

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
MINISTRY OF FINANCE, MONGOLIA

THE STUDY ON THE SUPPORT
FOR THE ECONOMIC TRANSITION AND
DEVELOPMENT IN MONGOLIA

FINAL REPORT
OF THE
PUBLIC INVESTMENT PROGRAM

March 2000

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Abbreviations and Acronyms

ADB	Asian Development Bank	mn	Million
bn Tog	Billion Togrog	mn.kwh	Million kilowatt per hour
BP	Balance of Payment	MOAI	Ministry of Agriculture and Industry
c/lb	cent per Libra	MOF	Ministry of Finance
CA	Capital Assistance	MOID	Ministry of Infrastructure Development
CAB	Current Account Balance	MTS	Medium Term Strategy
CES	Central Energy System	NGO	Non Governmental Organizations
EA	Energy Authority	NIR	Net International Reserves
EES	Eastem Energy System	NSO	National Statistical Office of Mongolia
ESAF	Enhanced Structural Adjustment Facility	ODA	Official Development Assistance
FDI	Foreign Direct Investment	OT	Official Transfers
FSU	Former Soviet Union	p.a.	per annum
G	Gega	PIP	Public Investment Program
GDP	Gross Domestic Product	PP	Power Plant
GNP	Gross National Product	PPP	Purchasing Power Parity
GOM	Government of Mongolia	Q	Quarter
IMF	International Monetary Fund	RCA	Revealed Comparative Advantage
ISIC	International Standard for all Industrial	t	ton
JICA	Japan International Cooperation Agency	TA	Technical Assistance
JV	Joint Venture	Tog	Togrog
KfW	Kreditanstalt fur Wiederaufbau (German Construction Bank)	TPES	Total Primary Energy Supply
kg	kilogram	UB	Ulaanbaatar City
kwh	kilowatt per hour	USAID	US Agency for International Development
lb	Libra	VAT	Value Added Tax
		WES	Western Energy System



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CURRENCY EQUIVALENTS

March 2000	Currency Equivalent
1,070 Tg	/USD 1.00
113.45 ¥	/USD 1.00

PREFACE

In response to a request from the Government of Mongolia, the Government of Japan agreed to conduct a Study on Medium Term Development Strategy and Medium Term Public Investment Program of Mongolia, and entrusted the study to the Japan International Cooperation Agency (JICA), under the title "Study on the Support for the Economic Transition and Development in Mongolia".

JICA organized a study team composed of Daiwa Institute of Research Ltd. and Nomura Research Institute, Ltd. The team headed by Mr. Hirohiko SEKIYA of Daiwa Institute of Research Ltd. visited Mongolia eight times from September 1998 to March 2000. In addition, JICA set up an advisory committee headed by Mr. Shinji Asanuma, Professor, Asian Tax & Public Policy Program, Hitotsubashi University, between September 1998 and March 2000, which examined the study from specialist and technical points of view.

The team held discussions with the officials concerned in the Ministry of Finance and other ministries, and developed database system essential to forming Public Investment Program. After returning to Japan, the team conducted further studies and compiled the final results found in this report.

I hope this report will contribute to establishing a proper system of forming Medium Term Development Strategy and Medium Term Public Investment Program. I also hope it enhances the friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned in the Ministry of Finance and other ministries concerned for their close cooperation throughout the study.

March 2000



Kimio Fujita

President

Japan International Cooperation Agency

March 2000

Mr. Kimio Fujita
President,
Japan International Cooperation Agency

Dear Mr. Fujita,

Letter of Transmittal

We, hereby, have the pleasure of submitting our report entitled "Medium Term Development Strategy" and "Medium Term Public Investment Program" for the "Study on the Support for the Economic Transition and Development in Mongolia". The report describes the results of the Study conducted by Daiwa Institute of Research Ltd. and Nomura Research Institute, Ltd. in accordance with the contract entered into with the Japan International Cooperation Agency (JICA).

Our Study Team carried out eight field surveys between September 1998 and March 2000. While in Mongolia, the Team cooperated with the Ministry of Finance and other concerned ministries to produce the Medium Term Development Strategy and the Medium Term Public Investment Program in the process of formulating Mongolia's 2000 budget. In addition, the Team contributed to preparations for the Mongolian Assistance Group meeting (June 1999).

Based on results of the field surveys in Mongolia and study activities in Japan, the team prepared this report, in cooperation with the Mongolian side.

In view of the necessity of Medium Term Development Strategy and Medium Term Public Investment Program in Mongolia, and the need for socio-economic development in Mongolia as a whole, we recommend that the Mongolian government implement these suggestions without delay.

We wish to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs, the Japanese Embassy in Mongolia, and the JICA Ulaanbaatar office. We also wish to express our deep gratitude to the Ministry of Finance and other concerned organizations for the kind cooperation they extended our Team, as well as for the warm hospitality provided during our stay in Mongolia.

Very truly yours,

関屋 浩彦

Hirohiko Sekiya

Team Leader,

The Study on the Support for the Economic
Transition and Development in Mongolia

Public Investment Program for 2000 - 2002

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Executive Summary: Medium Term Strategy and Public Investment Program Formulation

1. Introduction

1.1. Background

A study entitled "Economic Transition and Development in Mongolia" (hereinafter, the "Study") has been produced in response to a request by the government of Mongolia to the Government of Japan. The Japan International Cooperation Agency (JICA) and Mongolia's Ministry of Finance agreed upon the scope of work in Ulaanbaatar on April 3, 1998. JICA then organized a study team consisting of Daiwa Institute of Research Ltd. (the Prime Manager) and Nomura Research Institute, Ltd. (hereinafter referred to as the "Study Team") to implement the Study, which officially began in September 1998.

The Japanese Team has conducted the Study under the guidance and coordination of the JICA Steering Committee, headed by Professor Shinji Asanuma. The Mongolian side also established a Steering Committee, headed by the Minister of Finance, who was responsible for coordinating the activities of the Mongolian counterparts. The counterparts consisted of officials from the Economic Policy Department and Fiscal Policy Department, both within the Ministry of Finance. The Japanese Team asked the Mongolian Steering Committee to establish a Mongolian Working Team, composed of officials from the concerned line ministries.

The Japanese team, in cooperation with the Mongolian counterparts, has carried out the following projects in the course of the Study:

1. A Study on the Formulation of a Medium Term Strategy and Public Investment Program (MTS/PIP Study)
2. A Study on Tax Collection Enhancement (Tax Collection Study) - completed in September 1999
3. A Study on Rural Banking Services and Saving Mobilization (Rural Banking Study) - to be completed in March 2000.

This summary concerns only the first of these projects, the MTS/PIP Study.

1.2. Objectives

There are two major objectives for the MTS/PIP Study:

- 1. Preparation of the MTS and PIP with the cooperation of Mongolia's Ministry of Finance.**
- 2. Transfer of technical expertise to the Mongolian counterparts**

The first objective hopes to assist in achieving a smooth transition to a market economy with greater long term economic growth prospects. The second objective has been achieved through the joint examination and preparation of the MTS and PIP.

The MTS and the PIP have been analyzed from a medium term perspective, which, it is hoped, will strengthen the links between the planning and budgeting phases of resource management. Inter-sector prioritization is derived from each individual sector MTS, which analyzes the current situation, major issues, current government policy, and growth potential (for production sectors). The MTS provides the most important rationale for PIP prioritization.

Formulating a PIP is one component of a Medium Term Expenditure Framework which integrates recurrent and capital expenditures. To improve the current method of PIP formulation, a rolling three-year PIP has been proposed. This will establish an efficient screening process, clarify public investment strategies by defining priorities and create a mechanism to match investment decision with available resources. Through these efforts, the study hopes to establish a stable and transparent fiscal and public finance system to be used during the budgetary process.

1.3. Basic Principles of Study Implementation

The following have been basic principles in the course of this study:

- 1. Establishment of a framework for joint work under the initiative of the Mongolian Government**
- 2. Cooperation with international agencies, particularly the IMF, WB and ADB**
- 3. Work according to the budget schedule**

1.4. Work Flow

The 19-month Study has been conducted from September 1998 to March 2000. An inception

report in September 1998 was followed by progress reports in March and September 1999, and finally, a final report in March 2000. The Mongolian Assistance Group Meeting (MAGM) of June 1999 came at the mid-point of the study, and the study team was able to provide support preparatory works by the MÖF for use at the meeting.

2. The Medium Term Strategy

2.1. National MTS

The national MTS integrates the individual sector strategies with the economic realities Mongolia faces to create a coherent forward-looking development plan. The following characteristics, unique to Mongolia, are considered:

- **small domestic economy:** low population and low per capita income mean that Mongolia should not depend on domestic demand alone to lead growth. Successful enterprises will quickly satisfy domestic demand and will be constrained if export corridors are blocked. Thus, an open-economy stance, as is generally in place, is required to attain optimal growth rates.
- **vulnerability to external shocks:** a small open economy, combined with a high dependence on export items that exhibit high price volatility, results in extreme vulnerability to external shocks, as has been experienced with the fall in copper and cashmere prices in the late 1990s. Even windfall gains from a sudden price rise have negative implications – such as the resulting exchange rate appreciation which chokes other export industries, or the temporary increase in government revenues which may lead to unsustainable policies (or lack of reform). For these reasons, Mongolia should attempt to diversify its export base over the medium to long term.
- **agriculture based economy:** one-half of the population is directly engaged in agriculture, primarily in livestock. Currently, accurate market signals are not reaching rural households, which is inhibiting growth and contributing to increasing income disparities.

Taking these characteristics into account, we define a national MTS for Mongolia:

- **Maintain consistency with ESAF:** Mongolia has done a praise-worthy job of following the ESAF guidelines to date. Adhering to ESAF constraints not only is beneficial in its own right, it also leads to increasing confidence and credibility in government policy. These factors are essential if FDI is to be attracted.
- **A stable energy supply is a prerequisite to growth** (as well as contributing to improvements in the standard of living). The basic energy infrastructure is in place but requires partial rehabilitation, more consistent maintenance and greater efficiency in operation. The financial costs needed are small relative to the cost of building the initial infrastructure and are deserving of high governmental priority.
- **Development experience has shown that “ignoring” the agriculture sector by forcing resources into other sectors retards growth.** While much of the agriculture sector is

privatized, the government has to provide and maintain appropriate infrastructure as well . Livestock related industries have high export growth potential if the right governmental policies are pursued.

- Mongolia's primary exports will broaden from copper and cashmere products to include gold and agribusiness. In addition, tourism is a high growth foreign exchange earning industry. Government policy must be consistent with strengthening foreign currency earning capacity by reforming the environment for FDI. Improving trade relations with China would also be a great boon to exports.
- Continued growth of the private sector with adequate institutional reforms: Early rounds of privatization were rushed in the belief that the free markets could quickly respond to the new environment. Unfortunately much of the legal and financial framework on which a market economy depends was not in place. A safer approach to privatization is to create the legal and financial framework for private sector growth which will then spawn new businesses as entrepreneurs (domestic and foreign) enter the markets.
- Support infrastructure that will contribute to increasing private business activities, such as the rehabilitation of roads, bridges and railway.

Based on the micro-constraints of individual sectors, sectoral growth projections were performed for the medium term (through 2005). Results suggest considerable variation in growth rates in the coming years, with rapid growth in gold mining and tourism, both of which will become increasingly important as foreign exchange earners. Livestock will continue to provide stability for the economy, however efforts are needed to improve physical and institutional infrastructure. The decline of the manufacturing sector will bottom-out and future growth will center on processing of agricultural goods. Medium term energy needs will be met using current facilities only (with occasional imports to meet peak demand). The aggregate growth rate for the economy has been estimated to be 4.4% from 1998 to 2005. The potential of future energy sources are not considered due to various uncertainties. The other relevant constraints are detailed in the sectoral medium term strategies (which follow).

2.2. MTS by Sector

Agriculture

On the surface, agriculture was one of the most successful sectors of the Mongolian economy in the 1990s. The total number of livestock grew by over 28% from 1992 to 1998 and is now estimated at 33 million. In addition, the sector absorbed extensive amounts of labor - with

employment rising by over 30% between 1993 and 1998. However, aside from the privatization of *negdel* assets beginning in 1991, these changes were spurred by a combination of negative influences:

- the collapse of other sectors, which pushed labor into agricultural activities
- poor market access for herders, which has prevented the sale of animals – leading to larger herds of declining quality
- lack of abattoirs and access to credit – which, again, has led to larger herds
- distorted price signals – which has led herders to breed for volume of output rather than quality (this applies particularly to cashmere).

Many of the issues listed here would be favourably affected by improved physical and institutional infrastructure (such as rural roads, water access, regional markets). Essentially this type of infrastructure allows the market to function more efficiently.

Land capacity has been pushed to its limit. Overgrazing has worsened in recent years. Further increases in livestock numbers will come at the further expense of herd quality. Herders must see it in their self-interest to maintain the sustainability of pasturelands. The formation of grazing associations, such that groups of herders become mutually responsible for a specified area of rangeland in conjunction with the soum government would help. High yielding fodder and pasture management improvement are urgently needed in order to save animal lives under environmental disaster with excessive snow and cold.

Crop growth is constrained by many of the same factors, with the addition of the harsh winter growing environment, soil erosion, stagnant development in new seed types and competition from imports.

For both livestock and farming, investment in land capacity is essential. Particularly important are water resource rehabilitation and improved rural roads. Extension services and wider access to veterinary services also need government support.

Finally, the collapse of traditional export markets must be met with government efforts to secure new markets and promote Mongolian goods, such as efforts to lower Chinese tariffs.

Mining

Over the medium term, mining will continue to be the top foreign currency earner. Copper has traditionally been the top mineral export, but this is expected to change in the next few years, with gold taking over the top spot.

The main constraint in the gold sector is the environment for foreign investment. The institutional framework surrounding FDI remains problematic for many foreign partners, as do the relatively high taxes applied to gold. (The main report offers several policy suggestions.) Nevertheless, the gold industry remains relatively un-exploited, with low cost extraction possible in many areas of the country.

As for copper, Erdenet should be able to maintain its 5% share of total world production, but restructuring, with an eye toward eventual privatization, is recommended. Restructuring can improve fortunes with minimal additional investment.

Manufacturing

Mongolia's big bang transition threw recently privatized domestic firms into severe competition with foreign products by quickly lowering import tariff protection. The sector was unprepared for this competition and suffered tremendously for the first half of the decade. Things have stabilized, and certain sub-sectors are even growing, but the sector overall is still having difficulty.

The food processing and textile industries, accounting for 50% and 25% of the sector, respectively, are "survivors" of the transition in the sense that their decline was relatively slow and they are not expected to decline further. The primary constraint to expansion is institutional capacity. The current business environment prevents foreign capital from taking advantage of Mongolia's low wage labor. Development of an efficient collection and distribution system is not yet in place and may take years to achieve. As opposed to large government investment, the MTS should focus on reducing these institutional barriers.

A starting point might be the 1998 World Bank Study (cited in main report), which found that the foreign business community perceives the following as hindrances to investment:

- Overly complicated licensing, registration and approval process
- Discretionary implementation of regulations by government agencies

- Corruption
- Frequent changes of policy and regulations
- A tax system biased against the manufacturing sector
- Absence of banking services.

Measures to provide access to credit, such as the WB's two step loan program or the export usance finance scheme, are pivotal at this time.

Energy (electricity, heat and coal)

Coal's position as the primary source of energy, supplying 74% of the total primary energy supply, is unlikely to be challenged over the medium term. Approximately three-fourths of coal consumed is for electricity and heating – and around 40% of electricity is consumed by the Erdenet Copper Mine. This industry structure, in which certain firms play a large role in the production-distribution-consumption chain, is susceptible to crisis should one link falter – as happened in late 1998.

Electricity consumption collapsed in the early years of transition, bottoming out in 1994. As of 1997 consumption remained at just 70% of the 1989 level. Thus, based on demand projections, aside from rehabilitation of existing plants, no new capacity is likely to be required for 6 or 7 years. A second rehabilitation phase at Ulaanbaatar Power Plant 4 is the most cost efficient means of ensuring sufficient capacity for the capital region for the near future. Aside from this project, rural electrification should be pursued as budgets allow.

The financial situation of the energy sector in general is poor. Weak management has prevented an improvement of conditions. As mentioned, because the energy sector is dominated by a limited number of major players, difficulties at one link of the chain can quickly spread, causing a larger crisis. A debt clearing house should be established to clean up the current difficulties and prepare for the next crisis before it occurs.

As for long-term development, hydroelectric power plants and other alternatives should be considered in line with the future oil and electrical projects now being assessed.

Telecommunications

The telecommunication sector of Mongolia is now trying to shift away from ODA as a source of

investment toward internally generated cash flow. Restructuring should focus on the following issues and constraints:

- The basic telecommunication sector has not yet been separated from the state budget
- Undefined lines of responsibility allow overly-optimistic feasibility studies
- Managerial efficiency of the state-owned sector needs improvement
- Tariff regulations are not well coordinated
- Due to low population density, rural service is rarely profitable.

Like the manufacturing sector, the MTS is best directed at creating the appropriate environment for private sector participation and establishing independent management of Mongolian Telecom.

Transport

An extensive transport system is particularly vital for Mongolia, as it has no sea access and no navigable rivers. Creation of such a system, however, requires significant investment per person due to Mongolia's large size and small population. Unfortunately, the transport sector is not yet sufficiently developed to meet the needs of economic growth and national integration.

Over the years there has been a severe neglect of basic road maintenance. This means that today extensive rehabilitation is needed as well as continued routine maintenance. Financing for routine road maintenance and capital repairs are to be secured by the Road Fund. However, the Fund is far from sufficient to meet these needs. At present, only a tiny fraction of the required routine maintenance is met. The base of the Fund needs to be enlarged by increasing the petroleum tax and finding other revenue sources. The fund can also contribute to the domestic component required by most foreign loans.

Changes in trade traffic flow and urban lifestyle have led to increasing motorization. This is consistent with Mongolia's national integration strategy, which the ADB has supported with technical and financial assistance.

About fifty years have passed since the construction of the existing railway facilities, which have deteriorated due to the harsh weather conditions. Replacement of vital railway assets, such as sleepers (ties), locomotives, railcars, communication and control equipment is required. The establishment of disaster resistant structures for the railway line is needed to ensure safe and

reliable transport.

The social benefits of improved country integration must be balanced against the economic considerations of specific projects. Such normative economic decisions can only be decided by Mongolia itself. In the current setting of severe budget difficulties there is less flexibility to undertake projects with low economic rates of return. Subsidized access to UB from distant regions to compensate for the underdevelopment of the transport network can continue over the medium-term. However, to what degree the government can and should subsidize such policies (so-called minimum access guidelines) needs further debate and consideration.

Social Development

The social return on human development expenditures has been shown to be quite high – especially at the base of the pyramid (primary education and primary health). Investment in basic education is an effective anti-poverty measure and improves economic growth potential. Higher education students should bear a larger burden of their educational costs. In fact, however, spending on higher education students has greatly exceeded spending on primary and secondary students (on a per student basis). A reallocation is needed to emphasize primary education at the expense of higher education.

The present basis of payment for the health insurance fund is extremely narrow. The fund now covers nearly 91% of the total population in Mongolia (about 2.3 million people), but only about 700,000 people are obliged to pay premiums. Health insurance programs should continue to be targeted at the poor, however wider employment of user charges is needed to boost revenues. The ordinance enacted in 1999 enables various medical test services to be chargeable in accordance with a fixed fees list. To establish a fair market-based economy, no particular groups should arbitrarily be granted privileges.

Environment

In general, stricter environmental regulations are needed, along with more comprehensive enforcement of existing policies. Environmental impact assessments must be upgraded in quality and more thoroughly applied. However, environmental policy is rather ad hoc, with no firm theoretical foundation. This is in part due to the fact that the government had little experience with environmental protection policy during the command economy era. The government should seek international advice to overcome this deficiency.

Funding for environmental protection must be increased if substantial progress is to be made. The environmental budget accounts for under 1% of GDP (0.5% in 1998), with just 10% of this budget distributed to rural governments. With such a small budget, it is obviously difficult to enforce environmental regulations. In addition, the budget depends on grants for 67.6% of capital assistance projects and 88.9% of technical assistance projects. Although Mongolia must continue to rely heavily on foreign assistance with respect to its environmental program, domestic financing sources should be developed, based on the user (or polluter) pays principle, in order to allow Mongolia to pursue its own self-defined environmental agenda.

3. Public Investment Program

3.1. National PIP

The objective of this part of the study is to assist the National PIP formulation process at the Ministry of Finance by proposing a budget-consistent medium term PIP for both foreign and domestic budget financed projects for the years 2000 to 2002. Throughout the formulation process consideration has been made such that the medium term development strategies the Study Team articulated are reflected in both the sectoral and national level PIPs.

The following points relate to the PIP formation process:

1. The PIP presented in this study is consistent with the sector and national medium term development strategies.
2. It is assumed that Government budgets will continue to be consistent with the ESAF framework. The medium term national PIP is, in turn, consistent with such a government budget.
3. A striking feature of foreign-financed projects is the overwhelming amount of ongoing and committed projects relative to present borrowing and absorption capacity. As they consume almost three-quarters of the 2000-2002 resource envelope, room for additional projects is minimal. This characteristic exists in domestic financed projects as well, which are dominated by ongoing projects.
4. Mongolia's public investments are financed to a large degree by foreign aid and debt – external debt is projected to peak at around 90% of GDP in 2000. In order to maintain the repayment capacity of the government, we prefer projects which promise relatively high and tangible economic returns over the medium term. Economic infrastructure projects are prime examples.
5. In 1998, the size of the government current deficit (current revenues against current expenditures) was 1.2% of GDP. The overall budget deficit for the same year was 11.2% of GDP. These fiscal difficulties are expected to continue (a budget deficit equivalent to 6.9% of GDP is forecast for 2002). Despite these constraints, the importance of the PIP should be stressed as it creates the conditions for sustainable growth. We have formulated a future domestic PIP which is consistent with the ESAF framework, and is allocated to sectors vital to Mongolia's development.

The most important factor in PIP preparation is prioritization. As resources can not possibly

meet all competing needs, prioritization is the only way to ensure that resources flow to their best use. The basic criteria for prioritization are consistency with development strategies, economic efficiency and particular technical, financial and institutional considerations. The following are the summarized considerations for inter-sector prioritization:

Sectors within economic infrastructure given highest priority were energy and transport – in keeping with the strategy of developing economic infrastructure. Improved transportation infrastructure will bring down transaction costs and is also the glue for national integration. Public investment in energy is absolutely necessary to enhance economic growth. In addition, Mongolia is in the fortunate position of not having to expand energy capacity – but rather can meet all medium term needs through rehabilitation alone with occasional imports to meet the pick demand.

Social infrastructure, such as education, health and the environment should be well financed, particularly investment in primary health and education. The reason social development and environment were not given highest priority is that these investments dependant on ODA grants do not provide sufficient economic and financial returns over the short and medium term covered in this study.

Among industrial sectors, basic infrastructure investment in agriculture, mainly related to livestock, needs PIP support.

Sectors given lower priority in terms of PIP funding were mining, manufacturing and telecommunication. The basis for this judgement is that these sectors belong in the private sector domain and the government should not, in general, offer public assistance.

Foreign financed projects

Core pipeline projects are chosen from the short lists prepared in the individual sector studies and are prioritized according to sector strategy and economic benefit. The gap between the resource envelope and prior resource commitments allows only 6 projects to be selected. The list of foreign-financed pipeline projects for 2000-2002 that we recommend funding are:

- Energy sector (1): Rehabilitation of power plant
- Transport sector (2): Trunk road rehabilitation and new construction
- Agriculture sector (2): Improvement of water supply sources in pasturelands and sector

development program (project type portion)

- Environment sector (1): Reduction of air pollution in UB

Domestic financed projects

As with foreign financed projects, ongoing projects occupy the bulk of budget resources. In line with the strategy of domestic PIP formation, we stress maintenance of economic infrastructure to absorb the gap between the resource envelope and ongoing project requirements. Projects recommended to be funded through purely domestic means include:

- Energy sector: maintenance and rehabilitation of existing power plants; extension of electricity transmission lines
- Transport sector: maintenance and rehabilitation of existing infrastructure; renovation of railway sleepers
- Agriculture sector: further investment in well repair

As an independent entity, MTZ should generally be responsible for financing its own investment. However, maintenance requirements currently overwhelm the capacity of MTZ. Should the railway system become inoperable, the negative spill-over on the economy would be considerable, and, as such, burden sharing between the government and MTZ is recommended. Overhauling / repositioning the railway business is also needed.

As ODA loans require repayment and debt service, the importance of economic return has been emphasized. We have also emphasized the importance of maintaining public capital expenditures despite the consolidation of public spending as a whole.

The aggregated sectoral allocation of the foreign-financed and domestic PIP is shown in the attached table. Although both PIPs emphasize economic infrastructure improvements, the foreign financed PIP is much more heavily weighted toward this objective.

PIP Sector Allocations 2000 - 2002		
	Real Domestic Allocation (excluding counterpart funds)	Foreign financed PIP
Economic Infrastructure	53.7%	80.0%
- Energy	20.0%	55.4%
- Electricity	20.0%	38.6%
- Fuel	0.0%	16.8%
- Transport	33.7%	20.4%
- Road	24.3%	13.7%
- Railway	9.3%	3.8%
- Aviation	0.0%	1.5%
- Other	0.0%	1.4%
- Telecommunication	0.0%	4.2%
Social Infrastructure	18.0%	16.1%
- Education	8.5%	1.8%
- Health	3.0%	3.6%
- Urban Development	6.0%	6.8%
- Others	0.5%	4.0%
Agriculture and Industry	3.0%	3.9%
- Agriculture	3.0%	3.9%
- Manufacturing and others	0.0%	0.0%
Capital Repair	10.0%	0.0%
Administration and Other	15.4%	0.0%
Total	100%	100%

3.2. PIP by Sector

Agriculture

Rural road development and support of rural markets are recommended - as the root cause of many of the problems that afflict the agriculture sector is the inability to access markets. (Many herders do not slaughter their animals for precisely this reason.) This is a major handicap considering that the GOM is anticipating growth in final use animals to carry this sector over the medium term.

Water infrastructure rehabilitation will relieve pressure on the land and increase capacity.

Industry and Mining

Public investment should phase out of manufacturing and mining, as investment in these sectors should be left to the private sector. In the current situation, in which infrastructure is wholly insufficient, however, private enterprise is unlikely to be profitable in many sectors of activity. Until the public sector takes the lead in infrastructure development, rural agri-business activity will be restrained.

Energy

Relatively inexpensive rehabilitation projects can ensure sufficient capacity for the majority of the population for the next several years. Beyond rehabilitation, no new capacity is likely to be required until late next decade, under the assumption that imports from Russia will remain accessible to meet peak demand.

Rural electrification transmission lines should be extended as the budget permits, starting with least cost projects (in terms of cost per person served).

Telecommunications

As the telecom sector is relatively profitable, it has easier access to credit than other sectors. The sector has taken advantage of this, but has simultaneously taken on considerable debt. Concentrating on maintenance and postponing new expansion is the most appropriate way to improve financial viability of the state owned basic telecommunication sector. Making the telecom sector financially independent from the state is the medium term goal.

Transport

The most efficient and urgent investment within the transport sector is road maintenance. The poor state of the road network restrains economic development by increasing transaction costs. Maintenance costs are relatively low and, if ignored, result in higher rehabilitation bills later.

New construction and upgrading of roads along the north-south trade corridor and the east-west linkage corridor have higher priority due to their highly positive economic impact and their importance for national integration. These projects are financed by international agencies, including bilateral support.

The next priority is road rehabilitation in the Ulaanbataar area. Past neglect of the UB road network, combined with an increase in vehicles – especially trucks, has accelerated the depreciation of the network.

Railway maintenance and rehabilitation, particularly railway sleepers, are the next priority. The railways play an important role in trade, but have suffered from years of neglect. Increasing their ability to handle heavy loads will benefit resource production and export capacity. In theory, MTZ, as an independent entity, should be responsible for arranging its own financing without resorting to public funds. However, to delay financing risks the railway system breaking down, which would have consequences far beyond MTZ alone. In these circumstances, use of public funds, through loans, is justified. No new or extension lines are currently justified.

Social Development

Fiscal constraints have meant declining budget allocations for education, health care and social welfare programs. The major objective of structural reform in social services is to increase efficiency by decreasing the level of state involvement and placing more emphasis on private initiative. Grant projects should be stressed over loan projects, but even with grant projects, recurrent costs must be considered. Sector development type programs (as opposed to specific projects) are appropriate, particularly those that explicitly target the poor.

Environment

The economic harm of environmental damage is varied. As the current budget is insufficient to adequately deal with the evolving problems, revenues must be expanded through broadening the base for licenses, user fees, and other taxes.

4. MTS and PIP Formulation: Issues and Key Factors of Improvement

4.1. Medium Term Strategy

The current MTS, the “Government Action Plan 1997-2000” (GAP), was announced in 1996 after the present coalition party came into power. Since then, the MoF has annually reviewed the GAP guidelines during National Budget proceedings, at which time they issue the “Introduction to Guideline and Budget Implementation and Forecast” (hereinafter, “Guidelines”) with macro

economic forecasts for the subsequent three years. In the course of the Study, the Study Team has observed the following issues with respect to the present MTS formulation procedures in Mongolia:

1. The government of Mongolia renewed a three-year IMF adjustment program, known as the Enhanced Structural Adjustment Facility (ESAF), in June 1999. The objective of the ESAF is to restore macroeconomic stability and implement structural economic reform to achieve sustainable economic growth over the medium-term. To the extent that macroeconomic management is consistent with the ESAF, stabilization and conservative fiscal and monetary policies are prioritized. While this has led to improved macro-economic policy, the coordination and promotion of micro-economic policies, concerning real production sectors and infrastructure, has been less than satisfactory.
2. MTS policy priorities and sequencing are not clearly defined in the annual "Guidelines", which merely raises a list of issues. Policies that assist in coordinating the production potential of each sector should be examined.
3. There is no clear connection between the entities responsible for a developing an MTS and the corresponding policy measures needed to support the strategy - such as the PIP, current expenditures, subsidies, tax exemptions or other financial assistance.
4. State owned enterprise reform policy has frequently changed and lacks consistency.
5. Industrial production sectors, such as livestock and manufacturing, have been transformed and are now led by the private sector. However, as Mongolia is still in transition, it is premature to assume that the private sector can solely lead economic growth without further institutional reforms. The Government must continue to play a relatively large role in support private sector activities through both physical and institutional infrastructure development.

4.2. Public Investment Program

Currently, the PIP is prepared in line with the MAGM held every 18 months. However, the PIP has not been integrated into the Government capital expenditure budget - which is in essence an ordinary single year budget. The Government had been intending to introduce budget system reforms as of 2000, with particular focus on performance and output oriented fiscal management, through the enactment of the "Public Sector Management and Finance Act" (based on the so-called New Zealand Model). However, the Parliament did not discuss the issue during the

1999 autumn session. Therefore, our recommended Medium Term PIP attempts to improve this process on our own joint initiative without any legislative basis. The following are our recommendations on PIP formulation.

4.3. Key Factors of Improvement

As a framework for our recommendations on the planning and execution of Mongolia's economic development strategy – we have broken down the MTS and PIP issues into the following four categories: (1) Planning/Programming, (2) Budgeting, (3) Informational issues, and (4) Human Capacity issues. The MTS portion of this report generally falls within the first of these categories while the PIP portion overlaps (1) and (2), but more naturally falls under the latter. Informational issues involve creating and maintaining accountable records as well as improving communication links between entities. Finally, human capacity improvement concerns investing in the human capital of those in charge of formulating and executing policy. The recommendations described below fall into these categories in roughly the following manner (some recommendations apply to more than one category):

	National Level	Sector Level
Planning / Programming	M1; P2N; P3	M1; M2; P2S;
Budgeting	P4; P5	M3; P4
Information	P1; P3; P4; P6; P7	P1; P7
Human Capability	M4	M4

Medium Term Strategy (M1 – M4):

M1. Policy coherency: Sector strategies prepared for each MAGM, which occur on an 18 month cycle, should be more integrated with the annual “General Guideline”. This will increase policy consistency and provide the basis for a more coherent MTS.

M2. Realignment of sector specific policies: Sector specific policies should be clarified in terms of priority and sequencing. In addition, communication between line ministries, and between sections within line ministries, is required to properly take into account cross-sector linkages. For example, there is considerable complementarity of livestock, manufacturing and infrastructure sector policy in the area of agro-processing.

M3. Correspondence between policy implementation agency and budget support: The manner

in which the implementing agency is to be funded through the budget must be more clearly defined. Currently the implementing agency is defined in "General Guidelines" but neither the size nor the source of funding is disclosed.

M4. Research and Training for new policy agendas: Research and training systems need improvement to strengthen development strategy formulation and public financial management. The MOF personnel limit is far from that needed for adequate implementation of MTS and PIP tasks. In the year 2000 budget, the MOF has been allocated funds for a new quasi-official training facility to be used in common with affiliated agencies, such as the General Department of National Taxation and Customs. It is advisable to expand the functions of the facility to enable research that enhances the ability of the agencies to perform new policy tasks.

Public Investment Program (P1S – P2S, P1N – P5N):

P1. Examination of implied policies: An accurate track record of each sector's PIP should be shared between the MOF and the concerned line ministry. This information provides a basis for the future intra- and inter-sector allocation of funds.

P2. Project priority setting: Prioritization within each sector should be clearly indicated by the line ministry concerned. The MOF has responsibility in allocating funds among sectors in a manner consistent with the national development strategy. We suggest the following as fundamental medium term prioritization criteria:

Sector level (P2S)

1. Consistency with the sectoral MTS
2. Economic efficiency (rehabilitation projects take precedence over expansion projects)
3. Implementation preparedness - including technical, financial and institutional constraints.
4. Ongoing and committed projects should, in general, be given priority to ensure policy continuity

National level (P2N)

1. Consistency with the national MTS
2. Economic benefit of sector investment

P3. Inter-sector allocation: It is the mandate of line ministries to determine intra-sector prioritization after considering strategy and the track record of investments. At the same time, a sectoral allocation framework – an inter-sector allocation principle -- should be determined through debate among the concerned governmental parties. Upon receiving intra-sector prioritizations, the MOF can determine inter-sector allocations within the resource envelope based on development priorities. However, this process should be interactive with information sharing between the fiscal authority and line ministries.

P4. PIP ceiling: Before starting preparation of the PIP related budget by line ministries, the MOF should indicate sectoral capital expenditure ceilings based on the inter-sector allocation principle and the macroeconomic resource envelope. This process needs to take account of the present reality that the amount of room for new pipeline projects is restricted, as ongoing and committed projects typically consume most resources.

P5. Comprehensive management of the PIP: The Regulation Council of Foreign Investment, Loan and Assistance (approved by Government Resolution No. 102, June 17, 1998) is recommended to be led by the Prime Minister rather than the current advisory committee to the Prime Minister (chaired by the Minister of External Relations). To evaluate the appropriateness of overall public investment, the PIP should be comprehensively managed within the MOF, regardless of the financial source of individual projects (foreign or domestic), type of assistance (project or program – including technical assistance), or the degree of grant element (loan or grants). By monitoring both loan and grant projects, the MOF can ensure fiscal discipline is maintained – including consideration of recurrent costs.

P6. Consolidated database: In accordance with “ODA Regulation Decree No.93” (June 12, 1999), a consolidated database of the MOF and MOER should be established.

P7. Complementarity between MAGM and annual budget: PIP related work for both the MAGM and the budget should be coordinated and categorically unified, eliminating unnecessary duplication of work. The JICA Study Team has made recommendations to the MOF regarding a new unified data base and data collection system.

Public Investment Program for 2000 - 2002

Introduction

The purpose of this study is to support the capital budget formulation process at the Ministry of Finance and the line ministries of the Government of Mongolia by proposing a budget-consistent medium term Public Investment Program (PIP)

for the years 2000 to 2002. Throughout the formulation process consideration has been made such that Medium Term Development Strategies are reflected in both sectoral and national level PIPs.

1. Overview of the Mongolian PIP

1.1. The concept of PIP

A PIP is a mechanism through which the strategy and execution of investment projects can be managed more effectively. It should fully integrate the planning of capital expenditures financed by foreign aid and domestic sources. Extensive links between policy formulation and budgeting within sectors and across government agencies is fundamental to an efficient PIP. Thus, the PIP should not be carried out in isolation, but rather as one component of broad public expenditure management, including recurrent budgeting formation.

Formulating a PIP requires considerable institutional capacity. In general, part of this burden can be alleviated by incorporating a medium term approach. A framework that links policy formulation and execution to the realities of budget and resource constraints reduces annual budgetary pressure from related parties, particularly line ministries and incumbent project managers, as it defines future policy guidelines (including financial sources). In order to achieve the full benefits of this approach, the financial authority must be able to secure funding from a medium-term perspective, over the entire life of relevant projects, under the assumption of stable macroeconomic management. High institutional capacity among policymakers is also required.

The scope of investment activities included in a PIP also has several parameters. For one, the definition of what constitutes investment has been blurred and ranges from tangible (such as physical infrastructure) to intangible (such as human capital). In addition, prioritization techniques, which define which sectors receive investment first, are subject to debate. Yet another variable is the proper domain of government investment. Should a given investment be undertaken by the public or private sector?¹ Because of cost recovery difficulties, and the necessity of maintaining public services, it has been accepted that the public sector take responsibility for many infrastructure investments. At the same time, due to the lack of financial sources, such investments are often funded through foreign aid. Hence, for the sake of sound

¹ In transition countries, economic infrastructure, such as the energy, transport, and telecommunication sectors, have been traditionally undertaken by the public sector. However privatization should be introduced as economic viability is attained. In other words the scope of government activity should be assessed practically. We should expect a gradual change in the sectoral composition of a countries' PIP as it develops.

debt management, the PIP must be directly administered by the government.

The PIP process should:

- 1) Reflect sectoral strategies and national government priorities;
- 2) Match investment needs with availability of resources;
- 3) Be a result of rigorous screening of all proposed projects;
- 4) Allocate adequate resources for maintenance and depreciation of assets;
- 5) Have the institutional backing of the legislature;
- 6) Be built with high institutional capacity standards.

1.2. The present budget system and the PIP in Mongolia

The Minister of Finance is responsible for preparing the national budget in Mongolia. In mid-June, the MOF asks line ministries and local governments to submit their annual guideline and budget requests. They must submit their budget proposals to the MOF by August 20. The following documents are used at this stage: "Local Government Budget Proposal", "Current Expenditure Proposal", "PIP" and "Guideline Proposal". The MOF then drafts the "Introduction to Guideline and Budget Implementation of Previous Year & Forecasting", "Guidelines" (Economic Policy Department) and "Budget Draft" (Fiscal Policy Department), and submits these to Parliament for approval by October 1.

The PIP is partly incorporated with the budget system through the submission of the "PIP" document, in which projects financed by the State Budget and concessional foreign loans are submitted to the Fiscal Policy Department of the MOF. ODA grant supported projects are submitted to the MOER. Whereas budgetary ceilings are imposed on current expenditure proposals from the line ministries, ex ante caps and ceilings for each sector are not properly introduced for capital expenditure proposals.

The "PIP" preparation is mostly bottom-up. Sector programs are drafted by implementing agencies and submitted to line ministries. After unifying all projects within the line ministry, a list of projects is submitted to the Minister's Advisory Meeting (MAM) for approval. The MAM consists of a minister and directors of departments. There is a tendency to submit most departments project proposals because of the lack of investment evaluation capabilities. The MAM submits the projects to the MOF and the Ministry of External Relations (MOER).

Information sharing between the MOF and MOER has not been appropriate, as the MOER has no duty to submit grant supported project information to the MOF.

In the "Guidelines" and the "Budget Draft" the macroeconomic framework and the main budgetary revenues and expenditures items for the coming three years are estimated and drafted. However, the accounting entries for investment related projects beyond the coming fiscal year are not based on concrete estimates of individual projects.

The PIP ought to refer to a comprehensive and medium term public investment proposal rooted in the fiscal process. The real content for now is a conventional single year budget proposals. Actually, PIP formulation in Mongolia has been shaped through the preparation for periodic Assistance Group Meetings held every 18 months. However, the main concern of those meetings is coordinating ODA schemes and targeting foreign assisted projects. Aside from the donors' meetings, momentum for preparing and scrutinizing PIP information tends to be lost. One of principal reasons for failing to establish a real PIP in Mongolia is the lack of legislative basis for a medium term PIP formation.

Having stated that PIP formulation in Mongolia is in the embryonic stage, certain improvements have occurred recently. In June 1999 the Government approved "ODA Regulation Decree #93" to improve the situation in the way that ODA related project information, including not only foreign loan-based projects but also grant-based projects, should be integrated, and a database to incorporate this information should be built. There has also been progress on the MOF side. The submission format from line ministries was changed in June 1999 in order to facilitate the project cycle management (refer to Box 1). As far as foreign loan-based projects are concerned, a compact database has been developed at the Investment Division in the MOF.

1.3. The Scope of PIP for this study

The purpose of this study is to formulate and propose a practical PIP with a medium term framework. However we have faced several constraints, such as limited PIP information. We have adopted the following definitions and scope of the PIP domain in this formulation.

1) Amounts covered

PIP figures incorporate the total cost of the project unless noted. Project costs are usually financed not only by budgetary measures but also self-financed (retained earnings and other resources of implementing entities).

2) Type of project by financial source

(A) Foreign Financed Projects

Foreign assistance has been provided in the form of “Capital Assistance (CA)”, “Technical Assistance (TA)”, and “Balance of Payment Support (BP)”. Since this study emphasizes investment projects, only “CA” projects are included in this category. However, in cases in which TA activities are directly related with CA projects, necessary comments are made. Such projects are financed by not only foreign loans but also foreign grants. Many foreign loan projects require a degree of domestic counterpart funding. Such “local portions” are included in this category, but entered as domestic investment in the national budget.

(B) Domestic Budget Financed Projects

Pure 100% domestically financed projects are included in this definition. This excludes the domestic component of foreign financing.

3) Consistency with the budget

A proposed PIP has been formulated to be consistent with the Central Government Budget for 2000-2002 under the Enhanced Structural Adjustment Facility (ESAF). It includes ongoing, committed and top priority pipeline projects financed from both domestic and foreign loan sources. It does not include grant projects as grants are treated as an off-budget item according to present Mongolian accounting practices.

Disbursement amounts have been allocated over the years 2000-2002 such that the capital expenditure and net lending category figures are consistent with the ESAF constraints shown in the National PIP table. As it has been created considering both budget constraints and inter-sector prioritization, it can be viewed as our recommended investment strategy.

4) Correspondence to accounting items in the budget

Projects implemented directly by budgetary organisations are classified as “Capital Expenditures”. Projects carried out by “off budget” entities are classified as “Net Lending”.

² In the transition countries most of the economic infrastructures, such as the energy, transport, and telecommunication sectors, have been traditionally undertaken by the public sector. However privatization should be introduced in the field of these activities as far as economic viability of each sector is attained with practical consideration of surrounding economic environment. In other words the scope of

Box 1

Improved "PIP" submission format in Mongolia

Each requesting and implementing office submits a set of forms to the MOF to determine the capital expenditure component of the "Budget Proposal". The forms are PIF1, PIF2, PIP1, PIP2 and PIP3. PIF1 is used to gather information on newly proposed projects. PIF2 is used for projects which have passed the initial scrutiny (using PIF1) of the MOF and should state the effectiveness and feasibility of the project. Form PIP1 should be applied to either committed or fully evaluated pipeline and ongoing projects, and is a summary of ongoing and new projects reflected in the working PIP. Form PIP2 should contain information on yearly-based activities, contractual working schedules and financial breakdowns of all new and ongoing projects. Form PIP3 is used for writing reports on project commissioning and also for describing the completion stages of major projects. New projects are categorized in three classes. Projects not yet having feasibility studies or financial sources, but having economic, social and strategic importance are classified as "Investment Reserve". Projects whose financial source is not identified yet are classified as "Pipeline". Projects approved by the previous years' state budget but not started yet are classified as "Committed". Projects whose financial source is guaranteed by international organizations or donor countries are also "Committed". Finally, projects being implemented are "Ongoing". Information is stored in the computerized data processing unit at the Investment Division. During the budget process the Division screens projects and prepares the "PIP" part of the Budget Draft.

governmental activity should be assessed practically. We could expect the gradual change of PIP domain from sector to sector.

1.4. PIP records by sector and funding source

1.4.1. Foreign Financed Projects (Table 3 to Table5)

Foreign financed investment within the PIP has risen consistently in recent years, from US\$26.67 mn in 1994 to over US\$85 mn in 1999. The sectoral breakdown of investment reveals that economic infrastructure (energy, transport, telecommunications) has consistently consumed the bulk of these funds, exceeding 90% of the total in every year during this period.

Energy related infrastructure has been the target of increasing amounts of investment in terms of both volume and share, rising 9-fold over the 6 year period, from US\$5.93 mn to US\$54.9 mn. Energy accounted for 64% of total foreign financed PIP in 1999.

The transport sub-sector (primarily road, railway, and aviation) peaked in volume in 1996 at US\$56.21 mn. Railway attracted the majority of the sub-sector investment through 1996, when US\$29.37 mn was disbursed in railway investment. Since that time, however, investment in railway has declined -- and was just US\$3.2 mn in 1999. Aviation has followed a similar pattern as railway, peaking in 1996 at just over US\$16 mn before falling to US\$2.5 mn by 1999. The one transport infrastructure category that is growing in terms of PIP is investment in roads, rising from less than US\$1 mn in both 1994 and 1995 to around US\$10 mn in both 1998 and 1999.

Non-economic infrastructure PIP has been minimal, but social development programs have emerged to consume US\$4 – 5 mn in the past two years, 6% of the two year total.

1.4.2. Domestic budget financed projects (Table9 to Table13)

In nominal terms, domestic capital expenditures have risen almost 4-fold since 1994, from Tg8,157 mn to Tg30,910 mn. Given the high inflation rates of the mid-90s, however, the rise in real terms is much less dramatic.

Domestically financed capital expenditures have not been as highly centered on economic infrastructure as have foreign financed investment. Still, the economic infrastructure sectors (energy, transport, telecommunications) have received the largest share of any sector, ranging between 40% - 60% of the annual total since 1994. Transport infrastructure investment has been almost exclusively focused on roads, while that of energy infrastructure has been similarly focused on electricity. Indeed, together road and electricity investment constituted over 95% of

total domestic economic infrastructure capital expenditures from 1994 to 1999.

Aside from economic infrastructure, domestic capital expenditures have increasingly gone toward administration and capital repair. The share of this component has risen from around 13.7% of domestic capital expenditures in 1994 to over 20% by 1999.

The other significant area of investment are social development programs, which have routinely consumed between 15-20% of annual investment. Within this sub-sector, the share of investment into education has grown over time while that of urban development has declined.

1.5. Considerations needed for formulating PIP

PIP formulation involves the integration of sector PIPs prepared by the Line Ministries, and a unified national level PIP coordinated by the Ministry of Finance. During the preparation process both sectoral and national PIPs should consider the following principles.

1.5.1. Setting priorities

There are fundamental criteria to determine intra-sectoral priorities among projects and inter-sectoral allocation between sectors.

(Sector level)

- (1) Consistency with the medium term strategy at the sector level;
- (2) Implied intra-sector priority setting in the past;
- (3) Economic effectiveness of each project.

Consistency with the medium term strategy of each sector is the fundamental criteria for choosing projects. Second, a track-record of investment provides a basis for understanding which types of investment have been successful. Finally, evaluating the economic effectiveness of each project provides an objective yardstick in order to set priority between projects. Usually rehabilitation projects provide greater tangible economic benefits and allow cost recovery in a much shorter period.

(National level)

- (1) Consistency with the medium term development strategy at the national level;
- (2) Implied inter-sector priority setting in the past;
- (3) Economic benefit of sector investment.

Consistency with the development strategy at the national level is the foremost factor in determining the relative share for each sector and sub-sector. This is ultimately a political decision, however the executive ministry should propose the program using professional discretion. Second, we should not ignore the implied sector priority set in the past. This factor gives objective information about the position of each sector and the history of how priorities have changed. Last, due to the high level of external debt, it is important to consider the economic benefits of all investment projects such that the debt servicing capacity of the country is not threatened. To this end, we have emphasized economic infrastructure, such as the energy and transport sectors, rather than social infrastructure.

1.5.2. Availability of resources

The following resource availability factors should be considered when formulating a concrete PIP:

(Sector level)

- (1) Resource constraint assigned to each sector;
- (2) Prior resource commitments (ongoing and committed projects);
- (3) Impact of individual project-size.

Projects within each sector are prioritized and chosen so as to meet the sector ceiling or capped amount. Second, ongoing and committed projects in general should be given priority to ensure policy continuity. However, if ongoing and committed projects are scheduled to consume most resources, there is little room to allocate resources to new projects. Close scrutiny and monitoring of those projects is needed. Finally, the absolute size of projects matters. As resources are highly limited, each project has a relatively large impact on intra-sector resource allocation.

(National level)

- (1) Fiscal resource envelope constraints;

- (2) Prior resource commitments (ongoing and committed projects);
- (3) Impact of sector inherent investment size

First, the present macroeconomic condition sets constraints for the allowable fiscal resource envelope. Accordingly, each block of expenditure items should be consistent with the envelope. Second, the extent of prior resource commitment at various sectors also has an impact upon inter-sector allocation. Finally sector inherent investment size matters. Economic infrastructure projects are typically much larger than projects in the social sector. Size of investment depends on the nature of technology employed and often exhibits lumpiness and indivisibility for technical reasons.

1.5.3. Other factors

These factors must be considered at both sector and national level:

- (1) Preparedness - in terms of implementation schedule, foreign fund availability, etc.;
- (2) Urgency and other contingent policy responses.

Project preparedness is very important as it deals with the sufficient conditions for each project's inclusion into the PIP. Incumbent Line Ministries of requesting projects have the first line responsibility. At the same time the Ministry of Finance has responsibility to maintain budgetary soundness. Urgency for executing certain projects should be worth considering, being reviewed not only from eventuality but also from the point of overall policy balance.

Formulating a PIP is an interactive process between the fiscal authority and incumbent executing ministries. Both parties must share information and have a comprehensive knowledge about the PIP framework. Building a comprehensive PIP database is advisable. The role of line ministries is to ensure the plausibility of selected projects and to work toward the realization of those projects. On the other hand, the role of the MOF is to scrutinize projects and determine inter-sector allocations. Therefore setting allocation guidelines to an incumbent ministry of each sector well in advance is advisable.

2. National PIP

2.1. The fiscal resource envelope for the PIP

The fiscal resource envelope highlights the constraint of size and funding source for formation of the PIP. We set the resource envelope considering the following points.

2.1.1. ESAF and the fiscal resource envelope

Since 1996 the current fiscal balance of Mongolia has been in deficit due to an adverse change in the terms of trade and a drastic downturn in copper and cashmere prices. In 1998 a fiscal balance deficit of more than 10% of GDP emerged. Domestic budget bearing public investment has been reduced from 4.5% of GDP in 1996 to 3.5% in 1998.

The government of Mongolia adopted a medium term adjustment program, supported by a three-year IMF agreement under the ESAF, from July 1997, and renewed in June 1999. Economic policy measures have been made in line with the ESAF, certain measures were modified to fit the Mongolian situation.

The objective of the ESAF is to restore macroeconomic stability and implement structural economic reform to achieve sustainable economic growth over the medium-term. To accomplish this objective, the ESAF incorporates tight fiscal and monetary policy, a reduction of the size of the state sector, and development of the private sector.

ESAF prohibits medium and long term foreign borrowing from the international capital markets in order to avoid an uncontrollable extension of private finance. This means that multilateral and bilateral concessional sources are the only borrowing options for the time being. The IMF and the World Bank have taken the lead in co-ordinating the framework of the borrowing policy on several occasions, such as periodic Assistance Group Meetings.

Accordingly, since economic and fiscal management in Mongolia are based on the ESAF framework, we assume a macroeconomic framework consistent with the indicators adopted by the June 1999 ESAF and have extended estimates up to 2002 by extrapolating the ESAF estimates.

2.2. Fiscal resource envelope for 2000 to 2002 (Table 2)

We have projected the future availability of funds for the PIP according to the ESAF envelope disclosed in June 1999. The GDP growth rate is expected to be 3.5 % in 1999, 4% in 2000, and 4.5 % in 2001. We assume that this is followed by the same growth rate again in 2002 (4.5%). A continuing reduction in inflation is expected as follows: 8.6% in 1999, 5.5 % in 2000, 4.3% in 2001, and 4% in 2002.

The current balance will move from marginal surplus in 1999 to a more stable surplus of 4.6% in 2002 through tax revenue enhancing measures and restraints on current expenditures. As for capital expenditures, a stable share of around 14% will continue over the estimating period. Consequently the overall deficit is expected to fall from 9.8 % of GDP in 1999, to 9.4 % in 2000, and 7.7 % in 2001, as indicated in the ESAF. We estimate this will be followed by a 6.9% deficit in 2002, almost all of which will be foreign financed.

Although the debt stock is expected to increase, the external position is projected to improve gradually, assuming a conservative debt policy is observed. External debt as a percentage of GDP is projected to peak at around 90% in 2000 and then decrease gradually partly due to an improvement in the terms of trade.

The budget for domestically financed projects, as a whole, includes not only domestic projects supported by the budget and the local portion of counterpart funding of foreign-financed projects, but also contingency reserves administered by the MOF. An increase in the number of foreign projects which require local counterpart funding will lead to an increase in the component from Tog 8 bn to Tog 11 bn. In addition, purely domestic projects will increase from Tog 23 bn in 1999 to Tog 48 bn in 2002.

Foreign-financed projects can be divided into: (A) Foreign Financed as part of Capital Expenditure, and (B) On-lent Foreign Loan as part of Net Lending. The former corresponds to projects under the Road Authority in Mongolia that are classified as general government sector activities. Investment will increase to MNT 21 bn in 2002 because of new road construction. The latter is the main part of foreign financed loan projects, which amount to around MNT 80 bn. These project loans seem to be stable as they are avoiding debt pile-ups and there is a shift of ODA loans from project-type to program type. In total, the US\$ equivalent of these foreign loans will be around US\$ 90 mn.

2.3. Inter-sector priorities from the medium term strategy

2.3.1. The medium term strategy at the national level

Mongolia's medium term strategy at the national level is to continue carrying out the economic reforms which are rapidly creating an open market economy. The stated key components are:

Macroeconomic stabilization

Private Sector Development

Financial Sector Development

New Approaches to Infrastructure Development

Promotion of FDI

Promotion of Export-Oriented Industries

A Human Development and Social Sector Development

Much of the medium term strategy highlighted above involves institutional reform – as opposed to project oriented public investments. Two clear exceptions to this are “Infrastructure Development” and “Human and Social Sector Development”, which together support the basic framework of a market economy. Along with these classic realms of public investment, the strategy outlined herein involves one “private-led” sector – agriculture. The medium term projection on growth potential has highlighted sustainable development, to be led by the private sector, which requires complementary government support in the form of a PIP.

Inter-sector priorities

Given the severe financial constraints on the government, it is essential that the investments made are those that will go the furthest in meeting economic and social development goals. We have classified sectors into the following three categories which reflect their nature and function within the economy: economic infrastructure (which mainly supports economic activity); social infrastructure (which supports the welfare of the society and provides economic benefits over the longer term; and agriculture and industry (including mining, manufacturing, and service industries). In this section we touch on how the sector strategies are formulated in order to find a logical base for inter-sector priorities.

(Economic Infrastructure)

- Energy

Public investment in energy is absolutely necessary to enhance economic growth. In addition, Mongolia is in the fortunate position of not having to expand capacity – but rather can meet all medium term needs through rehabilitation alone. Given its importance and relatively low rehabilitation costs, energy should receive high priority.

- Transportation

This sector has considerable spill-over effects on other sectors. For example, improved roads will bring down transactions costs involved in getting agricultural products to the market, thereby helping to resolve many of the difficulties encountered there. Transportation infrastructure is also the glue for national integration and, in most cases, will not be undertaken by the private sector (particularly given the low population density). For these reasons, the transport sector should also be given high priority.

- Telecommunications

This sector can be given lower priority based on the fact that, being the most economically profitable sector, it is the most attractive to private investment. In addition, as telecommunication costs are falling rapidly around the world, a wait-and-see attitude is appropriate.

(Social infrastructure)

- Social Development

Recently attention to the social sector has increased. Social development has a far reaching positive effect on longer term economic prosperity. However, the nature of investments in this sector have a long gestation period and do not provide short term economic returns. Hence, grant type funding is more suitable. In PIP terms, primary health care and primary education, which have an enormous positive externality for society, should be addressed with higher priority.

- Environment

Keeping environment in good condition is a key for sustainable development. Aside from

immediate preventive measures, environmental investment is given second tier priority in terms of use of domestic resources. This is because, the environment, like social development, should be addressed using grant resources.

(Agriculture and Industry)

- Agriculture

Due to the very nature of its size, employing roughly one-half of the workforce, agriculture must be given careful attention. Agriculture is the largest contributor to economic growth except for services. Degradation of infrastructure and a weak technology base in the livestock sector should be rehabilitated through the PIP.

- Manufacturing and others

Manufacturing, mining, and other industrial sectors are given lower priority in terms of PIP funding. The basis for this is that these sectors belong to the private sector and the government should not, in general, offer public assistance.

Observing Mongolia's present situation, most of the funds supporting PIP projects are overseas ODA loans, which require debt service and repayment. Sector allocation should be prioritized along economic effectiveness principles. However, the prioritization of investment must not solely be based on economic cost-benefit criteria. National integration goals and "lifeline support" projects can be justified.

2.3.2. PIP Formulation for the year 2000-2002

Our objective is to set out a three-year medium term capital expenditure program for both foreign financed and domestically financed projects – to be established in the process of budget formation.

The study team had an opportunity to be partly involved with the budgetary process and to obtain investment information. However, as the budget process was in the preparatory stage, complete information was unavailable. The study team utilized the PIP information prepared for the 7th Assistance Group Meeting in June 1999 as a second best alternative, along with data from the line ministries to construct the database for the work. Data of domestically financed projects are not available beyond 2000. We have allocated amounts beyond 2000 based on

projected component shares consistent with Mongolia's medium term development strategy with modifications reflecting the study team's opinions

2.3.3. Foreign loan-financed PIP

In order to prepare a foreign financed PIP we use the database mainly compiled through the recent AGM process with additional inputs from budgetary proposals of line ministries.

Although investment amounts for foreign financed projects are usually denominated in US\$, it is necessary to book these in Togrogs for the budgetary purpose. However, we use investment figures in dollar terms to grasp the real value of investments. As we would formulate a three-year investment program, we prepared the data set of the past six years in order to acquire two periods of information as reference guide for implied priorities set in the past (Table 3, Table 4 and Table 5).

The striking feature of the foreign-financed projects for the coming three years is the overwhelming amount of ongoing and committed projects relative to the present borrowing and absorption capacity (Table 6). As they consume almost three-quarters of the three-year envelope, room for additional projects is minimal. Core pipeline projects are chosen from the short lists prepared in the individual sector studies and are prioritized according to sector strategy and economic benefits. There are only 6 projects chosen – coming from the electricity, road, environment, and agriculture sub-sectors. Those projects are incorporated into the capital expenditure budget for foreign borrowing. Table 6 shows the three-year total of sector allocation. The following tables (Table 7 and Table 8) give yearly figures denominated in US\$ and in the converted national currency. Final allocation figures suggest that most funds would be allocated to the energy and transport sectors. This is quite compatible with the national strategy, which places importance on rehabilitating economic infrastructure. The social sector has tended to be more important, reaching a 16% share of the three-year total.

Since the grand total of foreign-financed projects has already been determined by the resource envelope, our final job was to allocate yearly PIP figures amongst sectors. This was accomplished by calculating yearly portions of each sector at pro rata basis from the three-year total between the ongoing, committed, and newly chosen investment projects.

2.3.4. Domestic budget financed PIP

Domestic capital budgeting is prepared using the same database system as foreign assisted loans. In order to identify implied sector allocation policy, we prepared the data set from past domestically financed capital expenditure figures (Table 9). Careful attention was needed to separate pure domestic project costs from the local counterpart funding portion of foreign assisted loan projects. We removed the latter from total outlays in order to arrive at the proper budget allocation for pure domestic projects (Table 10). Then we applied a deflator to correct for past inflation to get sector allocations in real terms (Table 11 and Table 12). From this track record we can observe the following points: continuing investment need for electricity transmission lines for local electrification in the electricity sub-sector albeit the recent decrease in the relative share; ample need for maintaining and upgrading roads and bridges in the local areas; increasing allocation for the social sector in the recent period (Table 13). These figures are the benchmark for the allocation exercise. The fiscal resource envelope allows an increase of domestic capital expenditures in real terms.

In terms of the budget preparation process, most line ministries have requested funds for year 2000 only. As with foreign loan projects, ongoing projects occupy the bulk of budget resources. In line with the strategy of domestic PIP formation, we stressed maintenance of economic infrastructure to absorb the gap between the resource envelope and ongoing project requirements. In particular, we have emphasized:

- More active allocation to the road sub-sector, including deferred maintenance of roads and bridges.
- Support for deferred maintenance of the railway sub-sector, including renewal of railway sleepers (ties) and maintenance of the railway track.

As for the estimates of road maintenance, we follow the calculation prepared by the recent World Bank report³ for the transport sector of Mongolia, which estimates that US\$ 12 mn per annum is required for road maintenance of the rural and urban road network. We have allocated 80% of the recommended funds over the coming three years.

³ World Bank, Transport Sector Unit, East Asia and Pacific Region: "Mongolia - Taming the Tyrannies of Distance and Isolation- A Transport Strategy for Mongolia, Report No. 18242-MOG, May 25, 1999.

Regarding renewal of sleepers and maintenance of railway tracks, we allocate about 40% of the necessary amount according to WB recommendations. One reservation should be taken in the discussion of the railway sector in Mongolia. MTZ, the Mongolian railway operator, is an independent entity and, as such, should generally be responsible for financing its own investment needs. However, delayed and deferred maintenance requirements are so large that they overwhelm the financial capacity of MTZ. In addition, should the railway system become inoperable, the negative spillover on the entire economy would be large. For these urgent and precautionary reasons, the government is advised to commit investment funds into the sector. Burden sharing between the government and MTZ will need to be discussed, and overhauling / re-positioning the railway business is also needed. In this budget exercise, however, we concentrate on the deferred maintenance needs from the viewpoint of national interest.

Also, attention should be paid to the agriculture sector. As the livestock industry is the primary employer in this country, rural infrastructure improvements financed out of the PIP are appropriate. We allocate 3% of the whole PIP budget for the domestic project total. Public investment should not be allotted for other industry sectors.

Finally we reach the sectoral allocation for years 2000-2002 as shown in Table 13 and Table 15. The energy sector absorbs 20% of total investment due to its basic importance. The transport sector consumes over 33% due to restoring efforts and delayed maintenance in the road and railway sector. The social sector maintains the 18% share it absorbed in the 1997-1999 period.

As much as the same with the foreign loan-financed PIP, our work was to allocate yearly PIP figures amongst sectors. The work process is explained in the explanatory note. Table 14 shows a detailed breakdown for year 2000 on a nominal basis. Table 15 shows both nominal and real breakdowns for the 2000-2002 time frame. Nominal domestic investment figures denominated in Togrogs and consistent with the budget are shown in Table 16.

2.4. Conclusion

This study is an attempt to clarify the present situation of public capital expenditures in the national budgetary process and to propose a PIP for 2000 to 2002 that is consistent with Mongolia's medium term development strategy. The PIP herein defined is based on realistic macroeconomic assumptions and takes into account the medium term national and sectoral strategies which have been defined in separate studies.

Table 1 gives an annual summary of PIP allocation by sector for the years 1999-2002. As discussed in Section 2.1 of this Chapter, these sector-wise allocation in foreign loan-financed and domestic budget financed projects are programmed to be consistent with the overall fiscal resource envelope. The size of the PIP in this formation grows from 11.3% of GDP during the years 1996 to 1998 to 11.7% in 1999 and 12.9% during the years 2000 to 2002.

As most of the funds supporting PIP projects are overseas ODA loans, which require repayment, the importance of the economic return of investments has been emphasized. We have also emphasized the role of public capital expenditures despite the consolidation of public spending as a whole. Particular attention has been given to maintenance of infrastructure in the domestic budget financed projects, mainly roads and railways, and rehabilitation of power plants and distribution lines. Their improvement not only contributes directly to economic activities but also contributes to a strong social infrastructure, through provision of such necessities as healthcare and education.

This is a new method of PIP formation which should be the capital budget component of the annual budget with a medium term framework. Since the PIP should be flexible, revision needs to be institutionalized on a rolling program basis in order to establish a real comprehensive PIP in Mongolia. The overall PIP should incorporate all areas of public investment and include not only capital expenditures but also outlays spent on human capital. In terms of ODA, technical assistance is also an important ingredient in overall development strategy. Investments financed by foreign grants should be grasped comprehensively and include projects at every stage: Investment reserve projects (including those in early stages and also "white elephants"); Pipeline projects; Committed projects; and Ongoing projects. (In the following chapters, sector PIP technical assistance projects and grant supported projects are partly incorporated and shown in the appendices.) What is hoped for is a platform which provides an opportunity for consultation and debate on deciding resource allocation based on national development strategies and economic scrutiny in a transparent and accountable manner. A real comprehensive PIP is the name of such a vehicle.

It is hoped that this study will assist in creating and implementing the practical foundations needed for PIP preparation in Mongolia.

2.5. National PIP Tables

Table 1 PIP Summary

Foreign Assisted Projects		Unit:Tog (bn)				
	1999	2000	2001	2002	2000-2002	
Economic Infrastructure	52.6	85.2	76.5	76.4	240.7	
Energy	28.0	57.8	56.5	52.6	166.8	
Transport	17.0	24.2	15.6	21.4	61.2	
Telecommunication	7.0	5.7	4.4	2.4	12.7	
Social Infrastructure	6.0	14.1	16.9	17.7	48.6	
Education	2.0	0.6	0.9	3.7	5.3	
Health and Social Protection	2.0	3.7	4.5	2.5	10.7	
Urban Development	2.0	6.6	7.7	6.2	20.5	
Environment, etc.	0.0	3.2	3.7	5.2	12.1	
Agriculture and Industry	0.0	1.1	3.6	7.0	11.7	
Other	5.0	0.0	0.0	0.0	0.0	
Total	90.0	103.0	97.0	101.0	301.0	

Note: 1999 figures (1999 amended budget basis)

Foreign Projects (total local portion) (A)

	1999	2000	2001	2002	2000-2002
Central Budget + Road Fund	8.0	8.3	9.9	11.4	29.6

Domestic Projects (B)

	1999	2000	2001	2002	2000-2002
Economic Infrastructure	11.7	20.7	24.2	25.1	70.0
Energy	6.9	6.7	9.6	9.9	26.1
Transport	4.8	14.0	14.6	15.2	43.8
Telecommunication	0.0	0.0	0.0	0.0	0.0
Social Sector	2.9	3.2	10.1	10.4	23.7
Agriculture & Industry	1.0	1.1	1.3	1.4	3.9
Administration, etc.	5.8	9.8	4.9	5.0	19.8
Capital Repair	1.6	2.0	5.5	5.7	13.1
Total	23.0	36.7	46.1	47.6	130.4

Note: 1999 figures (1999 amended budget basis)

Domestic Budget Requirement (A)+(B)

	1999	2000	2001	2002	2000-2002
Budget Total (including Road Fund)	31.0	45.0	56.0	59.0	160.0

Table 2 Fiscal Resource Envelope 1996-2002

	1996	1997	1998	1999	2000	2001	2002
(Percent change)							
Real GDP	2.6	4	3.5	3.5	4	4.5	4.5
Consumer Price(period average)	46.7	35.8	9.4	8.6	5.5	4.3	4
Consumer Price(end of period)	44.8	20.3	6.5	9.4	5	3.7	4.3
(In percent of GDP)							
General Government Revenue	27.8	29.5	25.9	27.3	28	28.3	28.5
Current Revenue	26.6	27.3	23.3	24.7	26.1	26.9	27
Capital Revenue and Grant	1.2	2.2	2.6	2.5	1.8	1.4	1.4
General Government Expenditure	36	38.1	37.1	37.1	37.3	36	35.4
Current Expenditure	22.1	25.5	24.5	24.1	23.1	22.5	22.4
Capital Expenditure & Net Lending	13.9	12.6	12.6	13	14.2	13.5	13
Capital Expenditure	4.5	3.9	4.2	4.6	6.6	6.7	6.7
Domestically Financed	4.5	3.8	3.5	3.6	4.6	5.1	4.9
Foreign Financed	0	0.1	0.6	1.1	2	1.6	1.6
Net lending	9.4	8.7	8.5	8.4	7.5	6.7	6.3
On-lent Foreign Loan	8.3	8.9	7.7	8	7.4	6.5	6.1
Other Lending Minus Repayment	1.1	-0.3	0.7	0.4	0.1	0.3	0.2
Current Balance	4.5	1.8	-1.2	0.7	3.3	4.6	4.6
Overall Balance	-8.2	-8.6	-11.2	-9.8	-9.4	-7.7	-6.9
(In Tog bn)							
Capital Expenditure & Net Lending	82	95	111	130	156	161	169
Capital Expenditure	26	29	37	46	72	80	86
Domestically Financed	26	29	31	36	50	61	65
PIP (Domestic Budget)	24	27	29	31	45	56	59
Domestic Project	24	25	26	23	37	46	48
Local Portion of Foreign Loan	0	2	3	8	8	10	11
Others	2	2	2	5	5	5	6
Foreign Financed (A)	0	1	5	11	22	19	21
Net Lending	55	66	75	84	82	81	83
On-lent Foreign Loan	49	67	68	79	81	78	80
(Of which Project Loan (B))	<47>	<62>	<56>	<75>	<81>	<78>	<80>
Other Lending Minus Repayment	6	-2	6	4	1	3	3
(In Tog bn)							
PIP							
Domestic Project	24	25	26	23	37	46	48
Foreign Financed Project	47	65	64	94	111	107	112
Foreign Project Loan (A+B)	47	63	61	86	103	97	101
(US\$ equivalent)	{80}	{79}	{72}	{86}	{100}	{91}	{94}
Local Portion of Foreign Loan	0	2	3	8	8	10	11
Total	71	90	90	117	148	153	160
Nominal GDP (Tog bn)	537	755	878	1,000	1,097	1,196	1,300
Nominal GDP (US\$ mn)	1,005	950	1,039	1,000	1,065	1,128	1,213

Table 3 Foreign-financed PIP (1994-1999, \$ amount by sector)
(Capital Assistance,disbursement basis)

	Unit:US\$(mn)					
	1994	1995	1996	1997	1998	1999
Energy	5.93	3.52	15.19	35.67	28.77	54.90
Electricity	5.93	3.52	15.19	19.89	17.41	27.60
Fuel	0.00	0.00	0.00	15.78	11.36	27.30
Transport	19.15	36.91	56.21	28.69	27.26	16.80
Road	0.00	0.85	3.22	2.23	10.24	9.20
Railway	11.28	23.72	29.37	8.37	1.73	3.20
Aviation	7.87	8.79	16.03	11.67	10.22	2.50
Others	0.00	3.56	7.60	6.42	5.07	1.90
Telecommunication	0.71	0.64	8.22	14.16	11.43	6.60
Agriculture and Industry	0.88	4.39	0.00	0.00	0.00	0.00
Agriculture	0.00	0.00	0.00	0.00	0.00	0.00
Manufacturing and Others	0.88	4.39	0.00	0.00	0.00	0.00
Social Development	0.00	0.00	0.00	0.33	4.13	5.20
Education	0.00	0.00	0.00	0.33	1.50	1.50
Health	0.00	0.00	0.00	0.00	0.00	1.80
Urban Development	0.00	0.00	0.00	0.00	2.63	1.90
Others	0.00	0.00	0.00	0.00	0.00	0.00
Overall	0.00	0.00	0.00	0.00	0.00	2.06
Macro/Restructuring	0.00	0.00	0.00	0.00	0.00	0.00
Others	0.00	0.00	0.00	0.00	0.00	2.06
Total	26.67	45.47	79.62	78.85	71.59	85.56

Source: GOM and JICA consultant's estimates

Table 4 Foreign-financed PIP (1994-1999, % amount by sector)
(Capital Assistance,disbursement basis)

	1994	1995	1996	1997	1998	1999
	%	%	%	%	%	%
Energy	22.2	7.7	19.1	45.2	40.2	64.2
Electricity	22.2	7.7	19.1	25.2	24.3	32.3
Fuel	0.0	0.0	0.0	20.0	15.9	31.9
Transport	71.8	81.2	70.6	36.4	38.1	19.6
Road	0.0	1.9	4.0	2.8	14.3	10.8
Railway	42.3	52.2	36.9	10.6	2.4	3.7
Aviation	29.5	19.3	20.1	14.8	14.3	2.9
Others	0.0	7.8	9.5	8.1	7.1	2.2
Telecommunication	2.7	1.4	10.3	18.0	16.0	7.7
Agriculture and Industry	3.3	9.7	0.0	0.0	0.0	0.0
Agriculture	0.0	0.0	0.0	0.0	0.0	0.0
Manufacturing and Others	3.3	9.7	0.0	0.0	0.0	0.0
Social Development	0.0	0.0	0.0	0.4	5.8	6.1
Education	0.0	0.0	0.0	0.4	2.1	1.8
Health	0.0	0.0	0.0	0.0	0.0	2.1
Urban Development	0.0	0.0	0.0	0.0	3.7	2.2
Others	0.0	0.0	0.0	0.0	0.0	0.0
Overall	0.0	0.0	0.0	0.0	0.0	2.4
Macro/Restructuring	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0	0.0	2.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: GOM and JICA consultant's estimates

Table 5 Foreign-financed PIP-Sector Allocation (1994-2002, %)
(Capital Assistance, disbursement basis)

	1994-1996	1997-1999	2000-2002
	%	%	%
Economic Infrastructure	96.5	95.0	80.0
Energy	16.2	50.6	55.4
Electricity	16.2	27.5	38.6
Fuel	0.0	23.1	16.8
Transport	74.1	30.8	20.4
Road	2.7	9.2	13.7
Railway	42.4	5.6	3.8
Aviation	21.5	10.3	1.5
Others	7.4	5.7	1.4
Telecommunication	6.3	13.6	4.2
Social Infrastructure	0.0	4.1	16.1
Education	0.0	1.4	1.8
Health	0.0	0.8	3.6
Urban Development	0.0	1.9	6.8
Others	0.0	0.0	4.0
Agriculture & Industry	3.5	0.0	3.9
Agriculture	0.0	0.0	3.9
Manufacturing & Others	3.5	0.0	0.0
Others	0.0	0.9	0.0
Total	100.0	100.0	100.0

Table 6 Foreign-financed PIP-Sector Allocation for 2000-2002
(Foreign-financed PIP)

	Ongoing & Committed		Core Pipeline		Project Total	
	US\$ (mn)	%	US\$ (mn)	%	US\$ (mn)	%
Economic Infrastructure	176.8	79.7	51.8	81.2	228.7	80.0
Energy	128.0	57.7	30.4	47.7	158.4	55.4
Electricity	80.0	36.0	30.4	47.7	110.4	38.6
Fuel	48.0	21.6	0.0	0.0	48.0	16.8
Transport	36.8	16.6	21.4	33.5	58.2	20.4
Road	17.7	8.0	21.4	33.5	39.1	13.7
Railway	10.9	4.9	0.0	0.0	10.9	3.8
Aviation	4.2	1.9	0.0	0.0	4.2	1.5
Others	4.1	1.8	0.0	0.0	4.1	1.4
Telecommunication	12.1	5.4	0.0	0.0	12.1	4.2
Social Infrastructure	45.1	20.3	1.0	1.6	46.1	16.1
Education	5.0	2.3	0.0	0.0	5.0	1.8
Health	10.2	4.6	0.0	0.0	10.2	3.6
Urban Development	19.4	8.8	0.0	0.0	19.4	6.8
Others	10.5	4.7	1.0	1.6	11.5	4.0
Agriculture & Industry	0.0	0.0	11.0	17.2	11.0	3.9
Agriculture	0.0	0.0	11.0	17.2	11.0	3.9
Manufacturing & Others	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0	0.0	0.0
Total	221.9	100.0	63.8	100.0	285.8	100.0

Table 7 Foreign-financed PIP-Sector Allocation (2000-2002, Amount and Component Share in US\$)

	2000	(%)	2001	(%)	2002	(%)	2000-2002	(%)
Economic Infrastructure	85.2	85.2	72.1	78.9	71.3	75.6	228.7	80.0
Energy	56.1	56.1	53.3	58.3	49.1	52.0	158.4	55.4
Electricity	38.2	38.2	33.8	37.0	38.4	40.7	110.4	38.6
Fuel	17.9	17.9	19.5	21.3	10.6	11.3	48.0	16.8
Transport	23.5	23.5	14.7	16.1	20.0	21.2	58.2	20.4
Road	11.6	11.6	10.0	11.0	17.5	18.5	39.1	13.7
Railway	6.8	6.8	2.7	2.9	1.5	1.5	10.9	3.8
Aviation	2.6	2.6	1.0	1.1	0.6	0.6	4.2	1.5
Other	2.5	2.5	1.0	1.1	0.5	0.6	4.0	1.4
Telecommunication	5.7	5.7	4.2	4.5	2.3	2.4	12.1	4.2
Social Infrastructure	13.7	13.7	15.9	17.4	16.5	17.5	46.1	16.1
Education	0.6	0.6	0.9	1.0	3.5	3.7	5.0	1.8
Health	3.6	3.6	4.2	4.6	2.3	2.5	10.2	3.6
Urban Development	6.4	6.4	7.3	8.0	5.8	6.1	19.4	6.8
Others	3.1	3.1	3.5	3.8	4.9	5.2	11.5	4.0
Agriculture & Industry	1.0	1.0	3.4	3.7	6.5	6.9	11.0	3.9
Agriculture	1.0	1.0	3.4	3.7	6.5	6.9	11.0	3.9
Manufacturing & Othe	0.0	-	0.0	-	0.0	-	0.0	-
Others	0.0	-	0.0	-	0.0	-	0.0	-
Total	100.0	100.0	91.4	100.0	94.4	100.0	285.8	100.0

Table 8 Foreign-financed PIP-Sector Allocation (2000-2002, Amount and Component Share in Tog)

	2000	(%)	2001	(%)	2002	(%)	2000-2002	Tog (mn)	(%)
Economic Infrastructure	87,796	85.2	76,471	78.9	76,442	75.6	240,709	80.0	
Energy	57,771	56.1	56,495	58.3	52,572	52.0	166,839	55.4	
Electricity	39,345	38.2	35,847	37.0	41,190	40.7	116,382	38.7	
Fuel	18,427	17.9	20,648	21.3	11,382	11.3	50,456	16.8	
Transport	24,194	23.5	15,570	16.1	21,441	21.2	61,205	20.3	
Road	11,917	11.6	10,630	11.0	18,718	18.5	41,265	13.7	
Railway	7,012	6.8	2,822	2.9	1,556	1.5	11,390	3.8	
Aviation	2,665	2.6	1,073	1.1	591	0.6	4,329	1.4	
Other	2,599	2.5	1,046	1.1	577	0.6	4,221	1.4	
Telecommunication	5,831	5.7	4,406	4.5	2,429	2.4	12,665	4.2	
Social Infrastructure	14,134	13.7	16,861	17.4	17,652	17.5	48,647	16.2	
Education	642	0.6	945	1.0	3,735	3.7	5,322	1.8	
Health	3,737	3.6	4,496	4.6	2,479	2.5	10,712	3.6	
Urban Development	6,556	6.4	7,731	8.0	6,190	6.1	20,478	6.8	
Others	3,198	3.1	3,689	3.8	5,248	5.2	12,135	4.0	
Agriculture & Industry	1,070	1.0	3,634	3.7	7,004	6.9	11,708	3.9	
Agriculture	1,070	1.0	3,634	3.7	7,004	6.9	11,708	3.9	
Manufacturing & Other	0	-	0	-	0	-	0	0.0	
Others	0	-	0	-	0	-	0	0.0	
Total	103,000	100.0	96,966	100.0	101,098	100.0	301,064	100.0	

Table 9 Domestic Capital Expenditure
(1994-1999, Nominal, including counterpart funding)

	Unit: Tog (mn)					
	1994	1995	1996	1997	1998	1999
Energy	1,744	10,430	6,067	6,758	6,816	9,235
Electricity	1,638	10,158	5,991	6,690	6,625	9,235
Fuel	106	272	76	68	191	0
Transport	3,034	3,767	4,147	5,346	5,643	9,242
Road	3,034	3,767	4,147	5,346	5,643	8,842
Railway	0	0	0	0	0	0
Aviation	0	0	0	0	0	400
Others	0	0	0	0	0	0
Telecommunication	55	0	0	0	469	0
Agriculture and Industry	888	547	1,270	1,589	61	1,000
Agriculture	116	351	187	120	17	1,000
Manufacturing and Other	772	196	1,083	1,469	44	
Social Development	1,317	3,099	3,909	4,631	5,822	4,210
Education	332	788	1,279	1,311	3,096	2,222
Health	233	743	1,472	1,504	862	858
Urban Development	744	1,456	1,158	1,816	1,864	1,130
Environment and Others	9	112	0	0	0	0
Administration, etc.	631	1,926	4,466	6,138	6,625	5,655
Capital Repair	488	1,396	4,689	2,985	3,773	1,568
Domestic Total	8,157	21,166	24,548	27,448	29,209	30,910

Source: GOM and JICA consultant's estimates

Table 10 Domestic Capital Expenditure
(1994-1999, Nominal, excluding counterpart funding)

	Unit:Tog (mn)					
	1994	1995	1996	1997	1998	1999
Energy	623	10,002	5,969	4,717	4,257	6,877
Electricity	517	9,730	5,893	4,649	4,066	6,877
Fuel	106	272	76	68	191	0
Transport	3,034	3,767	4,147	5,346	5,643	4,815
Road	3,034	3,767	4,147	5,346	5,643	4,415
Railway	0	0	0	0	0	0
Aviation	0	0	0	0	0	400
Others	0	0	0	0	0	0
Telecommunication	55	0	0	0	469	0
Agriculture and Industry	888	547	1,270	1,589	61	1,000
Agriculture	116	351	187	120	17	1,000
Manufacturing	772	196	1,083	1,469	44	0
Social Development	1,317	3,099	3,909	4,631	5,822	2,915
Education	332	788	1,279	1,311	3,096	2,089
Health	233	743	1,472	1,504	862	0
Urban Development	744	1,456	1,158	1,816	1,864	826
Environment and Others	9	112	0	0	0	0
Administration, etc.	631	1,926	4,466	6,138	6,625	5,655
Capital Repair	488	1,396	4,689	2,985	3,773	1,568
	0	0	0	0	0	0
Domestic Total	7,036	20,738	24,450	25,407	26,650	22,830

Source: GOM and JICA consultant's estimates

Table 11 Domestic Capital Expenditure
(1994-1999, Real, excluding counterpart funding)

	Unit: Tog (mn), 1993 constant price					
	1994	1995	1996	1997	1998	1999
Energy	374	4,211	1,888	1,205	967	1,421
Electricity	310	4,097	1,864	1,188	924	1,421
Fuel	64	114	24	17	43	0
Transport	1,820	1,586	1,311	1,366	1,282	995
Road	1,820	1,586	1,311	1,366	1,282	912
Railway	0	0	0	0	0	0
Aviation	0	0	0	0	0	83
Others	0	0	0	0	0	0
Telecommunication	33	0	0	0	107	0
Agriculture and Industry	533	230	402	406	14	207
Agriculture	70	148	59	31	4	207
Manufacturing and Other	463	83	343	375	10	0
Social Development	790	1,305	1,236	1,183	1,323	602
Education	199	332	404	335	704	432
Health	139	313	466	384	196	0
Urban Development	446	613	366	464	424	171
Others	5	47	0	0	0	0
Administration	379	811	1,412	1,568	1,506	1,168
Capital Repair	293	588	1,483	763	858	324
Domestic Total	4,221	8,732	7,732	6,491	6,057	4,717
Reference						
GDP Deflator (1993=1.0)	1.667	2.375	3.162	3.914	4.4	4.84

Source: GOM and JICA consultant's estimates

Table 12 Real Domestic Capital Expenditure (1994-1999, Real, Component share)
(Excluding the local part of foreign assisted funding; Real term Tog basis)

	1994	1995	1996	1997	1998	1999
	%	%	%	%	%	%
Energy	8.9	48.2	24.4	18.6	16.0	30.1
Electricity	7.3	46.9	24.1	18.3	15.3	30.1
Fuel	1.5	1.3	0.3	0.3	0.7	0.0
Transport	43.1	18.2	17.0	21.0	21.2	21.1
Road	43.1	18.2	17.0	21.0	21.2	19.3
Railway	0.0	0.0	0.0	0.0	0.0	0.0
Aviation	0.0	0.0	0.0	0.0	0.0	1.8
Others	0.0	0.0	0.0	0.0	0.0	0.0
Telecommunication	0.8	0.0	0.0	0.0	1.8	0.0
Agriculture and Industry	12.6	2.6	5.2	6.3	0.2	4.4
Agriculture	1.7	1.7	0.8	0.5	0.1	4.4
Manufacturing and Other	11.0	0.9	4.4	5.8	0.2	0.0
Social Development	18.7	14.9	16.0	18.2	21.8	12.8
Education	4.7	3.8	5.2	5.2	11.6	9.2
Health	3.3	3.6	6.0	5.9	3.2	0.0
Urban Development	10.6	7.0	4.7	7.1	7.0	3.6
Others	0.1	0.5	0.0	0.0	0.0	0.0
Administration	9.0	9.3	18.3	24.2	24.9	24.8
Capital Repair	6.9	6.7	19.2	11.8	14.2	6.9
Domestic Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: GOM and JICA consultant's estimates

Table 13 Domestic Capital Expenditure-Sector Allocation (Real)
 (Excluding the local part of foreign assisted funding; Real term Tog basis)

	1994-1996	1997-1999	2000-2002
	%	%	%
Economic Infrastructure	54.3	42.5	53.7
Energy	31.3	20.8	20.0
Electricity	30.3	20.5	20.0
Fuel	1.0	0.4	0.0
Transport	22.8	21.1	33.7
Road	22.8	20.6	24.3
Railway	0.0	0.0	9.3
Aviation	0.0	0.5	0.0
Others	0.0	0.0	0.0
Telecommunication	0.2	0.6	0.0
Social Infrastructure	16.1	18.0	18.0
Education	4.5	8.5	8.5
Health	4.4	3.4	3.0
Urban Development	6.9	6.1	6.0
Others	0.3	0.0	0.5
Agriculture and Industry	5.6	3.6	3.0
Agriculture	1.3	1.4	3.0
Manufacturing & Others	4.3	2.2	0.0
Administration and Others	12.6	24.6	15.4
Capital Repair	11.4	11.3	10.0
Total	100.0	100.0	100.0

Table 14 Domestic Capital Expenditure-Sector Allocation (Year 2000, Nominal)
Unit: Current price

	2000		2000		
	ongoing	%	need to add	total	
	Tog		Tog	Tog	%
Economic Infrastructure	12,303	45.1	8,360	20,663	56.2
Energy	6,652	24.4	0	6,652	18.1
Electricity	6,652	24.4	0	6,652	18.1
Fuel	0	0.0		0	0.0
Trasport	5,650	20.7	8,360	14,010	38.1
Road	5,650	20.7	4,478	10,128	27.5
Railway	0	0.0	3,882	3,882	10.6
Aviation	0	0.0			0.0
Other	0	0.0			0.0
Telecommunication	0	0.0	0	0	0.0
Social Infrastructure	3,160	11.6	0	3,160	8.6
Education	1,280	4.7		1,280	3.5
Health	600	2.2		600	1.6
Urban Development	920	3.4		920	2.5
Others	360	1.3		360	1.0
Agriculture & Industry	0	0.0	1122	1,122	3.1
Agriculture	0	0.0	1122	1,122	3.1
Manufacturing & Others	0	0.0	0	0	0.0
Administration & Others	9,821	36.0	0	9,821	26.7
Capital Repair	2,000	7.3	0	2,000	5.4
Total	27,284	100.0	9,482	36,766	100.0

Table 15 Domestic Capital Expenditure-Sector Allocation (2000-2002, Nominal & Real)

	2000-2002	2000-2002	2000		2000-2002	
	Allocation	1999 price	Current price		Current price	
	%	Tog	Tog	%	Tog	%
Economic Infrastructure	53.7	63,502	20,663	56.2	69,951	53.6
Energy	20.0	23,662	6,652	18.1	26,130	20.0
Electricity	20.0	23,662	6,652	18.1	26,130	20.0
Fuel	0.0	0	0	0.0	0	0.0
Trasport	33.7	39,840	14,010	38.1	43,821	33.6
Road	24.3	28,800	10,128	27.5	31,678	24.3
Railway	9.3	11,040	3,882	10.6	12,143	9.3
Aviation	0.0	0	0	0.0	0	0.0
Other	0.0	0	0	0.0	0	0.0
Telecommunication	0.0	0	0	0.0	0	0.0
Social Infrastructure	18.0	21,296	3,160	8.6	23,697	18.2
Education	8.5	10,056	1,280	3.5	11,204	8.6
Health	3.0	3,549	600	1.6	3,945	3.0
Urban Development	6.0	7,099	920	2.5	7,908	6.1
Others	0.5	592	360	1.0	641	0.5
Agriculture & Industry	3.0	3,510	1,122	3.1	3,868	3.0
Agriculture	3.0	3,510	1,122	3.1	3,868	3.0
Manufacturing & Others	0.0	0	0	0.0	0	0.0
Administraction & Others	15.4	18,170	9,821	26.7	19,766	15.2
Capital Repair	10.0	11,831	2,000	5.4	13,150	10.1
Total	100.0	118,308	36,766	100.0	130,431	100.0

Reference

Inflation rate: Year2000 5.5%; Year2001 4.3%; Year2002 4%

Table 16 Domestic Capital Expenditure -Sector Allocation (2000-2002, Nominal, Amount and Component Share)

	2000	(%)	2001	(%)	2002	(%)	2000-2002	(%)	Tog (mn)
Economic Infrastructure	20,662.8	56.2	24,216.8	52.5	25,071.2	52.7	69,950.7	53.6	
Energy	6,652.4	18.1	9,603.9	20.8	9,873.8	20.8	26,130.1	20.0	
Electricity	6,652.4	18.1	9,603.9	20.8	9,873.8	20.8	26,130.1	20.0	
Fuel	-	-	-	-	-	-	-	-	
Transport	14,010.4	38.1	14,612.8	31.7	15,197.4	31.9	43,820.6	33.6	
Road	10,128.0	27.5	10,563.5	22.9	10,986.0	23.1	31,677.5	24.3	
Railway	3,882.4	10.6	4,049.3	8.8	4,211.3	8.9	12,143.1	9.3	
Aviation	-	-	-	-	-	-	-	-	
Other	-	-	-	-	-	-	-	-	
Telecommunication	-	-	-	-	-	-	-	-	
Social Infrastructure	3,160.0	8.5	10,126.4	22.0	10,410.9	21.9	23,697.3	18.2	
Education	1,280.0	3.5	4,893.2	10.6	5,030.7	10.6	11,203.9	8.6	
Health	600.0	1.6	1,649.3	3.6	1,695.6	3.6	3,944.9	3.0	
Urban Development	920.0	2.5	3,445.4	7.5	3,542.2	7.4	7,907.6	6.1	
Others	360.0	1.0	138.5	0.3	142.4	0.3	640.9	0.5	
Agriculture & Industry	1,122.2	3.1	1,345.9	2.9	1,399.7	2.9	3,867.9	3.0	
Agriculture	1,122.2	3.1	1,345.9	2.9	1,399.7	2.9	3,867.9	3.0	
Manufacturing & Othe	-	-	-	-	-	-	-	-	
Administration & Others	9,821.0	26.7	4,903.3	10.6	5,041.1	10.6	19,765.5	15.2	
Capital Repair	2,000.0	5.4	5,497.6	11.9	5,652.0	11.9	13,149.6	10.1	
Total	36,766.0	100.0	46,090.0	100.0	47,575.0	100.0	130,431.0	100.0	

Explanation of tables in section 3

This appendix explains the calculation process for arriving at our allocation of domestically financed capital expenditures for the years 2000 - 2002. The primary tool used in calculating this result was the set of sectoral allocation percentages, which were the main topic of this paper.

Determining the Budget Financed Projects

The calculation starts with the ESAF constrained nominal total domestic budget for each year. From this amount we deduct the "local portion" of foreign loan projects as the first funding priority (also determined by ESAF). This gives us the amount available for "domestic project" in nominal terms as can be found in Table 2 (rising from Tog36,766 mn in 2000 to Tog47,575 mn in 2002). Also refer to Table 9, 10, 11 and 12.

Real sectoral allocations

The total pure domestic budget figures were deflated into real terms using the consumer price estimates shown in table 2. The sectoral allocations (as a percentage of the domestic budget) arrived at in this paper were then used to allocate funds. Our three-year allocation meets 80% of the WB estimate of "required" investment into road maintenance and 40% of "required" investment into sleeper renewal. Economic infrastructure consumed the bulk of investment, as seen in Table 13.

Year 2000 allocations

Year 2000 domestic budget allocations were determined by first considering on-going and committed project information. We have stressed road maintenance and railway sleeper renewal in our budget allocations. We also took into account the investment requirement in the agricultural sub-sector. Further funding to these projects, as well as other projects, is difficult to justify given the high degree to which the budget envelope is consumed by on-going and committed projects. Refer to Table 14.

Year 2001 and 2002 allocation

The 2001 and 2002 budgets were generated by simultaneously taking into account the real term sectoral allocations and the previously defined year 2000 budget. Refer to Table 15 and 16.

Nominal sectoral allocations

Finally these budgets were inflated to provide the proposed pure domestically financed capital expenditure budget for 2000-2002 in nominal terms.

Sector Allocation(Domestic financed Project, Component Share)

	Nominal					
	2000	2001	2002	2000-2002	2001	2002
Domestic Budget Total	45,000.00	56,000.00	59,000.00	Inflation rate	5%	4.0%
Local Portion	8,234.00	9,910.00	11,425.00			
Budget	36,766.0	46,090.0	47,575.0	118,308.1	34,849.3	41,886.1
Road Maintenance Plan				36,000.0	12,000.0	12,000.0
as % of estimated need				80.00%	80.00%	80.00%
Railway Sleepers Plan				27,600.0	9,200.0	9,200.0
as % of estimated need				40.00%	40.00%	40.00%
Agriculture Fund				5,850.0	2,000.0	1,950.0
as % of estimated need				60.00%	53.70%	64.33%

	2000		2001		2002		2000-2002		2001		2002	
	(Million MNT)	(%)	(Million MNT)	(%)	(Million MNT)	(%)	(Million MNT)	(%)	(Million MNT)	(%)	(Million MNT)	(%)
Total	36,766.0		46,090.0		47,575.0		130,431.0		34,849.3		41,886.1	
Economic infrastructure	20,662.8	56.2	24,216.8	52.5	25,071.2	52.7	69,950.7	53.6	19,585.6	22,008.0	21,908.1	
Energy	6,652.4	18.1	9,603.9	20.8	9,873.8	20.8	26,130.1	20.0	6,305.6	8,728.0	8,628.1	
Electricity	6,652.4	18.1	9,603.9	20.8	9,873.8	20.8	26,130.1	20.0	6,305.6	8,728.0	8,628.1	
Fuel	-	-	-	-	-	-	-	-	-	-	-	-
Transport	14,010.4	38.1	14,612.8	31.7	15,197.4	31.9	43,820.6	33.6	13,280.0	13,280.0	13,280.0	
Road	10,128.0	27.5	10,563.5	22.9	10,986.0	23.1	31,677.5	24.3	9,600.0	9,600.0	9,600.0	
Other road investment	-	-	-	-	-	-	-	-	-	-	-	-
Road Fund maintenance	10,128.0	27.5	10,563.5	22.9	10,986.0	23.1	31,677.5	24.3	9,600.0	9,600.0	9,600.0	
Railway	3,882.4	10.6	4,049.3	8.8	4,211.3	8.9	12,143.1	9.3	3,680.0	3,680.0	3,680.0	
Other Railway investment	-	-	-	-	-	-	-	-	-	-	-	-
Sleepers	3,882.4	10.6	4,049.3	8.8	4,211.3	8.9	12,143.1	9.3	3,680.0	3,680.0	3,680.0	
Aviation	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Telecommunication	-	-	-	-	-	-	-	-	-	-	-	-
Social Infrastructure	3,160.0	8.6	10,126.4	22.0	10,410.9	21.9	23,697.3	18.2	2,995.3	9,202.8	9,097.4	
Education	1,280.0	3.5	4,893.2	10.6	5,030.7	10.6	11,203.9	8.6	1,213.3	4,446.9	4,396.0	
Health	600.0	1.6	1,649.3	3.6	1,695.6	3.6	3,944.9	3.0	568.7	1,498.8	1,481.7	
Urban Development	920.0	2.5	3,445.4	7.5	3,542.2	7.4	7,907.6	6.1	872.0	3,181.1	3,095.3	
Others	360.0	1.0	138.5	0.3	142.4	0.3	640.9	0.5	341.2	125.9	124.4	
Agriculture & Industry	1,122.2	3.1	1,345.9	2.9	1,399.7	2.9	3,867.9	3.0	1,063.7	1,223.2	1,223.2	
Agriculture	1,122.2	3.1	1,345.9	2.9	1,399.7	2.9	3,867.9	3.0	1,063.7	1,223.2	1,223.2	
Manufacturing & Others	-	-	-	-	-	-	-	-	-	-	-	-
Administration & Others	9,821.0	26.7	4,903.3	10.6	5,041.1	10.6	19,765.5	15.2	18,170.2	9,309.0	4,456.1	
Capital Repair	2,000.0	5.4	5,497.6	11.9	5,652.0	11.9	13,149.6	10.1	1,895.7	4,996.1	4,996.1	

(Data:MOF)

3. Sector PIPs

Introduction

The following elements require consideration when developing an individual sector PIP:

- Size and achievements of past investment in the sector. A track-record provides a basis for understanding which types of investment have been successful.
- Prioritization of projects within each Line Ministry. Prior to handing a PIP request list up the chain of command, the Line Ministry responsible for the investments must prioritize.
- The aggregate PIP amount requested for the sector. The Line Ministries must consider the total amount requested, rather than hand in a list of all potential projects.
- Grant capital assistance projects have an impact on the PIP, even if they are not included. The impact of these projects should be considered.
- The responsibility for repaying ODA loans should be clarified early on, particularly for on-lent agencies.

The most important factor in PIP preparation is prioritization. Resources can not possibly meet all competing needs, and careful prioritization is the only way to ensure that they flow to their best use. The basic criteria for prioritization are meeting urgent rehabilitation needs; maintaining consistency with development strategies; the economic rate of return for projects; and particular political, technical, financial and institutional constraints. In general, ongoing and committed projects are given priority to ensure policy consistency.

The sectors covered in this study are: agriculture, mining, manufacturing, energy, telecommunications, transport, social development and environment.

3.1. Agriculture

3.1.1. Overview

The Mongolian Government has initiated a number of programs designed to assist the agricultural sector. The current national rural and agricultural policy is set out in the following national level policy documents approved by the Parliament:

- Basic Guidelines for Rural Policy, resolution # 32, 20 May 1996,
- Government Action Plan, resolution No. 61, 1 November 1996, and
- General Guidelines for Social and Economic Development of Mongolia for 1998 and 1999.

The general provisions of these documents recognize that the agricultural sector is a significant contributor of exports, supplies the population with food and consumer goods and produces raw material inputs for industry. The guidelines, devised with substantial assistance and advice from external agencies such as the ADB and the Government of Japan, incorporate a phased action timetable. Up to the year 2000, they propose upgrading technology, particularly in crop production, and increasing the productivity and earning capacity of the extensive livestock sector. Beyond the year 2000, emphasis moves to increased output in the crop and livestock sectors and to further improvement in the social and economic well being of rural people.

The Asian Development Bank (ADB) has provided eight assistance programs since 1992: (i) Livestock Feed Improvement (Jan '92), (ii) Agricultural Processing, Storage and Distribution (Dec '92), (iii) Irrigation System Rehabilitation (May '93), (iv) Agricultural Sector Program (July '94), (v) Institutional Strengthening in the Agricultural Sector (Dec '95), (vi) Strengthening Land Use Policies (Dec '95), (vii) Study of Extensive Livestock Production System (Jun '96), and (viii) Agricultural Sector Development Program (ASDP) (BOP 08-I-1) which will begin in the year 2000.

Looking toward the future, a general focus on private-sector led export promotion will force domestic producers to meet international standards. However, it would be a mistake for the government to assume that, once things are privatized, there is no longer a role for the government to play. In fact, successful export promotion will require substantial government leadership, support and investment. The collapse of traditional export markets must be met with efforts to secure new markets and promote Mongolian goods.

The earnings and overall value of the extensive livestock sector is currently well below its potential. Thus, because of this latent potential, and the importance of the sector in terms of employment, agricultural policy should be directed primarily toward the extensive livestock sub-sector in the medium term.

3.1.2. Sector PIP Needs for 2000-2002

In order to develop an integrated PIP strategy, all potential investment must be taken into account. Here the total needs of the sector are determined by considering all current and potential projects, including domestic financing as well as foreign loans and grants.

Ongoing and committed projects: none

Pipeline projects: Three grant projects make up the bulk of the pipeline.

- A US\$9.8 mn grant for seed multiplication of wheat, potatoes and vegetables,
- A US\$27 mn grant for renovation of the crop sector, and
- A US\$9 mn grant for the eradication of zoonosis.

Beyond this there are three non-grant projects:

- The ADB's ASDP project – US\$8 mn,
- A US\$2 mn rural finance project, and
- A project to improve water supply sources in a model pastureland – US\$5.748 mn.

The sub-total comes to US\$61.548 mn, or Tog68,162.115 mn, all for pipeline projects.

An allocation of Tog3,867.8 mn has been made for purely domestic financed projects over the years 2000-2002. The resulting total needs of the sector are Tog72,029.915 mn.

3.1.3. Budget Consistent PIP for 2000-2002

The budget consistent PIP contains both domestic budget and foreign loan financed projects, which will have to be co-ordinated with the central government budget.

Ongoing and Committed Projects

There are currently no foreign financed ongoing or committed projects for 2000-2002. Pure domestically financed projects are presently not well defined beyond 2000.

Pipeline Projects

There are two priority pipeline projects in the 2000-2002 PIP.

Agriculture Sector Development Program, which fosters a private-sector based, market-oriented agricultural sector, appeared in the 1999-2002 PIP for the first time at the CG Meeting in Ulaanbaatar in June 1999. The tentative amount of the PIP is US\$20 mn through 2004 (US\$8 mn through 2002). The scope of this program is quite wide, dealing with many of the issues defined in section 3 of this paper. A more detailed description follows the budget consistent PIP table.

In light of the priority of the livestock sub-sector, the Study Team recommends the inclusion of one more project, Improvement of Water Supply Sources in pasturelands for Herdsmen and Livestock, which rehabilitates deteriorated wells and provides safe water for herdsman and livestock. The amount of PIP is tentatively US\$15.751 mn for the 3 years 2000-2002 (to be invested in a model region that has not yet been determined).

Beyond these projects, further investment can not be justified given current budget constraints. A summary of this PIP program follows.

Budget Financed Projects

Domestically financed projects in the year 2000 are budgeted at Tog1,122 mn, mainly for pastureland well repair. Expanding pastureland capacity is an urgent task due to the increased number of livestock and shortage of suitable pastureland. In addition, sector national programs approved by the Parliament are included. In light of the importance of the sector, we have used a projected guideline of three percent of total domestic sources for agricultural investment.

Table 17 Budget Consistent PIP for 2000-2002 Agriculture

US\$ mn

Project Name	Financing Source	2000-2002		2000		2001		2002		
		Total	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
FOREIGN LOAN FINANCED PROJECTS										
Pipeline		13.751	2.750	11.001	0.155	1.039	0.869	3.425	1.724	6.536
Agriculture Sector Development Program	Loan	6.000		6.000				1.941		4.059
	Own	2.000	2.000			0.647	0.647		1.353	
Agriculture Sector Development Program Total		8.000	2.000	6.000		0.647	0.647	1.941	1.353	4.059
Improvement of water supply source of herdsmen	Loan	5.001		5.001		1.039		1.484		2.477
	Budget	0.750	0.750		0.155		0.222		0.371	
Improvement of water supply source of herdsmen		5.751	0.750	5.001	0.155	1.039	0.222	1.484	0.371	2.477
Total, US\$ mn		13.751	2.750	11.001	0.155	1.039	0.869	3.425	1.724	6.536
Exchange rate										
Total, Tog mn		14,636.98	2,928.84	11,708.14	159.65	1,070.47	921.92	3,633.85	1,847.27	7,003.82
			14,636.98		1,230.12		4,555.77		8,951.09	
					Tog1,030.0		Tog1,060.9		Tog1,071.5	
BUDGET FINANCED PROJECTS										
Budget Financed projects, Tog mn			3,867.80		1,122.20		1,345.90		1,399.70	
GRAND TOTAL, Tog mn			18,504.78		2,352.32		5,901.67		10,250.79	

The Agriculture Sector Development Program

In June 1999, the ADB proposed this program as a guideline for development of the livestock and crop farming sector, as well as the agribusiness sector. The tentative program is shown below. The program's duration is from 2000-2004 and it may serve as the basis for medium term investment.

Background and Justification:

The Government of Mongolia seeks to foster a private-sector based, market-oriented agricultural sector. While the groundwork for reform has been put in place through privatization, and price and trade liberalization, many services required for a more vigorous supply response are incipient or do not yet exist.

Project Preparation:

ADB has executed a project study which is being finalized.

Objectives:

- To increase the productivity and output of crop and livestock, increase employment and increase incomes;
- To foster efficient processing and improved marketing and distribution of agricultural outputs, thereby improving the returns to sector participants.

Activities:

- Develop policy and institutional reforms for the agricultural sector;
- Introduce a pasture monitoring and management system;
- Rehabilitate water infrastructure to improve pasture utilization;
- Perform field trials of new cropping techniques, including low-tillage equipment, and of new seed varieties;
- Test new crops and improved varieties of existing crops, and seed production;
- Support veterinary health services;
- Strengthen the production, finance, marketing and purchasing skills of agribusiness firms, farmers and herders;
- Promote pilot Grazing Associations for production, processing and marketing of livestock and management of pasture land;
- Establish a cashmere research center;
- Strengthen extension service for family farms;
- Provide credit for private sector development.

Benefits:

→ Expanded agricultural output, employment and incomes.

Project Cost, US\$ mn:

	Local	Foreign	Total
Total	5.0	15	20.0

3.2. Mining

3.2.1. Overview

The Mongolian Mining sector has been transformed into a self-financing corporatized body. Although the government has a 51% stake in some firms, like Erdenet and Mongolrosvetmet, these firms have been selected for future privatization. Gold production has been opened to private investment by both domestic and foreign firms. It is no longer a business run solely by the government. Thus, while the mining sector itself is not a direct target of Public Investment Program (PIP) capital assistance, certain infrastructure projects, which indirectly affect the mining sector, should be considered as objectives of the PIP. Infrastructure development is often beyond the financial capabilities of mining firms, and, in addition, the benefits of infrastructure typically accrue to society at large, not to individual firms. For these reasons, the private market, left to itself, will under-provide infrastructure. Thus, from the medium and long term viewpoint, certain mining sector related infrastructure projects need to be included in the PIP. A new small-scale hydropower station in Egiin Gol or Orkhon, which can provide electricity to the mining sector on a constant basis is an example.

The coal fired thermal plant power system should be diversified by using hydropower resources over the long term. Although such investment is not feasible in the near term, hydropower stations might ultimately provide least-cost electricity to the mines, as well as reduce dependence on Russia and reduce pollution from coal-fired plants. (Imports from Russia to Erdenet amounted to 339 GWh in 1997 or 38 MW on average. Future imports are estimated to meet demand fluctuations up to 100 MW. Therefore, regarding the construction of new hydropower stations, the capacity should initially be around 50 MW but should be expandable to over 100MW so that it is an effective tool for import substitution.)

There are two hydropower options which will meet mining sector needs.

- The Egiin Gol hydropower station project
- The Orkhon hydropower station project

According to a 1995 feasibility study financed by the ADB, the Egiin Gol hydropower station project is located about 50 km northwest of Erdenet and is close to the CES grid. The capacity is composed of four 55 MW generators. In the early 1990's the Government accorded highest priority to the Egiin Gol project. It is, however, a very large project for Mongolia, estimated to cost nearly US\$300 mn, raising concerns among a number of donors, including the ADB. The government has attempted implementation several times through BOT schemes. However, BOT is not a suitable option owing to the nonexistent legal framework on BOT in Mongolia. In addition, per unit generation costs are estimated at 7-8 cents under a private investment scheme, such as BOT. The construction of this kind of hydropower station is currently only feasible with long term official loans from foreign governments or international finance institutions. The capacity of Egiin Gol station was determined by the ADB as technically optimal, but not financially viable taking into account the repayment capability of the Mongolian government. Therefore, the possibility of scaling down the total capacity from a total 220 MW to 110 MW should be studied as financial viability may increase.

The Orkhon hydropower station project is now being discussed among hydropower experts in Mongolia as an alternative to the Egiin Gol station. The project site is located in Bulgan province 220 km away from Ulaanbaatar and 45 km Erdenet. According to the pre-feasibility study conducted by Mongolian side, the capacity is two 50 MW generators with an annual output of 225 GWh. The construction cost of this project is estimated at nearly US\$150 mn and the per unit generation cost is estimated at under 3 cents including depreciation.

Although a hydropower plant is needed to ensure a current power supply to the mining sector, budget constraints prevent such a project over the medium term. In addition, projects such as the natural gas pipeline or high voltage transmission line between Russia and China will affect the viability of these projects. Thus, these projects should be studied further over the next few years in preparation for investment over the longer term.

Table 18 Potential Long Term PIP Projects for the Mining Sector

		US\$ mn								
Project Name	Source	Total	2000	2001	2002	2003	2004	2005	2006	2007
Egiin or Orkhon	Loan	150		-		30	30	30	30	30
Rehabilitation of Erdenet Power	Loan	10				10	-	-	-	-

Source: Energy Authority

3.2.2. Sector PIP Needs for 2000 2002

On account of the private structure of the mining sector, no direct PIP investment is justified. However, as the sector is the dominant consumer of energy in Mongolia, its demands on the energy system affect PIP investment indirectly. We have approached the issue of PIP in this paper from this demand side framework.

Table 19 Project Comparison: Mining Sector PIP

Items	EG hydro power (Egiin Gol)	OR hydro power (Orkhon)	ED coal power (Erdenet)
Construction	Not Yet	Not Yet	1970's & early 1980's
Pre-F/S	ADB-1993	GoM-1992	MINDECO (preliminary Study)-1993
F/S	ADB-1994	None	None
MW	55 MWx4	50MWx2	Total 28MW
Connection to CES	Yes	Yes	Yes
Intention of GoM	Very strong need for construction (Decided in early 1990's)	An alternative to EG (Not Yet Decided)	Rehabilitation is needed (Not Yet Decided)
Meaning to GoM	Peak Load	Peak Load	Steam to mine, Heat to the city, Standby to mine
Significance to GoM	Reducing import from Russia, Standby electricity Top priority in Power Sector	Reducing import from Russia, Standby electricity	Supplement to Erdnet
Financing	Malaysia and Czech tried BOT in vain. GoM needs official loan.	Official loan	Official loan
Problems	Big Financing (US\$300) to MoG	Big Financing (US\$150) to MoG	Getting worse quality of Sharyn Gol coal
Comments	Down Sizing is needed.	F/S is needed for comparison with EG.	F/S is needed.
Implementation	After the completion of rehabilitation of UB No4	After the completion of rehabilitation of UB No4	After the next donor meeting

3.2.3. Budget Consistent PIP for 2000 – 2002

No projects.

3.3. Manufacturing

3.3.1. Overview

In formulating the big-bang transition policies starting in 1990, the government of Mongolia believed that the development of the manufacturing sector would be best achieved through the initiative of private entrepreneurs. In 1998, the government sought the expansion of agro-based commodity exports through private investment. Creating an attractive business environment for domestic and foreign investors became the medium-term policy objective of the manufacturing sector. Reflecting this policy, allocation of PIP to the manufacturing sector decreased, and reached zero in 1999.

Decreasing Share of the Manufacturing Sector in PIP

Until 1995, Mongolia received foreign capital assistance to the manufacturing sector. The share of the manufacturing sector in foreign financed PIP was 9.7% in 1995. Since 1996 the manufacturing sector has not received such assistance. Capital expenditure from the state budget to the manufacturing state-owned enterprises has also decreased. The share of the manufacturing sector in total capital expenditure was 11.0% in 1994 and decreased to 0.2% in 1998. In 1999, no capital expenditure was allocated to the manufacturing sector. In addition, subsidies for loss-making manufacturing SOEs have decreased. In the budget of 1999, there are no subsidies for the manufacturing sector from current expenditures.

Table 20 PIP for the Manufacturing Sector

		1994	1995	1996	1997	1998	1999
Foreign Financed PIP (Capital Assistance, disbursement base)							
Amount	US\$ mn	0.88	4.39	0.00	0.00	0.00	0.00
Share	%	3.3	9.7	0.0	0.0	0.0	0.0
Domestic Capital Expenditure							
Amount	Tog mn	772	196	1,083	1,469	44	0
Share	%	11.0	0.9	4.4	5.8	0.2	0.0

Government investment into the manufacturing sector

The Mongolian government invested in the manufacturing activities of SOEs in the early 1990s. However those investment projects have not been successful. In 1994 and 1995, investment in new equipment for a meat processing plant and dairy plant were implemented by foreign grant capital assistance. Those projects are intended to improve the efficiency and profitability of state-owned manufacturing enterprises. However, due to the weak management skill, coupled with optimistic feasibility study, those projects have not achieved their objectives. In 1997, those plants were operating at only 1% of installed capacity. More than three-fourths of domestic capital expenditure of the manufacturing sector was allocated to one state-owned metallurgical plant. However, this plant is operating without marginal profit. As a result, the value-added of the basic metal sector was negative in 1997.

New policy for the manufacturing sector: No investment from PIP

The government reconfirmed that manufacturing development is best achieved by private entrepreneurs. This is expressed in the "Recovery and Development Policy for Industry", which was approved by the cabinet in 1998. The new policy for the manufacturing sector is to create an attractive business environment. As a result, three of the four programs presented at the Mongolia Assistance Group (MAG) meeting in 1999 was designed to address business environment issues.

3.3.2. Sector PIP Needs for 2000-2002

Ongoing and committed private sector programs Projects

There are no ongoing or committed capital assistance projects in the manufacturing sector.

However, there are seventeen private sector promotion projects and programs.

Table 21 Ongoing and Committed Programs and Projects for Private Sector - Manufacturing

(US\$ mn)

Project / Program Name	Type	Donor	Duration	Total Project Cost		
				Total	Lcl	Frn
Loan for private enterprises						
1 SME Fund II	T/A Loan	Germany	1995-1999	5.55	0.00	5.55
Legal framework enhancement						
2 Advisory service to the Reform of commercial laws	T/A Grant	Germany	1998-2001	5.42	0.00	5.42
3 The Cooperation in the Legislation and the Administration field	T/A Grant	Germany	1995-2000	5.42	0.00	5.42
4 Legal advisory services with commercial laws as local areas	T/A Grant	Germany	1995-1999	3.23	0.00	3.23
5 Retraining of legal professionals in market economy	T/A Grant	ADB	1998-1999	1.00	0.00	1.00
Institutional Capacity building						
6 SME support program	T/A Grant	Germany	1998-2000	2.94	0.00	2.94
7 Establishment of an Audit Supervisory body	T/A Grant	Germany	1998-2001	1.80	0.00	1.80
8 Strengthening of foreign investment attracting services	T/A Grant	TACIS	1998-2000	1.62	0.00	1.62
9 Strengthening the Standardization and measurement office	T/A Grant	TACIS	1997-1999	1.03	0.00	1.03
10 Mongolian Privatization Program /Barents Group/	T/A Grant	USAID	1996-2000	4.75	0.00	4.75
11 Transition and Development Support	T/A Grant	JICA	1998-1999	1.33	0.00	1.33
Total Ongoing Projects				34.09	0.00	34.09
Loan for private enterprises						
12 SME Fund III	T/A Loan	Germany	2000-2002	4.00	0.00	4.00
13 Private Sector Development Credit	T/A Loan	WB	1999-2002	12.00	0.00	12.00
Institutional Capacity building						
14 Development of SMEs II	T/A Grant	TACIS	1999-2000	1.15	0.00	1.15
15 Customs program	T/A Grant	TACIS	1999-2000	0.87	0.00	0.87
16 SME Support Program II	T/A Grant	Germany	1999-2000	1.30	0.00	1.30
17 US Customs Technical Assistance	T/A Grant	USAID	1999-1999	0.23	0.00	0.23
Total Committed Projects				19.55	0.00	19.55
Ongoing + Committed Projects				53.64	0.00	53.64

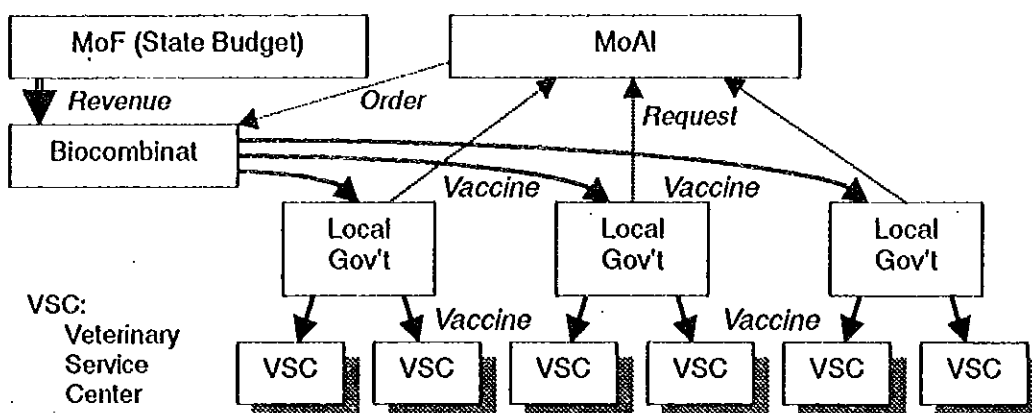
There were eleven ongoing and six committed projects for a total value of US\$53.64 mn. No project requires local funding; fifteen are technical assistance grants and three are two-step loan projects. Four technical assistance programs try to improve the legal framework for business activities. Other technical assistance programs are helping the government to build up business related institutional capability.

Pipeline projects presented in MAG 1999

Four projects were presented in the MAG meeting in June 1999, with a total project cost of US\$32.30 mn. No local portion funding is required from the state budget.

"Technical rehabilitation of Biocombinat" is a capital assistance grant project, established in 1974, which has been producing animal vaccines for infectious disease. It should really be considered as an agricultural sector project. It is not a private manufacturing activity. The Mongolian Government has a unique policy on animal disease. It stipulates that the government takes care of infectious diseases and the private sector takes care of non-infectious diseases. Based on this policy, the government is implementing the "Free Animal Vaccine Program." Every year local governments submit a request to the MoAI for a sufficient amount of vaccine to prevent infectious animal diseases for one year. After the approval of the state budget, the MoAI orders Biocombinat to produce the approved amount of vaccine. Biocombinat then produces the vaccine and delivers it to each local government. Biocombinat receives revenue from the state budget. In this scheme, local governments can receive preventive vaccine free of charge and distribute it to veterinary service centres (VSC) in each soum. Due to recent austerity, the revenue of Biocombinat has been cut in half in the 1990s and necessary maintenance has been neglected. The prevention of infectious animal disease has a large positive externality and active government involvement is justified. However, the current scheme of the Free Animal Vaccine Program is typical of central planning. There is much room to improve the efficiency of this program.

Figure 1 Scheme of the Free Animal Vaccine Program



The other three programs are not for the manufacturing sector alone but for the private sector in general. A US\$30.00 mn two-step loan is being solicited. The objectives of two of the technical assistance grant programs are legal framework enhancement and institutional capacity building.

Table 22 Pipeline Projects and Programs for the Private Sector - Manufacturing

(US\$ mn)

Project Name	Type	Donor	Duration	Total Project Cost		
				Total	Lcl	Frn
Capital Assistance for the Manufacturing sector						
1 Technical Rehabilitation of Biocombinat	C/A Grant	Indefinite	2000-2003	1.50	0.00	1.50
Loan for Private Enterprises						
2 Export Oriented & SME Promotion Two-step loan	T/A Loan	Indefinite	2000-2003	30.00	0.00	30.00
Legal Framework Enhancement						
3 Conforming National Legislation with International Law	T/A Grant	Indefinite	1999-2000	0.20	0.00	0.20
Institutional Capacity Building						
4 Strengthen of Auditing activities	T/A Grant	Indefinite	2000-2002	0.60	0.00	0.60
Total Pipeline Projects				32.30	0.00	32.30

3.3.3. Budget Consistent PIP for 2000-2002

No ongoing, committed or pipeline project requires local financing. Considering the situation of the state budget, it is understandable that the government is depending on the donor community to create a favorable private sector business environment.

3.4. Energy

3.4.1. Overview

Judging from the demand forecast for coal, electricity and heat, aside from the completion of ongoing projects and the second phase of the rehabilitation of Ufaanbaatar Power Plant No. 4, no new capacity is likely to be required until the middle of the next decade.

The introduction of more efficient stoves and environmentally friendly fuels, such as bio-briquette coal, has merit, as does rural electrification, which provides lifelines to communities.

Depending on the performance of the Shivee-Ovoo mine, the GOM should explore the possibility of developing a new coal mine that can compete with Baganuur.

The energy sector (electricity and coal) accounted for around 20% of foreign financed public investment from 1993 to 1998. However, if “energy related amounts” including railroad and coal are counted as “real energy sector amounts”, the total actual energy sector allocation share is the highest.

Furthermore, nearly half of the investment from the centralized budget from 1993 to 1998 were for energy and heating. The priority investment sector has been energy and energy related infrastructure.

Rural electrification, in many cases, lacks economic viability when compared with large-scale electricity grid projects. But electricity supply to local hospitals and communities is of vital importance. They are precisely the areas that require public investment. Thus, in the following analysis, the pipeline projects are divided into projects for the main grid and those for rural electrification. In addition, the procurement side of the project (loans or grants) and recurrent costs should be taken into consideration.

Priority among EA's Main Grid Projects

Pipeline projects for the CES main grid, including the Eastern System (Choibalsan), should be prioritized based upon their additional costs, as shown in the strategy paper, as well as the nature of the fund procurement. The order of priority should be as follows:

- 1) Switchyard Rehabilitation Project at PP No.4
- 2) Rehabilitation of PP No.4 – Second Phase
- 3) Power Rehabilitation Project for Low Pressure Boilers

Since these projects are directly related to over 70% of the population, it is imperative that the GOM implement them at some point. Although the Power Rehabilitation Project for Low Pressure Boilers has been dropped from the current PIP list, the study team believes it is vital to maintain the current generating capacities.

Priority among Local Electrification Projects

Pipeline projects for rural electrification are classified into three categories: 1) extension of exiting transmission lines, 2) instalment of new diesel, solar and wind generators, and 3) hydropower stations.

As shown in the strategy paper, when we compare cost per unit of output for alternative local electrification projects, normally, the extension of existing transmission lines is the least cost option. Then comes hydro or wind depending upon site-specific conditions. Normally, diesel generators are more expensive than hydropower and wind, but they are more reliable. Solar is the most costly option. Renewable energies do not incur any fuel cost, which is the major variable cost for diesel generators.

In light of the above, priority among rural electrification projects should be:

- 1) Rehabilitation of Power Plants of Soum Centers-Phase three
- 2) Extension of Electricity Transmission Lines
- 3) Durgun Hydropower Projects
- 4) Chargait/Hydropower Station
- 5) Locally Financed Hydropower Station Projects

Two hydropower projects, Durgun and Zavkhan, have been considered. As shown in the table below, in terms of generating cost, Chargait is cheaper than Zavkhan. The generating cost of the Zavkhan project is 13.6 cents per kWh with the discount rate of 12%, while that of Chargait is only 8.5 cents per kWh.

Table 23 Economics of Hydropower Projects in Mongolia

	Durgun	Zavkhan	Chargait
Installed capacity (MW)	12	8	8
Elect. Production p.a. (M. kwh)	38	34.7	38.7
Useful life (years)	40	40	40
Total investment (US\$ mn)	24	38.9	27.35
O&M cost (cent/kwh)	0.52	0.52	0.52
Capital cost (cent/kwh)			
Discount rate			
8%	5.3	9.4	5.93
10%	6.46	11.46	7.23
12%	7.66	13.6	8.5
Total Generating Cost (cent/ kwh)	5.82-8.18	9.92-14.12	6.45-9.02

Source: Calculated by the Japan Economic Research Institute based upon data provided by Hydropower Company of Mongolia.

Priority among Fuel Sector Projects

Only two projects are listed in the pipeline: the reduction of air pollution in UB by using coal briquettes and Construction of Petroleum Product Transshipment & Storage Facilities. However these projects need not to take priority.

The total budget of the coal briquette project, which is now estimated at US\$1.2 mn, was estimated at US\$1 mn until the end of 1998. However, an electrostatic precipitator (ESP) at PP No.3 or No.2 could be an economically viable alternative. Besides, the Ministry of Nature and Environment has been promoting the introduction of the G-2 type stove, which has the same objective as the coal briquette project. For these reasons the briquette project should be dropped.

The basic nature of the Petroleum Product Transshipment & Storage Facilities is not clear. If the GOM sees it as necessary to diversify the sources of petroleum product imports for national security, it makes sense for the GOM to construct such facilities. However, if the facilities are mainly used by a limited number of petroleum companies, such as NIC, it should be out of the scope of the PIP. Public investment should not be used when the gains accrue primarily to a private entity.

The rehabilitation program of 10 local coal mines is of importance to sustain the supply of coal to local communities whose energy options are limited. However, it is also true that it is very costly to maintain these coal mines. According to MoID, the total production of these mines, except for Tavantolgoi and Kharatavagatai, is expected to increase from 262 thousand tons in 1998 to 425 thousand tons by 2000. However, given the current sluggish economy, it is unlikely that the demand for coal at these mines will increase 62% in just two years. Even if this is the case, the additional depreciation cost alone caused by these investments could be in the range of between US\$1 to US\$9 per ton. Given the current coal price of US\$7- 8 per ton, rehabilitation of all mines cannot be justified.

Table 24 Rehabilitation of Ten Local Coal Mines' Production

Coal mines	1998	2000	2000-1998	Project cost	annual dep.	Cost per ton
	Thousand tons	thousand tons	Thousand tons	Thousand US\$	thousand US\$	US\$/ton
Bayantecg	55	80	25	1300	217	8.67
Zcegt	20	30	10	450	75	7.50
Mogoin Gol	25	55	30	400	67	2.22
Nuurst Khotgor	45	80	35	450	75	2.14
Tavan Tolgoi	20	80	60	800	133	2.22
Talbulag	42	65	23	300	50	2.17
Tevshiin Gobi	20	30	10	500	83	8.33
Kharatavagatai	50	100	50	500	83	1.67
Khushuut	15	30	15	300	50	3.33
Chandgantai	40	55	15	400	67	4.44
Total	332	605	273	5400	900	3.30

Notes: annual depreciation cost = project cost / 6 years
cost per ton: annual depreciation cost per ton of incremental production
Kharatavagatai: 100,000 tons is for 2005

3.4.2. Sector PIP needs for 2000-2002

The foreign financed electricity sub-sector has six ongoing, one committed and three pipeline projects for the 2000-2002 period, which together amount to US\$193.089 mn, or Tog203,557.678 mn. In addition, purely domestic funded projects are projected to be valued at Tog26,130.1 mn. Total needs of the electricity sub-sector are Tog229,687.778 mn.

The fuel sub-sector contains three ongoing, one committed and two ongoing projects, which together amount to US\$60.027 mn, or Tog63,051.716 mn. There are no purely domestic funded projects, thus, the total needs of the fuel sub-sector are Tog63,051.716 mn.

Pipeline projects for these sub-sectors are:

- Rehabilitation of UB power plant No. 4 - US\$34.050 mn
- Chargait hydropower plant – US\$27.35 mn
- Rehabilitation of boilers at PP No. 3 – US\$29 mn
- Construction of a petroleum product transmission & storage facilities at Zamyn-Uud station - US\$9 mn
- Reduction of UB air pollution through the use of coal briquettes - US\$1.15 mn

Total energy sector needs come to Tog292,739.494 mn, of which 91% is to be foreign financed.

3.4.3. Budget Consistent PIP for 2000-2002

The budget consistent PIP for 2000-2002 contains both domestic budget and foreign loan financed projects, which will have to be co-ordinated with the central government budget.

Ongoing and Committed Projects

In the electricity sub-sector, there are 6 ongoing projects:

- An energy conservation project - US\$8.976 mn
- A power rehabilitation project - US\$4.12
- Rehabilitation of Choibalsan - US\$6.495 mn
- Rehabilitation of Ulaanbaatar Power Plant No. 4 - US\$8.53 mn
- A small coal-fired power plant in Dalanzadgad -- US\$6.546 mn
- Heat Efficiency Project to convert the district heating system in Ulaanbaatar from fixed to variable flow – US\$39.476

Committed projects (electricity):

- Reduction of energy distribution system inefficiency – US\$28.547 mn

In the fuel sector, there are 3 ongoing projects:

- Mongol Coal MON P4 – a US\$0.045 mn
- Baganuur and Shivee-Ovoo Coal Mine Development Phase I - US\$10.55 mn
- Baganuur and Shivee-Ovoo Coal Mine Development Phase I - US\$36.510 mn

Committed projects (fuel):

- Rehabilitation of Aduunchuluun Coal Mine - US\$2.75 mn

Pipeline projects

In order to create a 2000-2002 PIP which is consistent with the fiscal envelope, many projects with merit must be removed. We make the following recommendations:

- 1) Drop the following two electricity pipeline projects: Chargait Hydropower plant (US\$27.35 mn) and the Low Pressure Boilers at PP No.3 Project (US\$29 mn) due to extreme budget constraints. Although its generating capacity is small compared with that of PP No.4, PP No. 3 is an indispensable part of electricity and heat supply for the country. If fiscal conditions improve, inclusion should be considered.

- 2) Drop the two fuel pipeline projects: coal briquette (US\$1.15 mn), and Zamyn-Uud Station oil storage facilities (US\$9 mn). The oil storage facilities at Zamyn-Uud are likely to be utilized by either NIC or by Mongolian Rail or both. Therefore these companies should construct those facilities.

- 3) Drop the rehabilitation program of ten local coal mines (US\$5.4 mn) from the PIP list. The demand forecast is too optimistic and the costs are too high, except for Tavantolgoi (which will supply coal to the Dalanzadgad coal-fired power station).

Only one pipeline project remains in the budget consistent PIP - Phase II of the PP 4 Rehabilitation - US\$34.050.

Budget Financed Projects

In 1999, Tog1,290 mn out of Tog1,790 was used for construction of electricity transmission lines, including 230.7 km of 35kv line between Luus-Erdenedalai, Myangad-Erdeneburen and Buren-Delgerkhaan, and 105 km of 10kv line between Bayangol-Saikhanovoo and Bayangol-Sant.

Ongoing projects in 2000 amount to Tog6,652 mn. Roughly half of the budget, Tog3,680 mn, is scheduled for rehabilitation and renovation of existing power-plants, including Dalanzadgad thermal power station (Tog2,200 mn), power station No 3 (Tog830 mn) and Choibalsan power plant (Tog650 mn).

Table 26 Budget Consistent PIP for 2000-2002 Energy – Fuel

US\$ mn

Project Name	Financing Source	2000-2002		2000		2001		2002			
		Total	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	
FOREIGN LOAN FINANCED PROJECTS											
Ongoing		47.105	1.630	45.475	1.016	17.266	0.398	18.249	0.217	9.960	
Mongol Coal MON P4	Budget	0.010	0.010		0.006		0.002		0.001		
	Loan	0.035		0.035		0.022		0.009		0.005	
Mongol Coal MON P4 Total		0.045	0.010	0.035	0.006	0.022	0.002	0.009	0.001	0.005	
Baganuur and Shivee-Ovoo Coal Mine Development Project II	Loan	35.890		35.890		11.291		15.914		8.686	
	Own	0.620	0.620		0.387		0.151		0.082		
Baganuur and Shivee-Ovoo Coal Mine Development Project II Total		36.510	0.620	35.890	0.387	11.291	0.151	15.914	0.082	8.686	
Baganuur and Shivee-Ovoo Coal Mine Development Project	Loan	2.690		2.690		1.677		0.655		0.358	
	Own	6.860		6.860		4.277		1.671		0.912	
Baganuur and Shivee-Ovoo Coal Mine Development Project Total		9.550		9.550		5.954		2.326		1.270	
Committed		2.750	0.250	2.500	0.094	0.623	0.101	1.214	0.055	0.663	
Rehabilitation of Aduunchuluun coal mine	Loan	2.500		2.500		0.623		1.214		0.663	
	Own	0.250	0.250		0.094		0.101		0.055		
Rehabilitation of Aduunchuluun coal mine Total		2.750	0.250	2.500	0.094	0.623	0.101	1.214	0.055	0.663	
Total, US\$ mn		49.855	1.880	47.975	1.109	17.890	0.499	19.463	0.272	10.622	
Exchange rate				Tog1,030.0		Tog1,060.9		Tog1,071.5			
Total, Tog mn		52,419.785	1,963.307	50,456.478	1,142.703	18,426.597	529.113	20,647.947	291.491	11,381.934	
		52,419.785		19,569.300		21,177.060		11,673.425			
BUDGET FINANCED PROJECTS											
Budget Financed Projects, Tog mn											
GRAND TOTAL, Tog mn		52,419.785		19,569.300		21,177.060		11,673.425			

3.5. Telecommunications

3.5.1. Overview

Several issues distort the formulation and priority of the Public Investment Program (PIP) in the telecommunication sector. These issues originated from an inefficient governance structure within the sector. Structural reform will be expedited by the reorganization of MT and PTA (see Medium-term Strategy for the Telecommunication Sector). Major issues are:

1. Separation of investment decisions from repayment obligations
2. Priority set by economic efficiency is easily distorted by political intervention.
3. Important maintenance of network assets is not implemented properly.

Investment in the telecommunication sector can be categorized into the following types, ranked by profitability:

1. Maintenance of existing assets
2. Rehabilitation of existing assets
3. Replacement of analogue assets to digital
4. Expansion investment in profitable areas and services in big cities
5. Expansion investment into rural areas

Capital repair (maintenance) of existing assets is the most profitable and efficient investment in the telecommunication sector. However, this is not covered by PIP. The second most efficient investment is rehabilitation. The least profitable investment is expansion into rural areas.

Evaluation of pipeline foreign loan financed projects

A summary of the evaluation of the pipeline projects is shown in the table below. The Extension and Disaster project (CA14-II-5) is an expansion into unprofitable rural areas financed by an ODA loan. This project should be in the PIP Reserve. The Government Network project (CA15-II-5) requires a local portion from the state budget. This project is duplication of investment. Considering the current difficulty of the state budget, this project also should be in the Reserve. Renovation of Eastern and Southern Telecommunication Network 2 is an expansion into unprofitable rural areas. The local portion is financed by the Road Fund. This is inconsistent with the strategy that targets the separation of telecommunication service from state budget. This project also should be in the Reserve. For emergency and disaster purposes, utilizing satellite mobile phones can be more cost effective than Emergency Disaster Communication project. Considering the current difficulty of the state budget, this project also should be in the Reserve.

Table 27 Evaluation of Telecommunication Pipeline Projects

Code	Name	Evaluation
CA14-II-5	Rehabilitation and Extension of Telecommunication Network in Rural Areas and Emergency/ Disaster Communications	Investment in rural areas down to sum level is not commercially viable even with the latest technology. For emergency / disaster purpose, utilizing short wave or satellite mobile phones can be more cost effective.
CA15-II-5	Renovation of Government Communication Network	This project is not in the telecommunication sector. Considering the government's financial difficulties, duplication of investment is not prudent.
	Renovation of Eastern and Southern Telecommunication Network 2	Investment in rural areas down to soum level is not commercially viable even with the latest technology.
	Emergency Disaster Communication	For emergency / disaster purpose, utilizing satellite mobile phones can be more cost effective.

Not only from the view point of consistency with the medium-term strategy, but also from the aspect of absorption capacity, the total amount of current PIP seems too large.

Table 28 Required Local Portion – Telecommunication Projects

(US\$ mn)						
Stt	Project Name	Source	00-02	2000	2001	2002
OG	Western Network Renovation 2	PTA	0.45	0.14	0.20	0.11
OG	Eastern, Southern Renovation	PTA	1.67	0.37	0.84	0.46
PL	Extension and Disaster	PTA	3.70	2.00	1.00	0.70
PL	Government Network	State Budget	1.37	1.17	0.20	0.00
PL	Eastern, Southern Renovation 2	Road Fund	0.00	0.00	0.00	0.00
PL	Emergency / Disaster	State Budget	0.70	0.60	0.10	0.00
Total Local Portion Requirement			7.89	4.28	2.34	1.27

Stt: Project Status as of September 1999, OG: Ongoing, PL: Pipeline

The total revenue of MT in 1998 was Tug18,975 mn, or US\$22.7 mn. Its rental charge payment to MoF in 1998 was Tug4,918 mn, or US\$5.9 mn. PTA received less than half of this amount. If all projects are implemented, PTA has to bear US\$2.51 mn as the local portion. This will result in a further delay of necessary and profitable maintenance activity. GOM has to bear US\$1.77 mn in 2000. This must come from the state budget, which is suffering from large deficits.

Table 29 Comments on Telecommunications Technical Assistance Projects

TA21-II-5	Postal Development Master Plan and Introduction of New Services	Grant	This project is not in the telecommunication sector. The executing agency is the Mongol Post Company. Because this project covers rural finance, coordination between MoID and MoF is important.
TA22-II-5	Information and Communications Technology for Sustainable Human Development - State 2	Grant	This project is not in the telecommunication sector. The executing agency is the cabinet secretariat of the Government. This project is financially neutral for the telecommunication sector.

3.5.2. Sector PIP Needs for 2000-2002

Sector PIP for 2000-2002 consists of two ongoing projects and four pipeline projects. Total project cost is US\$42.87 mn, of which US\$34.98 mn or 81.6% is financed by ODA loans and grants.

Table 30 Sector PIP Needs for 2000 – 2002 Telecommunications

(US\$ mn)

Stt	Project Name	Main Source	00-02	2000	2001	2002
OG	Western Network Renovation 2	Germany	5.21	2.80	1.56	0.85
OG	Eastern, Southern Renovation	Germany	9.98	3.69	4.07	2.22
PL	Extension and Disaster	S. Korea	17.60	7.00	6.00	4.60
PL	Government Network	S. Korea	6.67	5.77	0.90	0.00
PL	Eastern, Southern Renovation 2	S. Korea	0.01	0.01	0.00	0.00
PL	Emergency / Disaster	S. Korea	3.40	2.80	0.60	0.00
Total Local Portion Requirement			42.87	22.07	13.13	7.67

Stt: Project Status as of September 1999, OG: Ongoing, PL: Pipeline

Ongoing projects: two

Rural Telecommunication Western Network Renovation 2

"Western Network Renovation 2" started in 1998. This project was to renovate trunk and switching in the Western area. Total investment was US\$15.30 mn, of that US\$13.20 mn (88.3%) was financed by KfW and Germany. In 1998, about one third of the investment was disbursed. In 1999, about one third of the investment is scheduled to be implemented. US\$5.21 mn (34.1%) of work will remain for 2000 - 2002.

Renovation of Eastern and Southern Telecommunication Network

The objective of this project is to replace analog switching to digital in the Eastern and Southern aimag centers. Total investment is US\$11.79 mn, of that US\$10.12 mn (85.8%) will be financed by Germany. Only 15.3% of investment is implemented in 1999 and the main work is scheduled to start in 2000. ADB has concerns on the absorption capacity of this project. In April 1999, ADB, the main bank of the telecommunication sector, requested updated financial analysis on this project.

Pipeline Projects: four

(CA14-II-5) Rehabilitation and Extension of Telecommunication Network in Rural Areas and Emergency / Disaster communications: Negative FIRR and low EIRR.

"Extension and Disaster" is a mixture of two components. The first is the extension of the network in the Eastern and Southern areas, not only to aimag centers but also down to the sum center level. Germany conducted a pre-feasibility study, which showed a negative FIRR and very low EIRR, due to low population density. The second component is Emergency / Disaster communications. No feasibility study was conducted on this component and this was given the lowest priority (rank number 8) in NDP 1998-2003. Total investment is US\$17.60 mn, of which US\$13.90 mn (79.0%) will be financed by Korea. Work is scheduled to start in 2000.

(CA15-II-5) Renovation of Government Communications Network: Duplication

"Government Network" is prepared and will be implemented by the Government Communication Department, not by PTA. This is a project to establish a secure governmental communication network that does not heavily depend on the basic telecommunication network provided by PTA. This means a duplication of investment in the telecommunication network. Because of the financial difficulty in the telecommunication sector, this project was given the second lowest priority (rank number 7) in NDP 1998-2003. Total investment is US\$6.70 mn, of which US\$5.30 mn (79.0%) will be financed by Korea. Work is scheduled to start in 2000.

Renovation of Eastern and Southern Telecommunication Network 2

The size of this project is very small - US\$0.015 mn. The local portion is financed by the road fund, not by PTA. Korea is offering this project.

Emergency Disaster Communication

Total investment is US\$3.40 mn, of that US\$2.70 mn (79.4%) will be financed by Korea. The local portion (US\$0.7 mn) is financed by the state budget, not by PTA. Information and Communication Division of MoID is negotiating this project with Korea.

3.5.3. Budget Consistent PIP for 2000-2002

All pipeline projects are excluded. Compared with the current PIP shown above, the total cost of projects is reduced from US\$42.87 mn to US\$15.19 mn. Pipeline projects that require a local portion from the state budget and road fund are eliminated. Thus, local portion requirements for the state budget and road fund in 2000 shrank from US\$1.77 mn to zero. To concentrate on maintenance and to postpone the new expansion investment in rural area is the most appropriate way to improve financial viability of the state owned basic telecommunication sector for the

medium term. Thus, "Rehabilitation and Extension of Telecommunication Network in Rural Areas and Emergency/ Disaster Communications" is deleted. As a result, the local portion requirement for PTA in 2000 shrank from US\$2.51 mn to US\$0.51 mn.

Table 31 Budget Consistent PIP for 2000-2002 Telecommunications

(US\$ mn)

Stt	Project Name	Main Source	00-02	2000	2001	2002
Project Cost						
OG	Western Network Renovation 2	German loan	5.21	2.80	1.56	0.85
OG	Eastern, Southern Renovation	German loan	9.98	3.69	4.07	2.22
Total Project Cost			15.19	6.49	5.63	3.07
Local Portion Requirement						
OG	Western Network Renovation 2	PTA	0.45	0.14	0.20	0.11
OG	Eastern, Southern Renovation	PTA	1.67	0.37	0.84	0.46
Total Local Portion Requirement			2.12	0.51	1.04	0.57

Stt: Project Status as of July 1999, OG: Ongoing, CM: Committed

"Rural Telecommunications Western Network Renovation 2" contains not only loan but also a grant portion of US\$1.00 mn. Thus Budget PIP projects for 2000-2002, which covers only loan and local portions, is smaller than the total project cost shown in the above table. Budget consistent PIP projects for 2000-2002 amount to US\$14.19 mn.

Table 32 Budget Consistent PIP projects for 2000-2002 Telecommunications

Project Name	Source	2000-2002		2000		2001		2002		
		Total	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
Foreign loan financed project										
Ongoing		14.19	2.11	12.08	0.51	5.66	1.03	4.15	0.57	2.27
Rural Telecommunications Western Network Renovation-2	Loan	3.77	0.00	3.77	0.00	2.35	0.00	0.92	0.00	0.50
	Own	0.44	0.44	0.00	0.14	0.00	0.20	0.00	0.11	0.00
	Total	4.21	0.44	3.77	0.14	2.35	0.20	0.92	0.11	0.50
Renovation of Eastern and Southern Telecommunication Network	Loan	8.31	0.00	8.31	0.00	3.31	0.00	3.23	0.00	1.77
	Own	1.67	1.67	0.00	0.37	0.00	0.84	0.00	0.46	0.00
	Total	9.98	1.67	8.31	0.37	3.31	0.84	3.23	0.46	1.77
TOTAL, US\$ mn		14.19	2.11	12.08	0.51	5.66	1.03	4.15	0.57	2.27
					6.17		5.19			2.83
Exchange rate					Tog1,030		Tog1060.9			Tog1071.5
TOTAL, Tog mn		14,892	2,229	12,664	526	5,831	1,097	4,405	605	2,428
					6,357		5,502			3,033
Budget financed project		0	0	0	0	0	0	0	0	0
GRAND TOTAL, Tog mn		14,892	2,229	12,664	526	5,831	1,097	4,405	605	2,428

3.6. Transport

3.6.1. Overview

Government policy for the transport sector has been aimed at the rehabilitation of transport assets and the transformation of sector management and financing to respond to the needs of the market economy. The transport sector PIP has reflected this policy and in each sub-sector urgently required investments have been pursued to address the most acute issues. Since 1993, 44.8% of foreign loan projects and 42.5% in grant assisted projects have been in the transport sector. There were twelve projects during the period under review, four each in the road and railway sub-sectors, and two each in the aviation and public urban transport sub-sectors. Among the four sub-sectors, the highest level of investment was made in the railway sub-sector, followed by road, aviation and public urban transport. The major investments in each sub-sector are:

Road Sub-sector

Four projects have been implemented or are under implementation to rehabilitate and upgrade existing roads.

- 1) UB-Altanbulag Project was undertaken in conformity with the priorities established in the Medium Term Road Master Plan (total project cost--US\$27.5 mn, out of which the FC component was US\$22.4 mn).
- 2) Bayan Davaa-Erdene Soum Project was undertaken by grant (US\$19.3 mn).
- 3) Dahrhan-Erdenet Project was undertaken (total project cost--US\$23.2 mn, out of which the FC component was US\$18.2 mn)
- 4) Kharkhorin-Tsetserleg-Altai-Nomrog Project was undertaken as part of the Sector Rehabilitation Project (total sector rehabilitation project cost--US\$36.3 mn, out of which the FC component was US\$30 mn).

In addition, during the last five years, approximately Tog10.7 billion were invested in the road sub-sector from the Road Fund.

Railway Sub-sector

Four projects have been implemented or are under implementation to rehabilitate and relieve capacity constraints.

- 1) A Railway Rehabilitation Project was undertaken mainly to replace aged locomotives, railcars, etc. (total project cost was US\$ 26.9 mn).
- 2) Railway Rehabilitation was undertaken to purchase communication, control equipment, etc. (total cost was US\$38.5 mn).

- 3) The Freight Reloading Facilities Project was undertaken by grant (US\$31.1 mn) to ensure smooth transshipment at the China-Mongolia border at Zamyn-Uud.
- 4) A Railway Rehabilitation Project was undertaken to provide spare parts for locomotives, freight wagons, etc. as part of the Sector Rehabilitation Project (US\$36.3 mn).

Aviation Sub-sector

Two projects have been implemented, or are under implementation, to upgrade airport facilities and air traffic control and management systems to meet ICAO standards.

- 1) Ulaanbaatar Airport Project was undertaken to remove existing infrastructure constraints and to support reliable and safe all weather operations (total project cost was US\$49 mn, out of which FC contributed US\$36 mn).
- 2) National Air Navigation Project was undertaken to address the operational and safety shortfalls of the Mongolian air traffic and air management systems (total project cost was US\$26.6 mn, of which the FC component was US\$21.2 mn).

Public Urban Transport Sub-sector

Two projects have been implemented, one to replace obsolete buses and increase the capacity of public transport vehicles and one to purchase new buses and trolley-buses.

- 1) Urban Transport Sub-project was undertaken to purchase new buses and trolley-buses as part of the Sector Rehabilitation Project.
- 2) Public Urban Transport Project was undertaken by grant (US\$20.8 mn) to replace old buses and add new ones, to provide spare parts and to build a repair shop.

3.6.2. Sector PIP Needs for 2000-2002

In order to develop an integrated PIP strategy, all potential investment must be taken into account. Here the total needs of the sector are determined by considering all current and potential projects, including domestic financing as well as foreign loans and grants.

Need for foreign loan financed projects for 2000-2002 reaches US\$126.987 mn (Tog134,041.888 mn), as described in appendix 3, stemming from six ongoing (US\$43.981 mn), and five pipeline (US\$83.006 mn) projects.

Ongoing projects:

- Railway Transportation Rehabilitation – OECF loan of US\$10.92 mn,
- National Air Navigation Development – ADB financed loan totalling US\$4.15 mn,
- Darkhan – Erdenet Road Rehabilitation – totalling US\$12.042 mn,

- UB – Altanbulag Road Rehabilitation – totalling US\$9.32 mn,
- Kharkhorin – Tosontsengel Gravel Road – totalling US\$3.502 mn, and
- The Transport Rehabilitation Project – totalling US\$4.047 mn

Pipeline projects:

- Construction of the Nalaikh-Maant-Choir Road - US\$13.503 mn,
- Rehabilitation of the Road between UB-Erdencesant-Arvaiheer US\$20.6 mn,
- Erdencesat – Arvaiheer – Hovd – Ulaangom Gravel Road - US\$13.9 mn,
- Improvement & Rehabilitation of Road Network in UB - US\$25 mn, and
- The Railway Rehabilitation Project - US\$10 mn.

An allocation of Tog43,820.6 mn has been made for purely domestic financed projects over the years 2000-2002, primarily focused on roads and bridges.

Total PIP needs for 2000-2002 reach Tog177,862 mn, 75% of which is foreign financed .

There are five TA projects listed. While all TA projects are consistent with sectoral objectives, it is too early to initiate the Road Development-III project.

3.6.3. Budget Consistent PIP for 2000-2002

The budget consistent PIP contains both domestic financed and foreign loan financed projects, which will have to be co-ordinated with the central government budget.

Ongoing Projects

There are six ongoing foreign loan financed projects: (1) The OECF financed Railway Transport Rehabilitation Project will be completed by 2002. The Mongolian railway is superannuated, and furthermore, natural disasters frequently occur during the rainy season, causing the suspension of train services. (2) The National Air Navigation Development Project is on schedule, and the CAA, the executing agency, is expected to be able to finance the local currency cost. (3) The Transport Sector Rehabilitation Project has almost been completed, with dwindling investments through 2002. As mentioned, US\$2 mn remains unutilized, for which the government is applying to purchase vehicle inspection equipment. (4) The UB-Darkhan-Altanbulag Road Rehabilitation Project encountered financial difficulties in obtaining local currency (Road Fund). As a result, implementation has been delayed. It is necessary to secure local currency in accordance with the implementation schedule. (5) The Darkhan-Erdenet Road Improvement Project is facing an implementation problem due to the selection of an insufficiently qualified contractor. Completion of the Project will be delayed and, accordingly, the disbursement schedule may have to be adjusted. (6) Construction of the WB financed gravel road between Kharkhorin and Tosontsengel has recently begun.

Committed projects: none

Pipeline Projects

Two grant projects are in the pipeline, Improvement & Rehabilitation of the Road Network in UB and The Railway Rehabilitation Project. An economic feasibility indicates an EIRR of 33% for Improvement & Rehabilitation of the Road Network in UB. Deterioration of roads in UB is accelerating due to an increase in the number of vehicles, especially heavy trucks, and poor maintenance. This project will be financed by Japan. The Railway Rehabilitation Project (EIRR--13.1%) is also a grant pipeline project.

Excluding grant aid projects, three projects exist in the pipeline, all within the road sub-sector. An economic feasibility study has been carried out, which indicates an acceptable economic rate of return for the Construction of the Nalaikh-Maant-Choir Road Project (EIRR--15.1%). This Project is crucial because it constitutes a section of the South Corridor to China. The government plans to complete the South Corridor by 2005. The Road Rehabilitation Project between UB-Erdenesant-Arvaiheer, is vital to access the western region of the country. Therefore, to achieve the objective of national integration, the Project should be pursued. The third pipeline project is a gravel road stretching westward from Arvaiheer to Hovd and Ulaangom. Essentially this is a westward extension of the UB – Arvaiheer road, which can help with national integration objectives. Unfortunately budget constraints are such that we can not recommend this project for PIP investment within the next three years. We do recommend, however, that this project remain on the pipeline list for later consideration.

In summary, the following two projects are recommended for transportation sector PIP pipeline projects:

- 1) Road Rehabilitation Project between UB-Erdenesant-Avaiheer - funded
- 2) Construction of the Nalaikh-Maant-Choir Road Development Project

Budget Financed Projects

Pure domestically financed projects are best spent on maintenance and rehabilitation, as opposed to expansion. We project road maintenance, to consume 72.3% (Tog 10,128.0 mn) of the domestic financed budget (Tog 14,010 mn).

The remaining amount will be invested in the railway sub-sector, mainly for renovation of rail sleepers. Although MTZ, as an independent entity, is theoretically responsible for financing this sort of upgrade on its own, the tremendous need and the economy wide repercussion of a breakdown in the railways, are reason enough for public financing of this multi-year project. Due to constraints, the budget we have prepared includes 40% of the WB estimate for sleeper renewal funding needs over the 2000 – 2002 time frame.

3.7. Social Development

3.7.A. Health Sector

3.7.A1. Overview

In response to severe budgetary difficulties, ongoing health care reform strategy is to improve the efficiency of public health services, strengthen the new health insurance system and eliminate excess health facilities and health personnel to ease the budget burden of health care. Non-communicable and chronic diseases are increasing. More effort is required to disseminate and promote PHC (primary health care) to improve health standards and reduce long-term health expenditures. In line with this, some capital-asset-heavy and curative-care-centered interventions should be reduced. There is also an urgent need to reform Mongolia's pension system to ensure medium-term financial sustainability.

The Health Sector Development Program, with the support of the ADB, has been effective, however, its programs do not sufficiently assist with Mongolia's attempt to move from curative care to PHC and preventive intervention.

A Health Sector Development Phase II Program, also with the support of ADB, will need to reinforce health sector reforms and support continued efforts in Mongolia to spread and establish PHC, which has yet to be absorbed nationally.

3.7.A2. Sector PIP Needs for 2000-2002

In order to develop an integrated PIP strategy, all potential investment must be taken into account. Here the total needs of the sector are determined by considering all current and potential projects, including domestic financing as well as foreign loans and grants.

PIP needs for 2000-2002 in the health sub-sector will reach US\$39.412 mn. There is one ongoing project and 5 pipeline projects with total cost of US\$26.3 mn..

Table 34 PIP Needs for 2000-2002 Health

Project Name	2000-2002		
	Total (US\$ mn)	Domestic (US\$ mn)	Foreign (US\$ mn)
ONGOING	13.112	2.932	10.18
Health Sector Development Project	13.112	2.932	10.18
COMMITTED	0	0	0
PIPELINE	26.3	1	25.3
Procurement of Modern equipment for Central Military Hospital	2	0	2
Strengthening Emergency Care in Ulaanbaatar	6	0	6
Strengthening the Maternal and child Health Care delivered by MCRC	5	0	5
Establishing Regional Diagnostic and Treatment Center	3.2	0.9	2.3
Strengthening the Diagnostic Laboratory & Blood Center	10.1	0.1	10
TOTAL FOREIGN FINANCED NEEDS	39.412	3.932	35.48

Foreign financed needs in education amount to US\$14.383 mn, giving a combined total of US\$53.975 mn for the social development sector, or Tog56,553.714 mn.

An allocation of Tog15,148.8 mn has been made for purely domestic financed projects over the years 2000-2002, resulting in total needs of Tog71,702.514 mn.

3.7.A3. Budget Consistent PIP for 2000-2002

The budget consistent PIP contains both domestic budget and foreign loan financed projects, which will have to be co-ordinated with the central government budget.

There is only one ongoing project within the health sector - The ADB financed Health Sector Development Program (Phase II). Health sector reforms should be reinforced in line with the Sector Development Program.

The Japanese government has recently decided to grant medical equipment, particularly for diagnosis, to the Second National Hospital. The total budget is expected to be around JPY883 mn. The hospital supposedly has capacity to ensure the recurrent and maintenance costs, partly through user charges. This project could take priority after a detailed analysis in line with the above mentioned priorities.

Table 35 Budget Consistent PIP for 2000-2002 Social Development

US\$ mn

Project Name	Financing Source	2000-2002		2000		2001		2002		
		Total	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
FOREIGN LOAN FINANCED PROJECTS										
Ongoing		18.495	3.315	15.180	0.452	4.252	1.898	5.129	0.964	5.799
Education	Budget	0.383	0.383		0.030		0.044		0.310	
Development Project I	Loan	5.383	0.383	5.000		0.623		0.891		3.486
Education Development Project I		5.383	0.383	5.000	0.030	0.623	0.044	0.891	0.310	3.486
Total										
Health Sector	Budget	2.932	2.932		0.422		1.855		0.655	
Development Project	Loan	10.180		10.180		3.628		4.238		2.313
Health Sector Development		13.112	2.932	10.180	0.422	3.628	1.855	4.238	0.655	2.313
Project Total										
TOTAL, US\$ mn		18.495	3.315	15.180	0.452	4.252	1.898	5.129	0.964	5.799
Exchange rate										
		19,547.415	3,512.885	16,034.530	465.560	4,379.480	2,013.960	5,441.170	1,033.365	6,213.880
TOTAL, Tog mn		19,547.415			4,845.040		7,455.130		7,247.245	
BUDGET FINANCED PROJECTS										
Budget Financed Projects, Tog mn			15,148.800		1,880.000		6,542.500		6,726.300	
GRAND TOTAL, Tog mn			34,696.215		6,725.040		13,997.630		13,973.545	

3.7.B Poverty Alleviation

3.7.B1. Overview

The National Poverty Alleviation Program addresses poverty in a wide sense, going beyond simple concerns to address issues related to access to social services. To further emphasize the multi-sectoral nature of the Program, the scope was revised by the Government in September 1997. US\$7.0 mn has been disbursed out of the pledged US\$15.3 mn, as of June 1999.

3.7.B2. Sector PIP Needs for 2000-2002

Two projects, "Poverty Alleviation for Vulnerable Groups" by the WB (US\$10 mn), and "Employment Generation" by the ADB (US\$3 mn) are ending in 1999. Both projects have shown satisfactory results. There are no "committed" or "pipeline" projects.

3.7.B3. Budget Consistent PIP for 2000-2002

Although the National Poverty Alleviation Program has been viewed positively, budget constraints prevent continuation at this stage.

3.7.C. Education Sector

3.7.C1. Overview

Improving management of the sector and creating a more effective, decentralized system. This entails revamping the mandate, functions, and organizational structure of the Ministry of Science, Technology, Education and Culture (MOSTEC) and the education-related departments in local governments.

Various grant aid projects have been implemented in the sector, some of which have aimed not only at providing equipment but also at producing manuals for teachers, conducting training and seminars, and the promotion of education in rural areas. However, the capacity MOSTEC should be further improved for creating the sector policy, co-ordinating external resources and generating good compound effects.

3.7.C2. Sector PIP Needs for 2000-2002

In order to develop an integrated PIP strategy, all potential investment must be taken into account. Here the total needs of the sector are determined by considering all current and potential projects, including domestic financing as well as foreign loans and grants.

PIP needs for 2000-2002 in the sector will reach US\$14.383 mn. There is one ongoing and two pipeline projects.

Table 36 PIP Needs for 2000-2002 Education

Project Name	2000-2002		
	Total (US\$ mn)	Domestic (US\$ mn)	Foreign (US\$ mn)
ONGOING	5.383	0.383	5
Education Development Project I	5.383	0.383	5
COMMITTED	0	0	0
PIPELINE	9	0	9
Improve school building supply for General Ed.	5	0	5
Strengthening of the Technical Base of Research Institutions	4	0	4
TOTAL FOREIGN FINANCED NEEDS	14.383	0.383	14

Foreign financed needs in health amount to US\$39.412 mn, giving a combined total of US\$53.975 mn for the social development sector, or Tog56,553.714 mn.

An allocation of Tog15,148.8 mn has been made for purely domestic financed projects over the years 2000-2002, resulting in total needs of Tog71,702.514 mn.

3.7.C3. Budget Consistent PIP for 2000 - 2002

The budget consistent PIP contains both domestic financed and foreign loan financed projects, which will have to be co-ordinated with the central government budget.

There are no committed projects and just one ongoing project, the "Education Development Project, which will require US\$5.383 mn from 2000-2002.

There are no committed or pipeline project in the budget consistent PIP.

No pipeline project is recommended. MOSTEC needs to introduce more innovative measures to sustain the general education under budget constraints, for example, community involvement to support the basic education mechanism and so forth.

The Japanese government has recently decided to support the construction of primary schools as a grant aid project; the total amount of the budget will be JPY3 bn. However, only after careful examination and prioritisation based on detailed information, the project can be listed in PIP.

3.8. Environment

3.8.1. Overview

No loan projects have been formulated in the environment sector in the past. However, in order to fully understand the project formation process, we will analyze the past investment trends of the sector.

The national environment budget for 1994-1998 was between Tog2,000 mn and Tog4,400 mn annually. The main grant projects financed by donor countries and international organizations for environmental protection in 1990-1998 were biology, information, climate, forest and natural resources. These projects occupied over 80% of the total budget. The main financiers were Japan, the World Environmental Development Foundation, and Germany. These three contributed over 75% of the total grant amount.

The ratio of environmental expenses to GDP in 1998 was 0.41%. Recurrent expenditures accounted for about 70% of the environmental budget. Of the 24 grant projects financed by donor countries and international organizations for the Environment Sector in 1990-1998, 16 have been completed and 8 are presently being implemented. Of the total capital, 4.21% has been invested in planning, valuation, program and management, 30.45% in biology, 5.34% in desert and land, 21.05% in forest and natural resources, 0.61% in water and air pollution, 31.11% in information and climate and 3.44% in other categories.

Table 37 Environmental Grant projects: 1990-1998

	Type	Cost	Percentage (%)
1	Planning, valuation, program, management	1.019	4.21
2	Biology	7.339	30.45
3	Desert, Land	1.29	5.34
4	Forest, natural resources	6.126	21.05
5	Pollution water, air	0.15	0.61
6	Information, climate	7.497	31.11
	Others	0.83	3.44
	TOTAL	24.251	100.00

Source: Ministry of Nature and Environment

The main projects are:

- (1) Strengthening of the Meteorological Forecasting Project - US\$7 mn grant.
- (2) Eastern Mongolia Biodiversity Protection Project - US\$5.1 mn grant.
- (3) Environmental Protection and Buffer Zone Development Project - US\$2.94 mn grant.

3.8.2. Sector PIP Needs for 2000-2002

In order to develop an integrated PIP strategy, all potential investment must be taken into account. Here the total needs of the sector are determined by considering all current and potential projects, including domestic financing as well as foreign loans and grants.

Ongoing projects:

- Protection of biological groups in Eastern Mongolia – a US\$1.43 mn German grant
- Upgrading of the Meteorological Observation and Weather Forecasting System - with a US\$3 mn grant from Japan
- Cadastral Survey and Land Registration – an ADB funded loan which, with the local component, will amount to US\$12.18 mn over the period

Pipeline projects:

- Reduction of Ulaanbaatar air pollution – a US\$1.1 mn WB financed project
- UB fire prevention equipment improvement – a US\$5.2 mn grant from Japan (an additional US\$2 mn has been granted in 1999)
- Further upgrading of the Meteorological Observation and Weather Forecasting System – with a US\$9.5 mn Japanese grant

The above foreign grant total comes to US\$19.13 mn, while that of foreign financed loans comes to US\$13.28 mn. Combining these amounts to US\$32.41 mn, or Tog34,039.148 mn.

An allocation of Tog640.9 mn has been made for purely domestic financed projects over the years 2000-2002, all for purchasing equipment.

Thus, total PIP needs for 2000-2002 reach Tog34,680.048 mn, over 98% of which comes from foreign financed sources.

3.8.3. Budget Consistent PIP for 2000-2002

The budget consistent PIP contains both domestic financed and foreign loan financed projects, which will have to be co-ordinated with the central government budget.

Ongoing and Committed Projects

There are 2 loan-financed projects in the priority PIP for 2000-2002, one ongoing and one pipeline. In fact, aside from removing loans, there are no changes from the needs based PIP calculation described earlier.

The ongoing project is the ADB financed Cadastral Survey and Land Registration to be completed by 2003. The pipeline project is the Reduction of Air Pollution in Ulaanbaatar. The Government's Action Program for air protection has a goal of reducing air pollution in Ulaanbaatar. The major pollution sources are stoves in ger districts, automobile emissions, coal-fired power plants and local heating chimneys. The objective of the project is to improve combustion and efficiency and to decrease hazardous emissions. This project will be financed by local (US\$0.1 mn) and WB loan (US\$1.0 mn). This project is consistent with the sector priorities and should be implemented.

Table 38 Budget Consistent PIP for 2000-2002 Environment

Project Name	Financing Source	2000-2002		2000		2001		2002		
		Total	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
FOREIGN LOAN FINANCED PROJECTS (US\$ mn)										
Ongoing		12.180	1.700	10.480	0.125	2.793	0.372	3.032	1.203	4.655
Cadastral Survey and Land Registration	Budget	1.700	1.700		0.125		0.372		1.203	
	Loan	10.480		10.480		2.793		3.032		4.655
Cadastral Survey and Land Registration Total		12.180	1.700	10.480	0.125	2.793	0.372	3.032	1.203	4.655
Pipeline		1.100	0.100	1.000	0.062	0.312	0.024	0.445	0.014	0.243
Reduction of air pollution of Ujaanbaatar/air quality, stoves/	Loan	1.000		1.000		0.312		0.445		0.243
	Own	0.100	0.100		0.062		0.024		0.014	
Reduction of air pollution of Ujaanbaatar/air quality, stoves/ Total		1.100	0.100	1.000	0.062	0.312	0.024	0.445	0.014	0.243
Total, US\$ mn		13.280	1.800	11.480	0.187	3.105	0.396	3.477	1.217	4.898
				Total, 030.0		Total, 060.9		Total, 071.5		
Total, Tog mn		14,051.852	1,916.742	12,135.110	192.610	3,197.920	420.116	3,689.110	1,304.016	5,248.080
		14,051.850		3,390.530		4,109.226		6,552.096		
BUDGET FIANCED PROJECTS										
Budget Financed Projects, Tog mn		640.900		360.000		138.500		142.400		
GRAND TOTAL, Tog mn		14,692.750		3,750.530		4,247.726		6,694.496		

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for ensuring transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to ensure the validity of the results.

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4. The fourth part of the document discusses the various statistical methods and techniques used to analyze the data. It covers topics such as hypothesis testing, regression analysis, and correlation analysis, among others.

5. The fifth part of the document discusses the various ways in which the results of the analysis can be presented and communicated. It includes information on the use of tables, graphs, and charts to effectively convey the findings of the study.

6. The sixth part of the document discusses the various factors that can influence the results of the analysis. It includes information on the potential for bias and error, as well as the importance of controlling for these factors to ensure the accuracy of the results.

7. The seventh part of the document discusses the various ways in which the results of the analysis can be used to inform decision-making. It includes information on the use of the results to identify trends and patterns, as well as to develop strategies and policies based on the findings.

8. The eighth part of the document discusses the various ways in which the results of the analysis can be used to improve the quality of the data collection and analysis process. It includes information on the use of the results to identify areas for improvement and to develop new methods and techniques for data collection and analysis.

9. The ninth part of the document discusses the various ways in which the results of the analysis can be used to inform the development of new products and services. It includes information on the use of the results to identify market needs and to develop new products and services that meet these needs.

10. The tenth part of the document discusses the various ways in which the results of the analysis can be used to inform the development of new policies and procedures. It includes information on the use of the results to identify areas for improvement and to develop new policies and procedures that address these areas.

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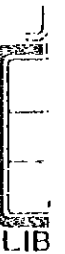
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