP (10).

The order of priority in improving the infrastructure should be as follows.

(1) Improvement of the capital Kabul's infrastructure

To reconstruct Afghanistan as a unified nation, improvement of the capital Kabul's infrastructure should be the first priority.

Since Kabul's existing infrastructure is remarkably large when compared with those of other cities in the country, improvement of this existing infrastructure should be conducted first.

In terms of the population including returning refugees, the population of Kabul and its surrounding areas is overwhelmingly larger than those of other areas. Provision of jobs due to the improvement of the capital's infrastructure will also contribute greatly to the improvement of the living standards of the nation.

(2) Improvement of the "Crescent Axis"

The next priority should be the improvement of the infrastructure of the principal cities that form the "Crescent Axis," including Mazar-i-Sharif, Ghazni, Kandahar and Herat.

(3) Improvement of access to neighboring countries with the aim of forming an "International Corridor Nation"

The third priority should be to restore the functions of Afghanistan as an "International Corridor Nation" by improving access to neighboring countries from the major cities stated above.

3.2.2 Transportation Infrastructure

(1) Basic policies for improving the main transportation systems

Currently, roads are the largest main transportation system of Afghanistan. Air services are provided for transportation between cities far away. Railroads and ferry boats operate, albeit partially, in the country. Plans for improving these main transportation systems should be made in accordance with the basic concept as described above.

Specifically, the roads and airport of the capital Kabul should be improved first and the next task should be improvement of the part of the Ring Road connecting major cities in the provinces, which forms the "Crescent Axis". After that, Afghanistan should be developed as an "International Corridor Nation" by improving and building roads and major airports in the provinces that connect these major cities and neighboring countries.

Based on the review of the status, measures for improving the main transportation systems should be as follows.

a) Short-term measures

- Top priority should be improvement of the roads within Kabul and roads connecting major cities on the "Crescent Axis" (Kabul, Jalalabad, Mazar-i-Sharif, Kandahar and Herat). Securing of the necessary improvement and extensions of these roads as soon as possible should take precedence over securing road specifications.
- In order to smoothly receive international aid, improvement of Kabul Airport should be given priority.
- In implementing improvement, sufficient care should be taken in terms of the following points.
  - Improvement of the system for placing orders for restoration work and of the government's order-placing capacity
  - Development of a construction industry in Afghanistan

b) Mid-term measures

- Main roads, airports, railways and water transportation should be restored to reach the level of the 1970s.
- To strengthen the functions of Afghanistan as an "International Corridor Nation", priority should be given to the improvement of the roads that connect cities near its border and neighboring countries
- Improvement should be implemented so as to foster Afghan engineers. Improvement plans should incorporate establishment of training centers and

on-the-job training.

(3) Priorities in the basic measures

a) Short-term measures (Figure 3.2.1)

- General
  - Improvement of the system for placing orders for restoration work and of the government's order-placing capacity
  - Development of a construction industry in Afghanistan
- Roads
  - The total length of the roads improved and extended should be some 1,800 kilometers, as shown in Table 3.1.1
  - Land sufficiently wide for road tracks that will meet the requisites of future planning for roads should be secured
  - At this stage, however, both road base work and surfacing work should be conducted so that simplified pavement will be realized for only lanes that will be needed for the time being.
  - Bridges should, in principle, be simple-assembly bridges such as Bailey bridges.
- Airports
  - Kabul Airport should be improved, mainly in terms of facilities such as the runway, guide roads and guidance lights so that an international level of safety will be secured.
- At this stage, improvement planning should not cover railways and ferries.

Table 3.2.1 Short-term Targets for Improvement

Item	Role	Amount	Target for 2005	Cost est. (US$ mil.)
Route A-1	Domestic Transport	1,300km	- blacktop necessary lanes - apply Bailey bridge	105
Route A-76 (to Mazari Sharif)	ditto	500km	- ditto	38
Kabul Airport	International Transport	1	- achieve international safety standards	5
Total				148

b) Medium and long term measures

- The main transportation systems of Afghanistan should be restored to the levels of the 1970s as the first step.
- Considering the country's location and its past development, priority should be given to the improvement of the transportation network with neighboring countries so that the country will take a position as an "*International Corridor Nation*."
- Considering the roles the main transportation systems have been playing, roads should be the primary main transportation system, with air services complementing them, which will link major cities as a long-distance transportation system.
- Railroads and ferries, which occupy small part in the country's transportation system, should be improved to bring about their good operation, with a view to developing provincial areas.
- Improvement should be implemented so as to foster Afghan engineers. Improvement plans should incorporate establishment of training centers and on-the-job training.
- Table 3.2.2 shows an overview of medium- and long-term improvement of the main transportation systems.

Table 3.2.2 Medium- and Long-term Targets for Improvement

Item	Role	Amount	Target for 2010	Cost est. (US$ mil.)
Ring road	Domestic transport	2,360km	- apply Asia Highway Structural Class II	959
International road	International transport	1,340km	- ditto	532
Central road	Domestic transport	810km	- ditto	403
Primary airports	International connection	8	- install major facilities - prepare navigator and rescue systems	40
Secondary airports	Domestic connection	6	- ditto	30
Railway	Rural development	25km	- resume facilities for use	5
Ferry	Rural development	3	- ditto	5
Total				1,974

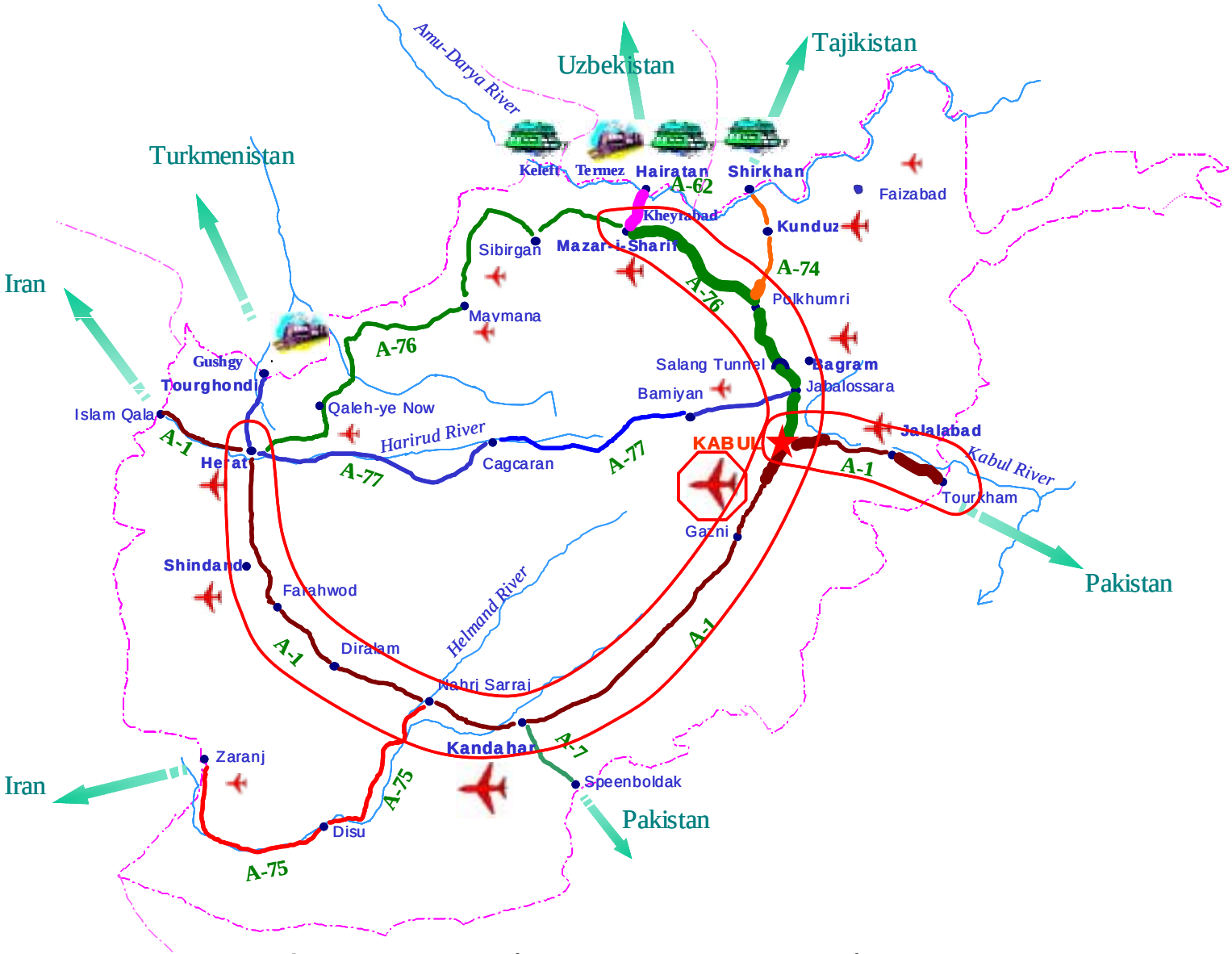


Figure 3.2.1 Short-Term Measures for Improving Transportation Infrastructure

3.2.3 Electric Power

(1) State of electric power facilities

The annual per capita power generation of Afghanistan (including imported electric power) has fallen from 60 kWh in 1980 to 20 kWh in 2000. When compared with the figures of Pakistan and Iran, it was one third of that of Pakistan and one ninth of that of Iran in 1980, while one twentieth of that of Pakistan and one eightieth of that of Iran in 2000, indicating an increased gap from the two countries (Table 3.2.3). Afghanistan's figures are noticeably low even when compared with those of Bangladesh (98 kWh / capita) and Myanmar (100 kWh / capita), which are the poorest countries in Asia.

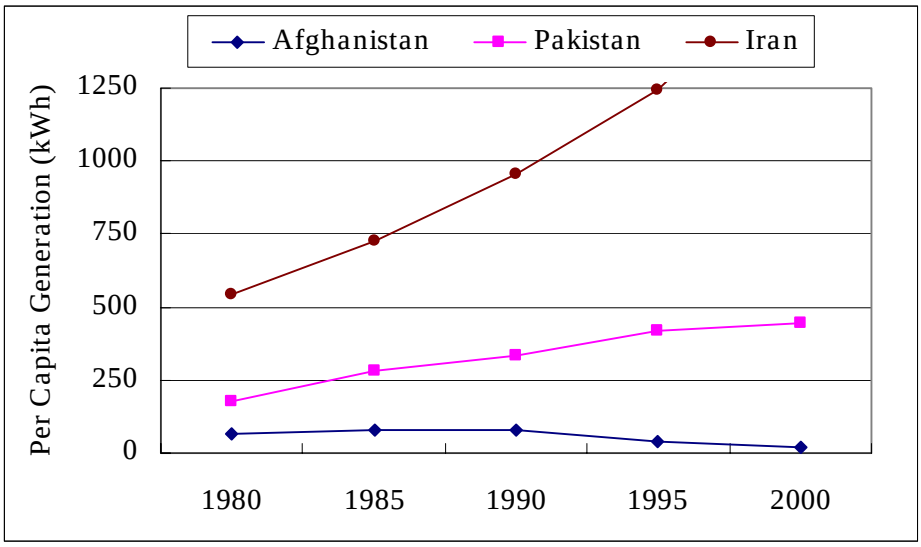


Figure 3.2.3 Annual Per Capita Power Generation

Source: Energy Information Administration, US Department of Energy
UN Population Division, *World Population Prospects: The 2000 Revision*

The decrease in Afghanistan's annual per capita power generation is due to stagnation in power development and decreased use of the existing power facilities. The total electric power generated in the country in 2000 was around 490 MW (hydroelectric: 290 MW; thermal: 200 MW) and the quantity of power generation facilities and the structure of power resources have shown little change since the late 1980s.

Plant utilization factors of the existing generation facilities decreased dramatically from around 25% in the 1980s to around 10% in 2000 (Table 3.2.4). Possible causes for this are overage facilities, decrease in power generated due to poor maintenance or shortage of fuel (drought, decreased supply of gas). However, seeing that the use of the existing facilities fell suddenly and continued to decline gradually after that, we could presume that the civil war had fatal damage on large generation facilities and the responsible body has been continuing to lose its ability to operate and maintain

generating facilities. Incidentally, a report says that in the Central Eastern Area where generating facilities are concentrated, power supply has fallen to around 40 MW (13%) against the facilities' potential of 300 MW. Neighboring countries Pakistan and Iran secure an average plant utilization factor of more than 40% for their existing generation facilities, leaving Afghanistan lagging far behind in this regard.

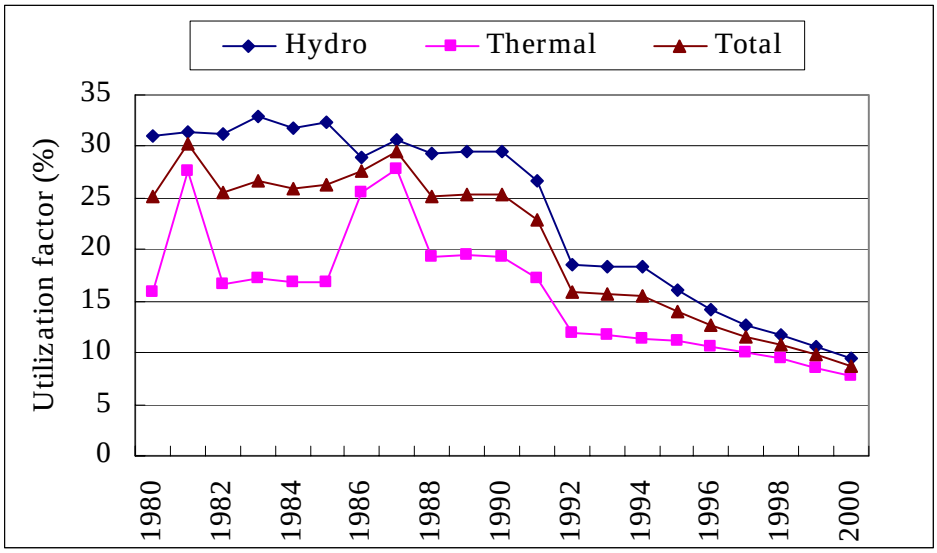


Table 3.2.4 Changes in the Usage Rate of Generating Facilities by Power Resource
Source: Energy Information Administration, US Department of Energy

(2) Target of power supply

The annual power generation per capita is set as an indicator of the reconstruction and make it the medium- and long-term target to raise it to a level not far off those of neighboring countries. Specifically, the short-term target for improvement of electric power infrastructure should be to bring it back to the pre-war level (60 kWh / capita) and hold it as the medium- and long-term target to improve it to the level of Pakistan in 1990 (300 kWh / capita).

(3) Basic measures

Both short-term and medium- and long-term measures should be identified for developing the electric power infrastructure of the country. Short-term measures are for obtaining results as soon as possible and medium- and long-term measures are aimed at planned improvement of the power infrastructure based on a sure and steady implementation of measures.

a) Short-term measures

- Rehabilitation of the existing facilities, mainly in Kabul
- Restoration of the existing facilities' pre-war potential in the short term by

giving priority to the rehabilitation of overage or damaged existing facilities.

- Improvement of the usage rate of generating facilities
- Improvement of the plant utilization factors of generating facilities and raise it to the levels of neighboring countries by increasing the abilities of the body that is concerned with the maintenance of power facilities and by securing funds for purchasing spare parts.
- Securing of power supply for the cities forming the" Crescent Axis".
- In the major cities near the border, the surge in demand caused by the reconstruction work should be dealt with by expanding import of electric power from neighboring countries.

b) Medium and long term measures

In the medium- and long-term, development of an efficient and effective power infrastructure should be promoted by building gas pipelines and transmission lines along the Ring Road, which forms the "Crescent Axis", and by strategically combining this with the development of power plants.

- An increase of the self-sufficiency rate of primary energy should be promoted by developing domestic natural resources such as natural gas and coals, of which the reserves are located mainly in the Northern Area. Export of energy and electric power should be considered in the long-term.
- Low-cost and sufficient power supply should be aimed for by developing electric power sources that use domestic natural resources as fuel. Outflow of foreign capital from the country should be reduced by substituting new power sources one by one for electric power imported.
- Transmission lines should be improved and developed so that national confidence in power supply will be developed and electric power can be provided for areas for which it is not currently available.

(4) Priorities in the basic measures

Table 3.2.3 shows the numbers of generating facilities of the individual areas that need to be developed by 2005 and 2010. The estimates are based on the following assumptions.

- All the existing facilities will re-attain their specified generating potential, by the implementation of short-term measures.
- The plant utilization factor of generating facilities will be improved to the pre-war level of 30% by 2005 and to the 40% level of Pakistan and Iran by 2010.

- The same amount of power generation per capita will be set for cities and agricultural communities.

Table 3.2.3 Demand and Supply of Electric Power by Area

Area	Major City	Existing Output Capacity (MW)	2005 (60kWh / capita)			2010 (300kWh / capita)		
			Pop. (10^3)	Supply Shortage		Pop. (10^3)	Supply Shortage	
				Energy* (GWh)	Capacity* (MW)		Energy* (GWh)	Capacity* (MW)
East Central	Kabul	305	7,976	-323	-123	9,340	1,733	495
Eastern	Jalal Abad	12	3,830	198	75	4,772	1,389	396
North Eastern	Fayz Abad	0	703	41	16	814	243	69
Northern	Mazari Sharif	10	6,822	384	146	7,987	2,362	674
Western	Herat	1	3,150	188	71	4,004	1,199	342
Southern	Kandahar	46	3,262	74	28	3,889	1,004	287
Central	Bamyan	0	420	3	1	502	151	43

* Supply shortages do not incorporate power purchases from neighboring countries.

a) Short-term measures

Although the power generation of the existing facilities of the Central East Area including the capital Kabul is by far the largest, only around 13% of the facilities' potential can be used for power supply. Considering the urgency and importance of securing the functions of the capital that will be the center stage of Afghanistan's politics and economy, rehabilitation of the power facilities of the East Central Area should be the first priority.

Recovery of the specified potential of the area's existing facilities will enable them to generate surplus power in 2005. Part of the power generated by hydroelectric power plants on the Kabul River should be allocated to the adjacent Eastern area (The existing transmission lines between Kabul and Jalalabad as well as the power distribution network within the Eastern area should be expanded, if necessary). The second priority of the short-term measures should be increased import of electric power for the use of the north and west, which are expected to witness a large shortage of facilities in 2005. These areas should take advantage of the fact that they are adjacent to Uzbekistan and Turkmenistan and position the import of electric power from those countries as the principal means of securing the numbers of power

facilities needed. Specific measures needed for this will be expansion of internationally connected transmission lines and conclusion or renewal of contracts for purchasing electric power.

In addition to such policies, sufficient measures should be taken to secure necessary funds and implement technology transfer in order to strengthen capability of organization in charge in terms of operation and maintenance of electric power facilities.

b) Medium- and long-term measures

A main issue in 2010 will be to secure power supply for the Northern Area that has such major cities as Mazar-i-Sharif and Kunduz and then for the East Central Area.

Domestic natural resources are concentrated in the Northern Area, such as gas fields in Jowzjan province and coal mines in Bagram province. The area should be developed as the country's base for energy supply. Development of natural resources and thermal power plants using them as fuel in the area should be actively promoted.

In the East Central Area, development of the potential hydroelectric power of the Kabul River is expected in the near future. The single water resource of the Kabul River, however, would not be enough to meet the increasing needs of the East Central Area and the Eastern Area, which is the catchment area of the river. On the other hand, the Southern Area will require development of power sources of around 300 MW by 2010 and the single development of potential hydroelectric power of the Helmand would not be enough to meet demand. Therefore, in the medium- and long-term, the electric power shortage of the two areas should be made up by building gas pipelines or transmission lines running from the Northern Area, which is the base for energy supply, through Kabul to Kandahar and by combining them with thermal power plants located near the demand centers, when necessary.

Although the Western Area will require power facilities of around 400 MW by 2010, the area is not endowed with water resources and is also far away from the gas fields and coal mines of the Northern Area, which, in the medium- and long-term, will force Afghanistan to purchase electricity from Turkmenistan and Iran and to aim to conclude a long-range power purchase agreement with good terms.

The three pillars of the medium- and long-term measures for promoting development of an efficient and effective electric power infrastructure should be, as described above, development of thermal plants in the Northern Area, development of the water resources of the Kabul River and the Helmand River and building of gas pipelines or trunk power lines from Mazar-i-Sharif through Kabul to Kandahar.

3.2.4 Water Supply in Urban Areas

(1) State of the supply of potable water in cities

The Central Statistic Office (4) estimated the total population of the 32 cities and towns including Kabul to be around 6.26 million in 1998. Cholera sweeps through the country almost every year and Afghanistan's under-five mortality rate ranks fourth in the world. These facts realistically attest to poor access to safe water and the low level of public hygiene of the country. An investigation by the WHO and UNICEF (11) says access to safe potable water in urban areas was 19% in 2000, with a third of this provided by tap water and two thirds by public water-supply systems such as pump stations. The access of neighboring countries Iran and Pakistan was 99% and 95% respectively, making Afghanistan a far-off follower in this field as well.

Table 3.2.4 shows the size of planned facilities for potable water in Afghanistan's urban areas. It says the total population of the major cities that is supposed to have access to potable water is around 2 million (54 liters per capita / day). The water supply network has collapsed, however, due to the lack of maintenance and the long years of war, and there is now very limited access to potable water.

Table 3.2.4 Existing Water Supply Facilities in Urban Areas

Province	City	Population in 1998	Date Built	Design Population[3] ①	Capacity (m^3 / day) ②	Unit Capacity (l / person / day)[4] ③=②／①
Kabul	Kabul	2,137,200	1953	1,500,000	83,000	55 (W)
Kandahar	Kandahar	412,500	1975	80,000	3,500	44 (W)
Herat	Herat	220,700	1975	80,000	5,500	69 (W)
Balkh	Mazri Sharif	196,200	1975	60,000	3,500	58 (W)
Nangarhar	Jalalabad	164,500	1975	50,000	4,000	80 (K,W)
Ghazni	Ghazni	1,010,600	1975	31,000	1,000	32 (W,S)
Laghman	Laghman		1976	25,000	500	20
Baghlan	Baghlan	30,800	1977	35,000	2,000	57
Parwan	Chari-Kar	14,500	1990	35,000	2,000	57
Badghis	Qala-Nau	35,200	1991	10,000	500	50 (W,S)
Kunduz	Khan-Nau		1991	50,000	1,000	20
Takhar	Taloqan	159,500	1990	10,000	500	50 (W,S)
Kunduz	Kunduz	223,100	1991	20,000	1,000	50 (W)
(Average)				1,986,000		54.4

Source) UNDP(1993), *Afghanistan Rehabilitation Strategy: Action Plan for Immediate Rehabilitation Vol.6*

[3] Population figures are for original design service capacity

[4] W=well field, S=spring, K=karez

Major cities of Afghanistan depend, except for some cases, on groundwater such as wells, springs and Karez systems as the source of water supply. For the last three years, however, Afghanistan has suffered its worst drought since 1971. Around 30% of the wells have run dry, forcing people to dig them deeper. Many wells have been abandoned. As the drought worsens, an increasing number of families have left their villages to live around cities. One report says some one million people have been forced to migrate within the country.

The pumping up of groundwater has decreased the country's groundwater basins and the levels of groundwater have been continuing to decline. Some farmers dig deep wells to irrigate their land, which, together with the drought, accelerates the decline of groundwater levels. This is seen mainly in the Southern, Western and Central Areas of the country.

Supply of potable water in cities is under the control of the Central Authority for Water Supply and Sanitation (CAWSS), an Afghan body. The CAWSS controls the potable water supply of twelve cities besides Kabul and has 31,500 connections in Kabul, 3,000 junctions in major cities (Kandahar, Herat and Mazar-i-Sharif) and around 1,000 connections in cities such as Ghazni.

International organs and NGOs play a very important part in water supply in most cities in Afghanistan. The key players include HABITAT, ICRC, CARE International and German Agro Action. HABITAT, for example, has formed 130 Community Forums in the 14 years since 1989 (One Forum covers an average of 15,000 people, with the total coverage at around 2 million people.) and has been implementing work with regard to water supply and drainage as well as digging wells through the Forums.

(2) Target of potable water supply in cities

The medium- and long-term target should be, after setting access to safe potable water as an indicator of reconstruction, to gradually improve the indicator to the levels of neighboring countries while taking into account the current levels of individual cities.

Specific targets to be achieved by 2010 with respect to access to safe potable water in the cities should be as follows.

- In Kabul, the current planned potable water access rate of 70% should be increased to 80%.
- In the other cities, the current planned potable water access rate should be increased by 20%.
- The target water supply amount should be 50 liters per capita per day.

Table 3.2.5 shows the numbers of water supply facilities by major city that need to be built by 2010, calculated on the basis of the basic conditions above. Population estimates of individual cities (provincial capitals), shown in 2.3.3, are used as the populations of the individual cities in 2010.

Table 3.2.5 Demand for Drinking Water by City in 2010

City	Population in 1998 (10^3)	Population in 2010 (10^3)	Target Access[5] (%)	Demand in 2010 (m^3/day)	Existing capability (m^3/day)	Necessary capacity (m^3/day)
Kabul	2,137	2,867	80	114,664	83,000	31,664
Mahmud Raqi	54	74	20	735		735
Chaharikar	145	196	20	1,961	2,000	(39)
Markazi Bihsud	98	134	20	1,344		1,344
Puli Alam	80	120	20	1,196		1,196
Ghazni	1,011	1,342	20	13,418	1,000	12,418
Gardez	60	158	20	1,578		1,578
Jalalabad	165	322	50	8,059	4,000	4,059
Mihtarlam	107	152	20	1,520		1,520
Asad Abad	53	94	20	937		937
Sharanh	49	69	20	688		688
Nuristan	47	62	20	621		621
Khost(Matun)	65	86	20	859		859
Fayz Abad	180	239	20	2,393		2,393
Taluquan	160	215	30	3,218	500	2,718
Baghlan	31	53	80	2,106	2,000	106
Kunduz	223	318	30	4,774	1,000	3,774
Aybak	75	100	20	996		996
Mazari Sharif	196	277	50	6,926	3,500	3,426
Shibirghan	135	183	20	1,827		1,827
Maymana	53	76	20	760		760
Sari Pul	130	172	20	1,716		1,716
Qalay-I-Naw	35	52	50	1,305	500	805
Herat	221	468	50	11,698	5,500	6,198
Farah	69	135	20	1,355		1,355
Chaghcharan	119	164	20	1,635		1,635
Zaranj	39	59	20	594		594
Lashkar Gah	76	118	20	1,183		1,183
Kandahar	413	584	40	11,678	3,500	8,178
Qalat	26	41	20	408		408
Tirin Kot	58	83	20	834		834
Bamyan	63	93	20	931		931
TOTAL	6,373	9,104		203,917		97,417

[5] Assumed 20% for cities of which existing capability is unknown.

(3) Specific measures for realizing targets

a) Restoration and expansion of water supply in cities

Potable water should in principle be provided through water pipes in cities. The first step should be to restore the functions of the existing facilities to secure potable water supply for around two million people. Any shortage of supply capability after rehabilitation work should be dealt with by expanding the existing facilities or building new facilities.

b) Balanced development of water supply facilities in cities

From the viewpoint of realizing balanced development of the individual cities, provincial cities that have not enjoyed them until now too should have water supply facilities built in succession.

c) Sustainable use of groundwater

Limited water resources can be a factor to restrict the sound development of cities. In particular, Kabul is expected to have an over concentration of population. To realize such use of groundwater as will enable sustainable development, long-term strategies for the use of groundwater should be considered and, based on the results, basic urban planning should be established.

d) Technology for digging wells and maintenance

Afghanistan's wells run dry, making additional digging a foreseen requisite in many cases. Since the building of new wells and their maintenance is a field that requires more participation by communities as the principal party than any other field, labor-intensive digging methods and maintenance skills should be diffused. This is also effective for employment creation. On the other hand, it will be also necessary to provide efficient well-digging technology that will suit the local conditions best as well as maintenance skills and equipment devised specifically for wells that run dry.

e) Use of river water

In cities that have access to river water, substituting surface water for part of groundwater in the long term should be considered. Such a project should be conducted jointly with irrigation water work.

f) Countermeasures for the pollution of groundwater

Daily waste water is discharged untreated, becoming a factor to pollute groundwater. Most illnesses originate in unhygienic water. Extremely simple and economical methods for treating daily waste water have been proposed recently. Maintenance of the quality of groundwater should be sought by prompting a large number of communities to use such devices. One example is the "Tilted multi-thin-layer soil method," which requires neither energy for treatment nor

maintenance and is said to be able to remove 80-90% of nitrogen and phosphorous. This device is also a water-recycling technology (the water treated can be used as intermediary water).

g) Strengthening of the organization of the CAWSS

The capability of performing projects of the CAWSS as the agency controlling urban potable water should be increased and the agency should be given budget and appropriate authority so that, as the organ that supports the securing of water supply in Afghanistan's cities, it can conduct policymaking and coordination of activities that will cover communities, international aid organs and NGOs.

h) Communities' participation as the principal party and cooperation with international aid organs and NGOs

In implementing restoration, expansion and maintenance of water supply in cities, policies should be established to encourage the participation of communities, including Community Forums, as the principal party, as well as to efficiently assist international and local NGOs.

i) Development of private companies that are concerned with potable water

Private companies that are concerned with potable water should be developed in provincial cities. They will sell hand pumps and their spare parts and provide technological guidance.

j) Policy measures for establishing potable water as an economic value

Policy measures should be developed and promoted that will make it possible to collect costs of water supply through water supply charges and taxes.

k) Education for the conservation of water resources and public hygiene

Education for the conservation of water resources and public hygiene should be conducted in communities. Education for children and women is especially important. NGOs will be able to play an important part to this end.

l) Technology for potable water

Since the existing potable water pipeline systems in urban areas are presumed to have high leakage rates, pipes made of a material with strong anti-leakage properties should be adopted.

3.3 Promotion of collaboration between Cities and Agricultural Communities

3.3.1 Autonomous development of cities and agricultural communities

Afghanistan has core cities with a certain amount of population along the Ring Road and roads accessing neighboring countries such as Ghazni, Kandahar, Kunduz and Mazar-i-Sharif. Kabul has the largest population, at around 2.3 million (estimate in 2000). It has, however, a dispersive area structure in which the population does not concentrate in the city, but rather agglomerations are also formed in rural agricultural communities. Such an area structure fits well the direction of the country's economic development in which agriculture and reconstruction work will play important parts for a certain period of time in the future. The country should try to realize balanced settlement of population in and around farming areas, which are widely dispersed across the country.

On the other hand, as most of returning refugees settle in major cities, population concentration in cities is expected to increase significantly. Thus, it is practical to place priority in reconstruction of major cities, which are along the Ring Road and function as gateways to neighboring countries. At the same time, rural roads connecting cities and agricultural communities are to be developed for enhancing their collaboration. Accordingly, cities are expected to lead regional development with these networks.

To realize such balanced development of cities and agricultural communities, contents and priorities of the work should be established in accordance with the character of individual areas. If simple and low-cost that do not use large construction machines and materials are adopted, it will be possible to implement the necessary development of roads only by securing large number of personnel, which will also contribute greatly to the creation of many jobs. Development of intra-area roads in the provinces should be conducted through such means.

Since the cities mentioned above, including Kabul, have a certain degree of population agglomeration, they are expected to have a stable population growth due to natural population increase. Since they are also bases for trade with neighboring countries and for transportation of materials, they will very likely witness a certain influx of population from other areas within the country. Attention must be paid to the fact that these cities always have such population growth pressure, and urban planning that allows for improvement of the environment and the accommodation of large populations needs to be promoted.

3.3.2 Development of the capital

It could be said that the capital Kabul is the only large city in Afghanistan. Kabul has a population of around 2.3 million (2000 estimate) and is expected to have a

population of around 3.4 million in 2010. Besides being the center stage of politics as a capital, and symbolizing the unification of a nation, it represents an important base for trade and transportation of materials, with its traffic infrastructure including Kabul Airport.

Kabul thus plays a very important role as the center of the politics and economy of Afghanistan, making it necessary to conduct urban planning so that it will have a framework in accordance with its status.

Kabul's various functions as the capital should be immediately recovered by restoring and improving its functions as a city, which have been damaged by war. Improvement should be made to its living conditions such as housing and hygiene facilities so that it can accept the large population influx expected, on a planned basis.

Considering the experience of Japan, which achieved post-war reconstruction and reconstruction of its capital, the most important task for the time being is to immediately implement investigations relating to urban planning and to lay out a long-term master plan for developing the capital, from the viewpoint of conducting planned and efficient development of the city infrastructure needed in Kabul.

3.3.3 Other important tasks

(1) Improvement of the living standards of the people

This vision has as its purpose to foresee a sustainable development of Afghanistan in the medium- and long-term as well as to describe strategies for reconstructing the country mainly in its economy. This has not given priorities, as the result, to work and measures in the field of daily lives, which are important tasks that should be addressed in the short term. It is needless to say that improvement of the living standards of individual Afghans is the most urgent and important task in the reconstruction of the country.

The tasks for improving the basic living standards of the people are various, including the securing of food for the time being, housing, medical care, hygiene and education. All of these fields should be improved as soon as possible through various reconstruction and aid work. In particular, indicators of living standards in the fields of medical care, hygiene and education, shown in Table 2.2.2, should be raised as soon as possible to the levels of neighboring countries.

(2) Disaster prevention

It is also an important task in the reconstruction of the country to improve the basic conditions in which the citizens can live safe daily lives. Afghanistan, like Japan, has undergone several large natural disasters, making it an essential need to promote

countermeasures against earthquakes and floods, which have caused suffering to many people in the country.

Earthquakes concentrate in the North East Area, making it necessary to strengthen the earthquake-resistance of important public facilities in these areas at the least. New facilities built in the future such as housing should be earthquake-resistant as much as possible. On the other hand, planned development should be promoted in cities such as Kabul where population and facilities concentrate, by securing open spaces such as places of refuge and by strengthening life lines.

As for floods, since it will be difficult to prevent them by building structures such as dikes, appropriate control of flood plains by public organs will be the most important countermeasure for the time being.

Efforts should be made to limit damage to a minimum by restricting public access to dangerous zones or announcing evacuation orders during the period when floods occur frequently as well as by implementing disaster education or disaster drills.

4. Plan for using the $4.5 billion in pledged aid

4.1. Basic Policy

A reasonable plan of the initial phase of reconstruction is to start from the conditions of the country from its state 23 years ago before the outbreak of civil war. Then, it is important in the reconstruction plan to consider political and economic changes in neighboring countries in the global context during the past two decades, including the end of the Cold War, the independence of neighboring countries from the former Soviet Union, economic changes in Afghan's neighbors including former Soviet republics as well as Pakistan and Iran, and economic globalization. A reconstruction plan should thus reflect these changes in modifying the restoration of the country from its state 23 years ago and secure Afghanistan's future autonomy. Another target to be pursued is the implementation of measures to allow hundreds of internally displaced Afghan people and refugees to return to their homeland, if they wish to do so, and to secure their livelihood.

If Afghanistan were to make effective achievements in reconstruction, it would have to avoid any more civil war. This will be the top priority for Afghanistan. If Afghanistan were to be successful, on a shift from the Interim Administration to a full-fledged administration, as an independent country achieving stable national management, appropriate governance by the central government is indispensable.

Thus, the central government should put its governance into full play, and support for this challenge may also be a top priority for the donor community.

4.2. Evaluation of $4.5 Billion in Pledged Aid

By the first half of 2002, international organizations and industrial countries pledged to provide a total of $4.5 billion in aid for Afghan reconstruction over 30 months. Given the fact that Afghanistan has limited domestic financial resources and is faicing difficulty in collecting taxes, Afghanistan will rely on the pledged foreign aid, for the time being, to implement reconstruction projects. Also, wage payment to government officers will have to be financed, at least partially, by the pledged aid.

Although Afghanistan's per capita GDP datum was not available, average per capita GNP estimates for the 1988-2000 period can be found in U.S. dollars for Afghanistan's neighbors. The lowest is $290 for Tajikistan, followed by $490 for Pakistan, $660 for Turkmenistan, $870 for Uzbekistan and $1,760 for Iran. Afghanistan's per capita GDP may naturally be conceived to be far lower than the least level for Tajikistan. Afghanistan is thus far below the poverty line of a dollar per day as defined by the World Bank. Given its population of about 22 million, the $4.5 billion in pledged aid means only $200 per person. Considering the 30 months' duration of the pledged aid, per capita aid for one year is only $80. In implementing reconstruction projects with

the pledged aid, the international community must recognize this fact.

In addition, job creation is an urgent issue. The least daily wage for an unskilled worker is estimated at about $2. Even when all of the $4.5 billion pledged aid for 30 months is used for that purpose, jobs created annually will total only 3.6 million.

With these facts, the $4.5 billion in pledged aid cannot be evaluated as sufficient for Afghanistan. If Afghanistan is required to use part of the limited aid for the reinforcement of its military forces to avoid any more civil war, funds available for reconstruction projects are less than the $4.5 billion. The military buildup could be replaced with international pressure that can suppress military cliques at various points in Afghanistan. In this respect, we expect efforts by the United Nations and military powers. U.S. forces are reportedly expected to remain stationed in Afghanistan for several years. It is our wish that these expectations are realized.

Refugees and internally displaced Afghan people have already begun returning home. The Kabul Office of the United National High Commissioner for Refugees reported that the number of Afghan refugees returning home in the first seven months of this year reached 1.47 million, against an earlier annual estimate of 1.2 million. Furthermore, the Afghan population is expected to post an explosive increase in the future. Given this trend of abrupt population increase, the living standard of Afghan people could have difficulties in improving or being sustained unless reconstruction projects are implemented prudently.

The World Bank and the Asian Development Bank are engaged mainly in providing loan aid. But even these international organizations have mechanisms for grant aid. The $4.5 billion in pledged aid alone cannot be expected to make Afghanistan economically independent, however efficiently it is used. We suspect that ,even some of the reconstruction projects may generate income to the central government, Afghanistan is not in a position to be able to promise to repay the $4.5 billion in pledged aid for the 30 months, although its future conditions are uncertain. We believe that aid donors may have to treat the $4.5 billion aid as grant aid and take care to efficiently use aid from donor countries and international organizations including the World Bank and the ADB. In order to allow efficient use of aid funds, donors should allocate aid funds to projects that Afghanistan's Interim Administration considers as urgently required for reconstruction and development. Policy dialogues are important between aid donors and the Interim Administration. Aid donors should refrain from conditioning aid for non-urgent and unnecessarily high-grade projects.

After the $4.5 billion pledged aid is exhausted in the first 30 months, donors should consider whether to increase the loan portion of future aid or whether to treat most of future aid as grant aid.

4.3. Prioritization and Levels of Reconstruction Projects

It would be all right if all variety of projects are implemented simultaneously resulting in successful reconstruction in the first 30 months. However, the limited funds may force Afghanistan to prioritize projects and consider specific levels for their implementation. In reality, in order to allocate the fund to as many projects and sectors as possible, projects will have to be implemented at levels to meet minimum requirements. In terms of efficiently operating and maintaining the facilities after the completion, projects should not apply unnecessary high standards.

Everywhere in the world, food, clothing and housing are the most important for livelihood. Given Afghanistan had been a farming country before the war, the top priority for reconstruction is the achievement of food self-sufficiency. Reconstruction of agricultural infrastructure may thus be the most important.

Other high-priority sectors may include urban housing, development of key highways, urban water development, restoration of existing urban electricity and communications facilities, and reconstruction of facilities for communications between major cities.

We believe the reconstruction of agricultural infrastructure to be difficult in view of widely dispersed farming facilities and existing mines. Even transportation of funds in cash for reconstruction projects may be difficult. However, we believe that the food self-sufficiency is undoubtedly the top priority. As for agricultural infrastructure, irrigation and drainage facilities that had been working in the past will have to be restored promptly.

Housing is an urgent matter, given the war's destruction of houses and the return of many refugees from abroad. In Afghanistan, Kabul is far more populated than other cities. Population slips below 200,000 in every city along the Ring Road or access roads to neighboring countries. House destruction has been the most remarkable in urban regions and most refugees and internally displaced people are expected to settle in urban regions for the moment resulting in rapidly increasing city population.

For people willing to move within Afghanistan, its administration will have to give considerations to measures allowing them to settle in locations that they favor. Recent reports indicate an increasing number of international displaced minority groups and refugees. These people are also expected to settle in urban regions.

Based on these trends, priority in housing may have to be given to Kabul and cities along the crescent of the Ring Road. In order to avoid disordered urban sprawl seen in many cities in Japan and many Southeast Asian countries, and to prevent emergence of slum areas, urban development plans should be urgently mapped out before house construction in Kabul and in other major cities. Such urban development plans should secure, as an example, bypass roads to allow the Ring Road along the crescent first and full circle later, access roads to neighboring

countries and other major highways to be developed outside cities.

Roads subject to urgent restoration include the Ring Road, access roads to neighboring countries and natural resources, and links between highways and nearby communities. For prioritization of these roads, pre-war traffic statistics, as shown in Figure 2.1.1, may be useful. During the visit to Kabul of JSCE mission, the traffic from Kabul to Pakistan was measured, though very roughly. The traffic a day could be of the order of 2000. One half is heavy trucks and the rest is mostly passenger cars. It should also be considered that a part of highways are useful for transit trade.

In Afghanistan, electricity supply has been limited to urban regions and the overall house electrification rate has remained low. For urban residents, however, electricity is important not only for their living but also for their economic activities. Construction of new electricity facilities may take time. But restoration priority should be given to electricity supply facilities that were built in the past and can be restored at relatively low cost. Electricity supply facilities feature easier cash collection than other infrastructure. From the viewpoint of direct recovery of spent funds, higher priority could be placed on electricity facilities than other facilities when allocation of reconstruction funds is considered.

Cement is vital for implementing reconstruction projects. As demand of cement increases along with implementation of reconstruction projects, cement plant restoration must be given top priority. Fertilizers and farming appliances are required for expanding agricultural production and fuels are necessary for living. Fertilizer plants and fuel supply facilities may be able to recover funds spent on their restoration, as do electricity facilities and cement plants. In order to help avoid a decline in precious foreign reserves, Afghanistan should restore fertilizer plants as far as funding is available. Their restoration may also be given high priority.

Safe water supply is of the highest importance for urban residents. For the immediate future, a realistic way for Afghans in urban regions may be to depend on wells. In Kabul and other large cities where groundwater has already been polluted, residents could have to depend on deeper wells. In order to avoid further pollution of groundwater, Afghanistan should consider using simple, low-cost water purification systems that can be manufactured domestically, although their use in the cold winters in the country may be problematic.

As is the case with electricity facilities, new communication network and equipment construction may be difficult in Afghanistan. Worthy of consideration may be restoration of urban communications facilities that had been working and can be repaired. In Kabul, communications facilities must be made available at least for government agencies, aid organizations and foreign diplomatic establishments. Only radio communications are conceivable between major cities. Low-cost mass-produced instruments, such as amateur radios, may be used with simple modification for restoring minimum communications between major cities. Facilities for

communications between remote points may have to be limited to official use for the immediate future. Private use may be limited to time zones where capacity is affordable. Development of mobile phone system can be a realistic solition for cities.

Same with agricultural industry, reconstruction of light industry is also a priority area. Immediate restoration targets include production facilities for daily necessities and for exports that had been manufactured in Afghanistan. These include bricks, pumps, carpets, cotton products, marble and precious stones. Their restoration may contribute to promoting efficient and speedy reconstruction as well as to creating jobs and saving foreign currency consumption. On the other hand, prudent consideration should be given to production of internationally uncompetitive products.

4.4. Job Creation and Reconstruction Methods

As important and urgent as infrastructure development may be creation of jobs for many people who have no income or have living difficulties. The most desirable way to implement infrastructure restoration and job creation with limited funds is to take advantage of labor-intensive methods and local know-how to restore infrastructure. It is desirable to use small construction machines and large amounts of human labor, rather than large machines, for reconstruction when even possible. Many products and materials may have to be procured from abroad for restoring damaged facilities for electricity, communications, and cement and fertilizer production. But the products and materials available for local procurement should be used as much as possible. We must take care to minimize the funds flowing out of Afghanistan.

In implementing infrastructure restoration, we have to consider the skills of Afghan workers. Even though the war continued for 23 years, Afghan workers were unable to engage in production activities other than farming only when the Taliban regime governed Afghanistan for the last decade of the war period. Afghanistan has a 2000-year history. Over this long history, it has gradually developed farmland along with irrigation and drainage facilities other than large ones. Thus, older people may still maintain traditional skills and these people should lead initial reconstruction with local methods. The view of a pile of reasonably large scale construction machinery at the parking and mmaintenance yerd of the Ministry of Construction and the talk with a few people who were then convinced the member of the JSCE mission to Kabul that there must be sufficient enough operations of theses machines together with technicians who can carry out urgently neede infrastructure construction work of an appropriate technical level.

As for agricultural infrastructure development, Afghans may be able to use their own know-how to restore facilities other than large ones that had been developed with foreign aid. Earthquakes are frequent in Afghanistan, especially in its northeastern part with significant damages to houses. Traditional houses made of sun-dried bricks are clearly vulnerable to earthquakes. However, since applying an

earthquake-resistant design to all the houses are not practical, feasible methods may be limited to reinforcement of brick houses with re-bars. An earthquake-resitant design is to be applied only to newly constructed facilities with important functions.

Traffic on major highways before the war had been limited to less than 1,000 vehicles per day. Given the limited funds and traffic, we should lead Afghanistan to use its own know-how as much as possible for reconstruction of roads including the Ring Road as major highways. Simple asphalt should be adopted for pavement except s small portion of major highways where a large member of heavy traffics are anticipated in order to use limited funds efficiently.

Some road construction projects have reportedly been invited for international tenders. The roads in question may be for transportation of materials for reconstruction and these projects may be beyond local engineering capability. Given the limited aid, however, road reconstruction planners should refrain from adopting road construction methods that must be invited for international tenders, as far as possible. Instead, they should consider methods that can be implemented by local enterprises employing Afghan engineers as well as low-cost engineers in neighboring countries. Some forms of technical assistance should be designed for developing private enterprises in the course of reconstruction. We should urgently consider developing private enterprises by providing funds and construction machines to local NGOs and/or the Community Forum that will be discussed later.

Industrially developed nations have many enterprises that take advantage of official aid to make profit. These firms play a key role in the development of developing countries and their business is justifiable. However, we want these firms to refrain from attempting to make profit from reconstruction projects in Afghanistan that has been subjected to massive pains.

We reiterate that it is most desirable to have reconstruction projects in Afghanistan lead to creation of jobs for jobless and poor people. On the other hand, Afghanistan still needs considerable time and funds for enabling local government to effectively function under the control of the central government. In this respect, capable NGOs, international organizations and the like should take the leadership in implementing reconstruction projects. The United Nations Center for Human Settlements, known as Habitat, has sent nearly 200 officials of its 580-member staff to Afghanistan and has successfully organized more than 130 Community Forums covering 10% of the Afghan population. An important point is that these Community Forums are accepted by Jirga regional conferences. We propose to consider taking advantage of these Community Forums for implementing reconstruction projects.

4.5. Proposals for Some Specific Measures

Although it deviates from the area of expertise of the JSCE, we would like to discuss

the social sector. Given the absence of education during the 23 years of war, including a decade under the Taliban regime, the resumption of education at any level is undoubtedly an urgent measure. Textbooks for education are lacking and the number of qualified teachers is limited. But former teachers and senior knowledge-rich people should be employed to launch all forms of education including primary education in small private schools. Education may lead to job creation to some extent. In communities where education facilities have been damaged and become unavailable for use, facilities may be built for both education and regional community activities. The JSCE mission observed that afore mentioned Community Forums are complimenting primary and secondary educations as well as skill training. An attention has to be paid to Community Forum as efficient organizations for education and skill traning. This is a high-priority measure.

In many Southeast Asian countries, tourism is in the top three foreign capital earners. Afghanistan's tourism cannot be expected to become a leading foreign currency earner. But we expect that foreign government and aid officials, businesspersonnel, and reporters will visit Kabul continuously. Japan's now-defunct Overseas Economic Cooperation Fund provided loans for a hotel construction project in Dhaka, Bangladesh. More than 30 years after its completion, this hotel is still contributing to Bangladesh's foreign capital income. In Kabul, construction of hotels that can provide international-level services may be worthy of consideration. The sooner they are constructed, the better. In order to increase the numbers of foreign visitors, Afghanistan will have to improve Kabul Airport to meet minimum international safety standards.

4.6. Conclusion

In preparation for discussion on reconstruction with the faculty members of Kabul University, this chapter described the view of the JSCE Special Committee on how to use the $4.5 billion in pledged aid. In describing infrastructure development, we have given consideration to minimizing costs, so that limited funds can be allocated for as many projects of sectors outside infrastructure sectors as possible. This is because we hope that funds for the social sector would be increased if it is within the scope of the pledged aid to do so. As refugees and internally displaced Afghan people continue to return to their homeland, their living standard is reported to be growing more severe.

We have set down various specifics. Finally, however, we would like to emphasize that the pledged aid should be used promptly to facilitate job creation.

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The Chairman and Members of Special Committee

for Afghan Reconstruction Vision, JSCE

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Introduction of Japan Society of Civil Engineers

Having a long history, Japan Society of Civil Engineers (JSCE) is a specialist group constituted from all domains relating to the civil engineering field and composed of about 39,000 members of scholars, officials, and engineers from private companies.

The history of JSCE goes back to the establishment of The Japan Federation of Engineering Societies (JFES). Aiming for the development of engineering through cooperation and exchange of information among engineers, the civil engineers mainly took the lead in establishing the JFES in November 1879. Then the tendency for a specialization in a specific field of study became remarkable with industrial development since 1885. Accordingly, societies of such fields of specialty like mining, architecture, electricity, shipbuilding, machinery, and industrial chemistry were founded one after the other, and become independent from the JFES. Even in a situation like this, civil engineers dared not to leave JFES, advocating that civil engineering should integrate all other engineering specialties. It was not until November, 1914 the JSCE was finally founded.

JSCE has indeed made a great contribution to the amelioration of the quality of civil life, taking a multidisciplinary approach toward an amenity of the environment, a guaranty of public safety, and a promotion of culture and welfare through a wide range of activities in cooperation with the relative academic association.

Until now, in our country, there have been very few examples of which an academic association consisting of a specialist group's actively gave international cooperation. We hope that this activity by the JSCE serves as a touchstone of “visible international assistance” through a new-type of NGO consisting of experts, and becomes an opportunity to extend the place of the future actions of academic associations of Japan.

Appendix 1　Confirmation Letter from JSCE to Kabul University

JAPAN SOCIETY OF CIVIL ENGINEERS

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October 1, 2002

Minister of Kabul University

Prof. Akbar Popal

Kabul University

Kabul, Afghanistan

Dear Professor. Akbar Popal

I would like to thank you and your colleagues for the corporation and hospitality extended to us during our visit to Afghanistan between September 18 and 24. I am happy to record hereunder our understanding about what we discussed in the meetings between Kabul University and Japan Society of Civil Engineers (JSCE, hereafter).

1. Kabul University reviewed the report titled "Reconstruction Vision of Afghanistan" prepared by the Special Committee for Afghanistan Reconstruction Vision of JSCE and expressed the following comments:

   - Kabul University agrees with the basic premise used by the report that the prevalence of peace is the prerequisite for the reconstruction of the country and the enhancement of security through establishing a strong national military force and complete disarmament of local military cliques is vital.

   - Kabul University shares the view with the report that other high priority areas include reconstruction of infrastructure such as transportation, irrigation and power supply, self-sustenance of food and balanced development of urban and rural areas.

   - Kabul University added that other utmost priority areas at present are housing, mine clearance, and revival of light and small industry.

Priority industry includes mineral resources, food preservation and trade and transportation. Creation of jobs, especially outside of Kabul, and education are also essential.

- Kabul University also indicated the importance of the mobilization of Afghan experts and reduction of the reliance on foreign NGOs.

2. JSCE suggested that it would revise the report based on the above comments and publish the revised version on the web by referring it as authored by JSCE in consultation with Kabul University. Kabul University agreed to it.

3. JSCE suggested that it would send the revised version to Kabul University for further review. Professor Noor Mohammad Niaz and Mr. Yukimasa Fukuda were identified as the focal contact persons for further communications between the two parties.

4. Kabul University agreed that it would review the revised report and consider if it is appropriate to become the coauthor of revised report.

Again, thank you for the support and cooperation provided by you and your colleagues at Kabul University to our mission from JSCE, and we look forward to continuing our partnership with you in the revision of the important document, "Afghan Reconstruction Vision."

Sincerely,

Chairman, The Special Committee for Afghan Reconstruction Vision
Japan Society of Civil Engineers

Appendix 2 Afghanistan : Urban Population Estimates

	1974 ADS	1979 ADS Projected / CSO	1990 Projection (plus refugees) 2002 MUDH
Kabul plus	645,648	726,935 / 913,164	1,787,896 (281,504) Not Stated but reported up to 3,000,000 in Kabul
Khandahar plus	171,773	193,399 / 183,433	155,936 = 309,319 (69,424) (93,582) 700,000 > 900,000
Heart plus	123,113	138,613 140,323	66,694 = 176,829 (100,000) (264,915) 600,000 > 1,000,000
Mazar-I-Sharif plus	81,959	90,278 103,372	112,354 = 138,227 (4381) (11,287) 700,000 > 1,000,000
Jalalabad	34,006 Munic	38,288 Summer	12,146 = 128,159 (59,099) (105,017)

Note) Afghan Demographic Studies (ADS) 1979 figures are five year projections from 1974 at 2.4% / year. CSO 1979 figures were derived independently from ADS and CSO, projected them at 2.4% / year and subtracted out the best estimates in 1990 of refugees. Kabul estimated separately with best information available. For some urban area, there are boundary problems where one source used the Nahya boundaries and the others used District boundaries. Jalalabad has a lower population in summer.

Ministry of Urban Development and Housing (MUDH) estimated were presented in The International Conference on Kabul and the National Urban Vision, Sept.21 2002.

(a:/UrbanPops blue disk 2002) tbeighmy@rcn.com revised 9/21/02 with MUDH estimates

Appendix 3 JSCE Mission to Afghanistan

1. Date:

From September 17th, 2002 to September 25th, 2002

2. Members:

Prof. Nishino (Chairman of the Committee)
Prof. Tsunokawa (Secretary General)
Prof. Endo
Mr. Noda
Mr. Fukuda
Mr. Fukazawa
Mr. Dachiku
Mr. Amano

3. Activities:

Sept. 17th	Leave Tokyo for Kabul
Sept. 18th	Courtesy Call on Ambassador of Japan
	Meeting with JICA
Sept. 19th	Investigation of Infrastructures in Kabul
	Investigation into Community Forums
	Meeting with Kabul University
Sept. 20th	Investigation of Infrastructures in Kabul
	Meeting with UN Habitat
Sept. 21st	International Conference on Kabul & the National Urban Vision
Sept. 22nd	International Conference
	UNAMA Press Conference
Sept. 23rd	International
	Presentation of "Afghanistan Reconstruction Vision"
Sept. 24th	Leave Kabul for Tokyo

4. Attachment:

Photos