

**PROMOTION OF INFRASTRUCTURE  
DEVELOPMENT IN MYANMAR**

## CONTENTS

	Page
<b>INTRODUCTION</b> .....	1
<b>ENERGY SECTOR</b> .....	6
<b>I. Infrastructure planning and policies</b> .....	6
<b>II. Private sector participation</b> .....	10
<b>PUBLIC WORKS</b> .....	12
<b>I. Infrastructure planning and policy</b> .....	12
<b>II. Private sector participation</b> .....	13
<b>RAIL TRANSPORTATION SECTOR</b> .....	16
<b>I. Infrastructure planning and policies</b> .....	16
<b>II. Private sector participation</b> .....	16
<b>AVIATION AND MARITIME TRANSPORT</b> .....	17
<b>I. Infrastructure planning and policies</b> .....	17
<b>COMMUNICATION, POST AND TELEGRAPHS SECTOR</b> .....	19
<b>I. Planning and policies</b> .....	19
<b>TOURISM</b> .....	22
<b>I. Infrastructure planning and policies</b> .....	22
<b>II. Private sector participation</b> .....	24
<b>DEVELOPMENT OF BORDER AREA AND NATIONAL RACES</b> .....	25
<b>I. Infrastructure planning and policies</b> .....	25

### List of Tables

<b>Table 1 Comparison of the state sector investment by broad sectors during the three periods</b> .....	3
<b>Table 2 Myanmar infrastructure programme, priority project list (Road sector improvement)</b> .....	14-15

### List of Appendix

<b>Appendix 1 Plan for roads and transportation sector</b> .....	26
<b>Appendix 2 Plan for housing construction sector</b> .....	26
<b>Appendix 3 Plan for energy sector</b> .....	27
<b>Appendix 4 Plan for communication sector</b> .....	27

## INTRODUCTION

### PROMOTION OF INFRASTRUCTURE DEVELOPMENT IN MYANMAR

#### General Present conditions

1 Attaching great importance for the development of infrastructural facilities in promoting social, economic, political, national unity and security and defence of a country, the State law and Order Restoration Council has specifically earmarked the "provision of secure and smooth transportation" as one of the four main tasks it has set for itself to be undertaken during the tenure of office. Accordingly determined and allot efforts had been made for the accelerated advancement of infrastructural development by taking various measures to mobilize the resources. In the first phase i.e. from 1988/89 to 1991/92 top priority was given for the restoration of law and order and stabilization of the situation in general while concurrently nationwide campaigns to cleanse, beautify and renovate cities, towns, villages were carried out. Within this context existing roads, lanes, bridges, buildings were repaired, renovated, upgraded and improved while slums and squatters were cleansed, rehabilitated and resettled. New towns were established and new resettlements were developed. Great efforts were made to make the cities and towns especially the capital city Yangon to possess the characteristics of a modern metropolitan city. These endeavours were undertaken by the State taking various measures such as allocating a significantly higher budget allotment than the previous period, mobilizing contribution by the people in kind and labour and by systematically and extensively organizing the communities to undertake community related work on self-help basis or voluntary basis.

2 The second phase of a relentless drive for infrastructure development started approximately in 1991/92 and the momentum has been maintained and continued at the present time. The second phase of accelerated infrastructural development drive was undertaken concurrently while serious and earnest efforts were made to successfully implement the first Short Term Plan (1992/93 to 1995/96) in order to realize the twin objectives of complete economic recovery with stabilization and to lay down sound and stable foundation for sustained development in the future. Development works for the cities and towns are being undertaken to realize the Master Plans by enacting new laws bestowing independent and extensive autonomy in financial and managerial matters and closely monitored and coordinated by the highest level. Likemanner infrastructural development projects relating to construction of new and upgrading of existing roads, bridges, electric power, irrigation and embankment works, transport and communications etc. are almost invariably implemented as "special projects" giving top priority for the implementation and closely monitored and coordinated at the highest level. Numerous new infrastructural related development projects were implemented in recent years while existing infrastructural facilities in various fields are renovated and upgraded. Under this circumstances much progress were achieved in promoting infrastructural development in the last few years. For instance the length of motor roads had been significantly increased by almost 3,000 miles which include construction and improving some 2500 miles in far flung border areas where national minority races live. The length of roads upgraded and renovated during the period was even much greater than construction of new roads. Likewise the railway track mileage was extended by construction of approximately 530 miles while many more track mileage is been under construction. Numerous major bridges including four bridges across the

Ayeyarwaddy river are being constructed while the construction of numerous bridges were completed. The above mentioned road mileages do not include infrastructural projects extensively undertaken by the Yangon and Mandalay City Development Committees and by about 300 townships development committees in the whole country which had undertaken extensive infrastructural development works with their own finance or in cooperation with the people.

3 In addition to the above infrastructural development works a massive and enhanced infrastructural development programmes are being implemented in agriculture by way of implementing numerous large and small scale irrigation and embankment networks all over the country. Having given priority for the enhanced development of agriculture, large amount of development expenditures had been allocated for the construction of irrigation and embankment facilities. An annual average of 12.4 per cent out of the total investment by the State was expended in agriculture during 1992/93 to 1995/96 as compared with an annual average of 5.8 per cent during the previous period, i.e. 1988/98 to 1991/92.

4 Although special emphasis had been given for the development of electric power, transport and communications, the development in these areas had been somewhat constrained due to shortages of foreign exchanges where foreign exchanges content is considerably much higher. Nevertheless ways and means are being explored to boost the capacities of these areas and considerable headway has been made in enhancing their capacities. While making best efforts for considerable expansion of capacities of electric power and transport and communications from its own resources, ways and means are being explored to mobilize cooperation and contribution of private sector both internal and external. In the transport sector good progress has been made in coopting the cooperation of the private sector while modalities are being coordinated for private sector participation in the field of electric power production.

5 A look at the investment expenditures on infrastructure by the State for the three periods, i.e. 1981/82 to 1985/86, 1988/89 to 1991/92 and 1992/93 to 1995/95 indicates that during the period 1981/82 to 1985/86, the State expended an annual average of 31.1 per cent on infrastructural development which included investment in agriculture. The share increased to 36.9 per cent during 1988/89 to 1991/92 and further increased significantly to 47.4 per cent during 1992/93 to 1995/96. Within infrastructure as a whole the share of investment in agriculture (mostly in irrigation and therefore taken as infrastructural building) at 12.4 per cent was highest during 1992/93 to 1995/96 as compared with the previous two periods. This shows the change of priority setting giving top priority to the development of agriculture sector. In the case of the electric power the share of investment was declining from period to period i.e. from 7.8 per cent during 1981/82 to 1985/86 to 7.1 per cent during 1988/89 to 1991/92 and further declined to 3.8 per cent during 1992/93 to 1995/96. This is probably due to shortage of foreign exchange which hinders undertaking of electric power projects which requires high exchange content and relatively longer period of gestation. It is to be pointed out that electric power projects that were largely financed with loans and aids before 1988 registered drastic fall in loan financing that probably explained for the fall in share of investment in electric installation. It is partly due to the fact that exploration and production of oil and gas have been largely privatized. Construction sector comprising construction of roads and bridges registers steady rise in share of investment through successive periods which undoubtedly reflects efforts of the government to enhance roads transportations. Transport and Communications sector also registers increases its share of total State investment during the successive periods probably due

to the ability to procure credits to finance the projects. However, the transport and communication more than any other sectors needs to be considerably augmented especially to replace and augment the rolling stocks and assets to boost transport capacities significantly in order to enable to sustain the present growth rates of the economy. A comparison of State sector investment by broad sectors during the three periods is showed below.

**Table 1 Comparison of the state investment by broad sectors during the three periods**

Sr.	Particulars	Annual average from 1981/82 to 1985/86		Annual average from 1988/89 to 1991/92		Annual average from 1992/93 to 1995/96	
		Kyat in million	Share (%)	Kyat in million	Share (%)	Kyat in million	Share (%)
No.		3	4	5	6	7	8
<b>1</b>	<b>Productive sectors</b>	4,449.4	63.3	1,750.2	20.8	3,944.0	16.7
	1 Agriculture	753.4	10.7	492.2	5.8	2,932.0	12.4
	2 Others	3,696.0	52.6	1,258.0	14.9	1,012.0	4.3
<b>2</b>	<b>Infrastructures sectors</b>	1,436.2	20.4	2,622.3	31.1	7,266.8	30.7
	1 Power	546.2	7.8	597.8	7.1	905.8	3.8
	2 Construction	286.0	4.1	1,014.0	12.0	3,197.2	13.5
	3 Transport and Communications	604.0	8.6	1,010.5	12.0	3,163.8	13.4
<b>3</b>	<b>Services and trade sectors</b>	1,142.0	16.3	4,055.5	48.1	12,423.2	52.6
	Total	7,027.6	100.0	8,428.0	100.0	23,634.0	100.0

## PLAN FOR INFRASTRUCTURAL DEVELOPMENT IN MYANMAR

### Objectives of the plan

6 Having successfully implemented the Short Term Four Year Plan from 1992/93 to 1995/96 by surmounting numerous difficulties and shortcomings through complete commitment, leadership qualities and ingenuity achieving a very encouragingly high average annual growth rate of 8.2 per cent as against the projected annual average growth of 5.1 per cent, the government has launched a Five Year Short Term Plan from 1996/97 to 2000/2001. The main objectives of the plan is naturally to continue making sustained efforts to sustain the growth rate achieved in recent years on a long term basis. In order to achieve sustained growth rates for a long term basis to lay down foundation for a modern developed economy, it has been assessed that the economy needs to achieve a certain measure of macro economic stability as a precondition, the quicker the better and to build up infrastructural capacities to effectively support the economy hand in hand with the development rate of the overall economy or at a faster rate than overall development of the economy. Consequently the plan has laid down certain fiscal and monetary measures to be undertaken to achieve overall macro economic stability especially with regard to the need to reduce inflationary pressure to a tolerable level as much as possible and to find ways and means to enable the private sector to participate extensively in taking up infrastructural development programmes based on the experiences of the last few year coupled with experiences of other countries. Meanwhile, the government has accorded high priority to the development of infrastructural capacities. Accordingly a significantly high percentage amounting to 46 per cent of total State investment has been allocated for the development of infrastructural development programmes in the plan. Relatively high percentages (8.7 per cent) and (13.0 per cent) of the total State investment have also been provisionally allocated for the development of elective power and transport and communication respectively. To enhance electricity capacity six electric power projects are being implemented and another 18 projects have been listed for implementation during the plan to considerably boost power installed capacity by approximately 600 m.w. representing a substantial increase by 60 per cent during the plan period as compared with the base year of the plan. While measures are being taken to boost the power supply, concurrent measures are being taken to reduce wastage and losses of electricity generation through proper maintenance of distribution lines and effective supervision and control of illicit power connections and utilization. The transport and communication sector has been allocated approximately the same level of the share of State investment of about 13.0 per cent in the plan as was in the past few years. However, initiatives have been initiated and ways and means are being sought for financing the development of transport and communications through sources such as supplier credits and other sources. The share of expenditure allocated for construction of roads, and bridges has been provisionally estimated to be lower than the previous periods. However, when annual plan are coordinated, the allocation is usually much higher than originally estimated. Investment expenditures allocated for construction of irrigations and dams has been provisionally allocated at much higher level than the previous periods. This is probably the reflection of continued emphasis for accelerated development of agriculture which continues to be given special emphasis along with related industries such as processing and manufacturing, electric power, transport and communications and financial sector.

7 The share of processing and manufacturing sector in total State investment continues to

be significantly low as is the Mining sector as a result of privatization of these sectors especially to direct foreign investment and indigenous private sector investment. As a matter of fact, the shares of State investment in productive sector have considerably been reduced during market economic system period in contrast to pre-market economic system. This is due to fact that efforts have markedly shifted to building up of infrastructural capacities and provision of social and administrative services leaving the productive fields to be taken up largely by the private sector. Thus the productive sectors comprising agriculture, livestock and fishery, forestry, mining and processing and manufacturing which took up an average of 63.3 per cent of total State Sector investment during 1981/82 to 1985/86 declined sharply to an annual average of 16.7 per cent during 1992/93 to 1995/96 and has been projected to increase slightly to 27.3 per cent during the Five Year Plan. The significant increase in share of the productive sector in the Five Year Plan is due to the stepping up of investment allocation for agriculture sector which in fact, is building up of infrastructural facilities.

8 The step up of efforts at infrastructural development in recent years and programmes planned for infrastructural efforts during the Five Year Plan by mode of infrastructures is as follows.

## **ENERGY SECTOR**

### **I. Infrastructure planning and policies**

9 The energy sector in Myanmar comprises of two main subsectors namely the Fuel Subsector and the Power Subsector.

10 The infrastructure of the two subsectors were originally established as private enterprises in the mid forties and later nationalized in the early fifties and sixties and operated as full government administration since then.

11 A considerable amount of investment was made in energy infrastructure during the time of the centrally planned system of government, but due to various domestic pressures and constraints in the administrative system, the energy sector suffered setbacks which finally resulted in shortages in both the fuel and power subsectors.

#### **Development objectives**

12 Energy sector is in need for rapid development under strong guiding principles for both the long and the short term.

13 The guiding principle that is presently in place is set to reflect the development of the market oriented economic system and the development pattern of the countries in the region with more responsiveness to the state of affairs occurring in the regional and international scene. In accordance with these principles, long term policy objectives of Energy Sector are as follows:

- (a) Sustainable use of natural resources to support the economic growth in a sustainable manner;
- (b) Efficient utilization of available energy resources;
- (c) Smooth and reliable energy supplies for building a modern agroindustrial based nation;
- (d) A well balanced use of energy resources by the creation of an equal distribution of the share of various energy sources with a view to diversification;
- (e) Promoting the development and utilization of all available renewable energy resources;
- (f) Creating an attractive base for further investment in energy and energy related ventures.

14 Targets of major energy products during medium term plan 1996/97 to 2000/2001 are set as follows:

- (a) An increase in the domestic oil production from the present 1995/96 level of 6.9 million barrels to 12.8 million barrels in the year 2000/2001;
- (b) An increase in the domestic gas production from the present 1995/96 level of 69.5 billion cubic feet to 401.5 billion cubic feet in the year 2000/2001;
- (c) An increase in the electric power generation from the present 1995/96 level of 3,780 million KWH to 6,177 million KWH in the year 2000/2001.

### **Strategies**

15 Energy sector infrastructure has become fundamental in supporting the development activities of each and every sector for the achievement of all perceived practical objectives at the nation's phase of development.

16 The sector which now faces a heavy load due to rapid demographic change and also the acceleration of economic activities is to meet the physical infrastructure needs through cooperation with domestic and international private entrepreneurs and for the demands for services through strategies in sector investment priorities, support of regional cooperation, environmental protection, and human resources development.

17 In the past, the energy sector in setting its sector investment priorities has followed an approach that provide basic services to less developed communities, but with the present economic policy and the system of administration basic infrastructure services has been extended across the communities to enable social services and the growth of economic activities on an equitable basis.

18 The opening up of the Myanma energy sector to domestic and international private sector has led to new horizons in regional energy trade and cooperation. This fact is regarded as the key factor to bring about development and development possibilities that draw on the combination of complimentary economic advantages of the cooperating party or country.

19 The field of regional infrastructure cooperation for the development of infrastructure specifically focuses to support trade and investment in the region for at least for the near future will focus on:

- (a) linked infrastructure, such as hydroelectric power plants, power lines, pipelines and supporting road networks;
- (b) shared infrastructure, such as roads, bridges, airstrips and channels for navigation etc., and
- (c) shared linked or independent infrastructure (facilities) for import/export of oil, gas petrochemicals and other related products.

20 Environmental protection is an emerging subject in the Myanmar society. Although the concept has been put to practice, it has never been highlighted nor given proper recognition in the past.

21 However, with the establishment of the National Commission for Environmental Affairs (NCEA) in 1990, the various line ministries are setting up a modern and systematic approach towards environmental protection.

22 Since energy sector infrastructure projects are large in size and investment intensive, the sector, in consultation with the NCEA and other line ministries, will initiate policy objectives for the requirement of proper environmental protection measures in all private and government infrastructure projects.

23 The line ministries including the energy ministry will then devise a system to:

- (a) prepare a set of rules, regulations and compliance standards;
- (b) devise a system to classify projects for review;
- (c) make necessary arrangements for the provision of endorsements.

24 With regard to environmental protection associated with the development of energy infrastructure, considerable focus will be made on issues such as:

- (a) planning and implementations of land acquisition and population relocation;
- (b) emission and location restrictions for refineries, petrochemical complexes, power generation facilities and high voltage transmission lines;
- (c) discharge of factory effluent and waste.

25 The energy sector in the past has carried out its human resources development program based mainly on the availability of training programs offered by the government and from external donors such as international organizations and foreign governments. The sector till now has to rely on available skilled labour or resource person rather than on its appropriate needs for the operation and maintenance of its infrastructure facilities.

26 The sector however is in the process of formulating guidelines for the systematic integration of human resources development strategies into infrastructure development taking into account the needs of the entire sector both from the long and short term perspectives.

27 As the sector is passing through an evolutionary process from fully government to partnership or fully private sector ownership the focus of the HRD program will be on:

- (a) corporate and management, and
- (b) technical and skilled trades.

## **Scope and priorities**

28 In the past, formulation and execution of energy sector both long and short term plans were driven mainly by the availability of government funds or assistance from donor organizations and countries. However, under the present economic policy and development strategy the sectoral theme has changed with the removal of all constraints with plans and their implementation driven by market forces and the flow of investment from the private sector together with a reasonable government involvement.

29 The summary of a perspective view of the scope and priorities of future infrastructure programmes is as follows:

### The Oil and gas sector

30 The energy sector in developing its oil and gas sector which has a total proven recoverable oil and gas reserve estimate from limited areas (on shore & off shore) of 106 million barrels oil and about 9 trillion cubic feet natural gas is extensively making efforts either on a self help basis or under production sharing agreement for the recovery of these reserves.

31 In the petroleum down stream sector, the energy sector for the last five years have been searching for suitable partners for the effective utilization of existing infrastructure to meet the shortfall in domestic requirements of petroleum products and to export the surplus to the regional market.

32 The sector also plans to increase the production levels of petrochemicals such as urea fertilizer and methanol from existing facilities and has also taken steps to establish another urea fertilizer factory in the near future.

### *Investment opportunities*

- (a) for exploration and production of oil and gas, 18 blocks in the Myanmar offshore area and several relinquished and a few new blocks on shore;
- (b) joint rehabilitation of existing oil and gas fields for increased oil recovery;
- (c) participation in the construction and fabrication of platforms and pipe laying works associated with the Yadana and Yetagun gas development projects;
- (d) renovation and extension of existing fertilizer plants;
- (e) refinery revamping;
- (f) design and construction of urea fertilizer plants.

The electric power sector

33 The energy sector in making future plans for development its electric power sector, plans to increase the present installed generating capacity from 1000 MW to 2000 MW within the next five years.

34 The primary energy source to effect this increase in generating capacity would essentially come from indigenous sources such as the offshore gas resource and the nation's abundant hydropower resources.

35 The hydropower projects listed according to priority are as follows:

- (a) Paunglaung with 280 MW capacity in Mandalay Division;
- (b) Kun with 84 MW capacity in Bago Division;
- (c) Bilin with 240 MW capacity in Mon State;
- (d) Yeywa with 400 MW capacity in Mandalay Division and
- (e) Baluchaung no (3) with 48 MW capacity in Kayah State

*Investment opportunities*

- (a) Financing hydropower projects;
- (b) Construction of Gas Turbine generators;
- (c) Participation in power generation and distribution projects under Build, Operate and Transfer (BOT) or joint venture arrangements.

Planned action and requirement of regional support

36 The Myanmar energy sector needs to develop its infrastructure at a higher pace than the other sectors of the economy to meet the growing needs of all sectors of the economy from all aspects.

37 To gain pace and to effect quick initiation for the investment of the private sector wherever possible, the sector first needs to strengthen its institutions along the line of the sector's development strategies and policies. The areas which needs strengthening are policy formulation and support, management information systems; environmental management; human resources development and safety risk engineering and inspection.

38 The Ministry of Energy which is responsible for the entire energy sector looks forward to receiving regional support for the needs for strengthening so as to keep its commitment to achieve the infrastructure programs systematically and in a technically sound manner thereby providing the private sector a healthy environment and firm support.

**II. Private sector participation**

39 In line with the changes in the nations' economic policy in 1989, the energy sector activities were reopened for private participation. As a result the Ministry of Energy has started up a few infrastructure development works in the oil and gas sector with participation from international oil companies during the last six years.

40 In the electric power sector, the Ministry while taking cautious steps and considerable length of time in formulating the mode for private sector participation, has however, invested an order of magnitude of US\$ 100 million in power facilities from funds available from the state. Negotiations for private sector participation in this sector is still at the discussion stage.

41 For the energy sector to meet the growing social demand and the demand brought about by the surge in increased economic activities in a sustained manner, infrastructure investment programmes need to be implemented urgently. It is expected that in the next five years the need for investment in the oil and gas sector will be about US\$ 2.4 billion and in the electric power sector US\$ 1.2 billion. Out of this overall total investment of US\$ 3.6 billion, a fair amount of financing is expected to come from the private sector.

## PUBLIC WORKS

### I. Infrastructure planning and policy

42 Before the introduction of market economic system, construction and maintenance of roads and bridges are the sole responsibility of the Government Public Works had used labour intensive method to implement the project. In 1987 UN funded Road Research and Development Project introduced computerized road network planning and management system in Public Works. But the highway management information system (HMIS) software can operate to a very limited degree because of obsolete computer and software.

43 Public Works practices to finance road maintenance on yearly budget allocation usually dependent on the length and type of road. Special maintenance funds are allocated for major repairs and emergency works. However, sufficient funds are not always available in the budget. It is commonly the case that an initial partial allocation at the beginning of the fiscal year is supplemented with supplementary budget allocation. Recently, Public Works got loans to procure construction equipment not only to replace old ones but also to augment the assets.

44 Projects are usually implemented based on broad objectives in relation to border area development, regional development, and the development of agriculture, mining and industry. The priorities for road and bridge projects are set primarily by the higher authority usually emphasizing regional development. The following roads to be implemented are in order of priority.

- 10 Yangon-Minbu-Ann-Sittway Road
- 9 Myeik-Tanintharyi-Bokepyin-Kawthaung Road
- 8 Shwebo-Myitkyina Road
- 7 Taunggyi-Kyaingtong-Tachileik Road
- 6 Kale-Falam-Haka Road
- 5 Gangaw-Haka Road
- 4 Haka-Matupi Road
- 3 Mindat-Matupi Road
- 2 Khanti-Lehae Road
- 1 Ye Oo-Homelin-Khanti Road

45 The following bridges being implemented are in order of priority.

- 10 Ayeyarwaddy Bridge (Nyaungdon)
- 9 Ayeyarwaddy Bridge (Chauk)
- 8 Chindwin Bridge (Kalaewa)
- 7 Gyaing Bridge (Zarthabyin)
- 6 Gyaing Bridge (Kawkareik)
- 5 Ataran Bridge
- 4 Thanlwin Bridge (Tarkaw-awt)
- 3 Thanlwin Bridge (Tarsann)
- 2 9 bridges on Myeik-Tanintharyi-Bokepyin-Kawthaung Road
- 1 Bridges on Yangon-Sittway Road

46 During the Four Year Short Term Plan from 1992/93 to 1995/96, an investment of K

9,559 million or 10.1 per cent of the total State investment was allocated for the construction of new roads and bridges and improvement of existing road. Out of the total investment of construction sector, K 1,748 million or 18.3 per cent was for construction of road, K 2,034 million or 21.3 per cent for construction of bridges and K 5,777 million or 60.4 per cent for upgrading of existing road. According to 1995/96 provisional data, 17,301 miles of roads were extended comprising 11,146 miles of union highways and 6,155 miles of main roads.

47 In the Five Year Short Term Plan 1996/97 to 2000/2001 AD a sum of K 3,464 million has been provisionally allocated for investment which will be revised annually depending on availability of financial resources of the total, K 1,104 million has been allocated for new roads construction, K 147 million for improvement and renovation of existing roads and K 2,125 million for bridge construction. A summary of investment program is attached as Table 2.

48 In line with the policy of proper evolution of the market oriented economic system, privatization of road construction and operation of toll road on BOT system is envisaged to be introduced in the plan period.

## **II. Private sector participation**

49 Having practiced the policy that encourages private investment as far as possible, negotiations are underway for toll road projects for a length of nearly 600 miles (960 km) of which 202 miles (323.2 km) will be commence in 1996. The government supports for the toll road projects by providing the entrepreneur with land and existing road infrastructure. The entrepreneur will improve or construct the road and operate toll collection for agreed period and turnover the facilities to the government on the agreed date.

50 Public Works have also just started introducing toll roads programme in eight roads on a trial basis in central Myanmar to defray costs associated with road maintenance activities apart from budget allocations for road funds. Yangon-Mandalay Expressway and Naungcho-Lashio-Muse roads are planned to be constructed and maintained by the private entrepreneur by collecting revenues on a toll system.

51 Meanwhile the Ministry of Construction has just called for tenders to reconstruct the Naungcho-Lashio-Muse Highway and to construct a new toll road from Yangon to Mandalay from private Myanmar national contractors and will allow 30 years period of toll collection system after the completion of the project.

52 For upgrading road infrastructures foreign investors are being invited to participate in joint-venture operation for production of construction materials such as steel beam, steel truss, cement products and bitumen base surfacing materials. On toll road project, foreign investor could join as partners with Myanmar entrepreneurs.

**Table 2 Myanmar infrastructure programme  
Priority project list  
(Road sector improvement)**

Sr. No.	Name of Project	Location	Project Volume Unit	Period for Implementation
1	2	3	4	5
<b>Private Investment Project</b>				
1	Lashio-Muse Toll Road Project	Northern Shan State	163 km (102 miles)	1996/97- 1998/99
2	Mandalay-Lashio Toll Road Project	"	163 km (102 miles)	"
3	Yangon-Bago-Mandalay Toll Road Project	Yangon, Bago, Mandalay Division	627 km (392 miles)	"
<b>Government Investment Road Construction</b>				
1	Patthein-Monywa Road	Ayeyawaddy, Bago, Magwe, Sagaing Division	416 km (260 miles)	To be continued 2001 A.D.
2	Yangon-Nyaungdon-Pantanaw-Kyaungkon-Patthein Road	Yangon, Ayeyawaddy, Division	58 km (36 miles)	1996/97-2000/2001
3	Pyinmana-Pinlaung Road	Shan State	93 km (58 miles)	"
4	Yekyi-Nathaingyaung-Gwa Road	Ayeyawaddy Division and Rakhine State	93 km (58 miles)	"
5	Ye U-Hommalina-Khanti Road	Sagaing Division	528 km (330 miles)	"
6	Myeik-Taninthayi-Kawthaung Road	Tanintharyi Division	483 km (302 miles)	"
7	Mindat-Matupi Road	Chin State	163 km (102 miles)	"
<b>Road Improvement</b>				
1	Meiktila-Taunggyi-Kyaington-Tachileik Road	Shan State	356 km (216 miles)	"
2	Myitkyina-Sumprabum-Putao Road	Kachin State	138 km (86 miles)	"
3	Hanmyintmoh-Myogyi-Ywangan Road	Shan State	112 km (70 miles)	"
4	Kale-Falan-Haka Road	Chin State	141 km (88 miles)	"

5	Dawei-Myeik Road	Tanintharyi Division	251 km (157 miles)	"
6	Loinlem-Pankaitu-Hsipaw Road	Shan State	237 km (148 miles)	"
<b>Bridge Construction</b>				
1	Ayeyawaddy Bridge (Pyay)	Bago Division	1,275 meter	"
2	Ayeyawaddy Bridge (Myitkyina)	Kachin State	840 meter	"
3	Ayeyawaddy Bridge (Nyaungdon)	Ayeyawaddy Division	1,872 meter	"
4	Ayeyawaddy Bridge (Chauk)	Magwe Division	4,100 meter	"
5	Thanlwin Bridge (Hpa-an)	Kayin State	540 meter	1996/97-1997/98
6	Thanlwin Bridge (Takaw-awt)	Shan State	183 meter	"
7	Thanlwin Bridge (Tarsann)	Shan State	305 meter	1996/97-1999/2000
8	Chindwin River Bridge (Kelewa)	Sagaing Division	612 meter	"
9	Attaran Bridge	Mon State	183 meter	"
10	Gyaing River Bridge (Zathabyin)	Mon State	453 meter	1996/97-2000/2001
11	Ma-U-Bin Bridge	Ayeyawaddy	480 meter	"
12	Pantanaw Bridge	Ayeyawaddy	183 meter	"
13	Nine Bridges on Myeik-Kawthaung Road	Tanintharyi Division	1,583 km (5,200)	"
14	Nineteen Bridges on Yangon-Sittway Road	Rakhing State	2,195 km (7,200)	"

---

## RAIL TRANSPORTATION SECTOR

### I. Infrastructure planning and policies

53 Ministry of Rail Transport is solely responsible for rail and also operate road transportation. To a limited extent road transportation is operated by the State enterprise Road Transport while the private sector operated by far the great bulk.

#### Plan implementation

54 Myanma Railways network, including lines in Yangon and Mandalay has track mileage of 3,955 route-km (2,458 route-miles). The inter urban network is mostly single track, only the Yangon-Pyinmana section (253.75 miles) is double tracked. During the Four Year Short Term Plan the Railways' network had considerably extended new track mileage by 420 route-miles. To further extend rail mileage the following rail tracks are under construction to expand the rail network.

(1)	Pakokku-Gangaw-Kale	207.41 miles
(2)	Shwenyaung-Namsan	153.62 miles
(3)	Ye-Dawei	100.08 miles
(4)	Pyay-Taungdwingyi	90.99 miles
(5)	Kyaukpadaung-Myingyan	64.84 miles

#### Five year short term plan (1996-97 to 2000-20001)

55 During the Five Year Short Term Plan, the Myanma Railways and Road Transportation have planned to provide better service and expand transport activities in line with the economic expansion. An investment by the State for Myanma Railways amounting to K 10.6 billion and for Road Transportation K 534 million to have been provisionally allocated for expansion of rail and road transportation for procurement of rolling stock and construction of rail tracks and bridges.

### II. Private sector participation

56 In accordance with the economic reforms being undertaken to lay down market economy, the private sector is encouraged to participate in the railways transportation services. Thus, since 1992, the Myanma Railways has permitted the private companies to operate freight trains and passenger trains on certain specified section of the routes as shown below.

		<u>Freight</u> <u>Train</u>	<u>Passenger</u> <u>Train</u>
(1)	Mandalay Freight Forwarder Co., Ltd		
(a)	Yangon-Mandalay	1	
(b)	Manadalay-Myitkyina	1	1
(2)	Sann Thaw Dar Co. Ltd.		
(a)	Yangon-Mandalay	1	
(b)	Mandalay-Myitkyina		1

- (3) Dagon Mann Co. Ltd.  
 (a) Yangon-Mandalay

## **AVIATION AND MARITIME TRANSPORT**

### **I. Infrastructure planning and policies**

#### **1992-93 to 1995-96**

Aviation and Maritime Transport comprises air and water transportation

57 After assuming the state's power in September 1988, the State Law and Restoration Council announced a completely different political and economic system and spell out its intention to adopt and move towards a more open market orient economic system. A series of appropriate restructuring was enacted. Accordingly Ministry of Transport had laid down a comprehensive Transport policy corresponding to the objectives.

58 During the previous four years plan investment by the ministry had been increasing sharply to suit the increasing services demands. Since 1992-93 investment had increased almost 100% yearly. Investment in the sector was as follows:

-	1992-93	Ks 380 millions
-	1993-94	Ks 680 millions
-	1994-95	Ks 1,001 millions
-	1995-96	Ks 2,015 millions

59 In civil aviation sector, international airports and domestic airports were constructed, renovated, strengthen and modern equipments and instruments were installed. More international and domestic flights were introduced by means of developing joint venture airways and acquiring more transport aircraft for domestic air routes.

60 In maritime sector ports and wharfs' were renovated, new ports and wharfs were constructed new vessels were added and river improvements were implemented. Export and import cargo handing was able to increase from approximately 4 million tons to more than 7 million tons.

#### **1996-97 to 2000-2001**

61 The overall basic infrastructure programme for the next five years responds to the twelve objectives laid down by State Law and Order Restoration Council is over K 9.54 billions and US\$1.12 billions including private sector investments.

62 The air transport five years programme includes acquisition of new aircrafts for domestic and international routes, developing new joint venture airways, construction of new international airports at Hanthawaddy and Mandalay, strengthening and extension of Yangon international airport, renovations and strengthening of other airports and implementation of future Air Navigation plan.

63 The existing runway at Yangon international airport has limitation in length and bearing

strength. The availability of land area for the extension is also very limited. It is crucial that a major gateway to Myanmar for the modern large airlines be in the vicinity of Yangon.

64 Also the existing airport at Mandalay has restricted land space for the extension to accommodate modern wide bodies jets. Consequently, construction of a new Mandalay International Airport, approximately 18 miles south west of Mandalay has started since 1994. For inland water transport, river improvements are implemented along Eya-waddy, Chindwin and delta region and night navigation systems were installed in some selected areas. Various types of new vessels were contracted and a total of 41 new vessels will be procured and additional vessels will be constructed in accordance with the development of economy.

65 Shipping is largely carried out by the Myanma Five Star Line. Procurement of various types of coastal and sea going ships were already contracted to supplement the existing fleet.

66 The upgrading of Port's facilities, extension and expansion of Yangon Port is urgently needed to improve efficiency and to meet the surge in traffic growth resulting from the country's market-oriented reform and economic liberalization programme.

67 The prefeasibility study for a Port at Thilawa, 16 Km downstream of present port, has been carried out under UNDP/WORLD BANK assistance in 1991. Although Thilawa area is in Yangon river, the study especially recommended that the port expansion at Thilawa site should be started immediately with the provision of one berth container terminal as short term investment. The study also recommended 2 bulk berths, 3 timber berth and 8 general cargo berths as medium term and long term planning.

68 On 28 June 1995, C & P Holding Pte Ltd. of Singapore was awarded a contract on the first construction of two container berths with a total quay-length of 500 meters at Thilawa area on Build Operate and Transfer basic C & P Holding Pte Ltd. is to complete the project within two years. Again, on 7 September 1995, the group has been given the rights to construct another two container berths on the project's second phase. The second contract will be completed within three years.

69 To improve container handling capacity in Yangon Port, a Joint Venture Shareholder's Agreement to incorporate Yangon Inland Container Depot between the Myanma Port Authority and Allied Container Services Pte Ltd. of Singapore was signed on 13 December 1996. The new container depot to be completed with six months time at Botataung Foreshore Area, will be able to handle a total of 3,500 containers at a time. Also construction of a new wharf at Ahlone was awarded to national private sector on build operate and transfer system.

70 To allow bigger size of vessels than those presently calling to the ports of Myanmar, development of a deep seaport at a suitable site along Myanmar's coastline is included in long term investment plan. One of the possible sites is at Kyaukphyu, a site located at the western coast of Myanmar identified based on the availability of sufficient water depth in the approach channel/port basin and protection from severe weather conditions usually occur during monsoon raining periods.

## COMMUNICATION, POST AND TELEGRAPHS SECTOR

### I. Planning and policies

71 Myanmar Posts and Telecommunications is the sole operator for the provision of telecommunications services in Myanmar comprising the installation, operation, maintenance and management of all kinds of telecommunication equipments and allied facilities. For the progressive development and modernization of telecommunications services, the State expended significantly increasing amount of investment year after year during the Four Year Short Term plan.

72 The yearly investments expended during Four Year Plan were as follows:

<b>Year</b>	<b>Investment</b>
	(kyats in million)
1992-93	1,334.41
1993-94	1,728.73
1994-95	3,132.78
1995-96	3,326.20
	(Revised estimates)

73 With the significant increases in yearly investment expended in Telecommunication Subsector by taking various ways and means the Telecommunication services recorded a significant average annual progress of 16 per cent during the Four Year Short Term plan. The salient undertakings to upstage telecommunication services during the last four years are as follows:

(a) **Telephones**

In the programme for enhancing telephone services exchange offices increased from 358 in 1991/92 serving 85,637 direct exchange lines adding more exchanges and direct exchange lines during the Four Year Plan. As a result the number of exchange increased to 467 and direct exchange lines to 157,843 in 1995/96.

(b) **Long distance communications**

To enhance long distance communication including the strategic border areas of the national races, 15 domestic satellite communication earth stations, long distance communications lines, new short haul digital microwave radio routes, expansion of existing microwave long distance channels, installation of new open wise carrier, installation of new radio transreceivers were implemented in addition to existing long distance communication equipments.

**(c) Overseas communications**

Sixty international telephone circuits were connected to seven countries using standard B satellite earth station. Implementation of standard A satellite earth station and a new international gateway switch in 1994 enhanced Myanmar to more international circuits which tenders easy access to International Direct Dialling. At present there are 573 international telephone circuits serving 13 countries.

**(d) Wireless in local loop-radio telephone system**

It is a new system for Myanmar and was implemented in Yangon and in Delta area. Bagan and Hpaan in 1995 and 1996. This system enabled Myanmar to offer automatic radio telephone connections to subscribers immediately without using outside plant cable net work.

**(e) Cellular mobile telephone**

Cellular Mobile Telephone system (analog amps 800) was first introduced in Yangon in 1993. As the installed capacity of 2,000 was all occupied, addition and upgrading of cellular network in Yangon is now underway for 4,000 subscriber units by introduction of Digital Amps. Digital Amps System for 1,000 subscribers was introduced in Mandalay, Upper Myanmar in 1996.

**Five year short term plan (1996/97 to 2000/2001)**

74 A Five year development plan has been formulated to further accelerate the development. For the development of telecommunications services which has been accorded priority sector for development an initial investment of kyats 4,091.6 million has been provisionally allocated. Steps will be taken to significantly expand the telecommunications services during the plan. The major component of the telecommunication development plan comprises.

- (a) Replacement of existing crossbar and manual exchanges with appropriate digital electronic switches;
- (b) Implementation of new digital switches;
- (c) Introduction of Data Communication/Email/ISDN network;
- (d) Establishment of paging network;
- (e) Implementation and expansion of digital microwave radio relay systems;
- (f) Installation and expansion of cellular mobile telephone network;
- (g) Upgrading of Domsat and introduction of V-sat network;

- (h) Expansion of international link;
- (i) Partial mechanization of postal service;
- (j) Improvement of training facilities;
- (k) Introduction of wireless radio technique in subscribers loop network.

75 With the realization of plan targets for Five Year Short Term Plan, direct exchange lines and number of telephones are expected to be increased to 346,060 and 369,201 respectively with telephone density of 0.733 per 100 inhabitants in 2001.

## **TOURISM**

### **I. Infrastructure planning and policies**

76 Tourism industry has assumed a significant and bigger role in Myanmar with the economic transformation since early 1990 having enormous potentials for development. The Myanmar Tourism Law was adopted in June 1990 thereby, opening doors to private sector after more than a quarter century of State monopoly. Foreign investors are also welcome for development of international class hotels, resorts and other tourism related projects under the Foreign Investment Law. In order to accelerate systematic development of tourism industry, the Ministry of Hotels and Tourism was formed in September 1992. Today, tourism industry is growing rapidly under the dynamic leadership of the Ministry. This is also partly due to the active participation of the private sector and the investments made by foreign companies.

#### **Policies and actions**

77 The tourism policy is based on benefiting national economy by earning foreign exchange, promoting regional development, creating employment opportunities, preservation of cultural heritage and protection of environment.

78 The Ministry of Hotels and Tourism is responsible for long-term development planning, marketing and promotion, facilitation, coordination, and regulation of private sector, foreign investment in hotel and tourism projects and manpower training.

79 Myanmar offers a variety of tour products for all types of travellers with different interests. For scholars, historians, archaeologists, adventure seekers, naturalists, or leisure travellers there is a rewarding experience awaiting them in Myanmar.

#### **Current situations and trends**

80 With the liberalization of entry formalities and extension of visa to 28 days, tourist arrivals jumped from 26,000 in 1992/93 to over 61,000 in 1993/94. It recorded over 100,000 in 1994/95 and reached 150,000 in 1995/96. It was a dramatic growth compared with 41,000 tourists in 1987/88, the highest recorded before 1988. It is projected to reach over 200,000 in 1996/97 with the promotion of Visit Myanmar Year.

81 Presently, Yangon has direct airlinks with two major hubs in the region i.e. Bangkok and Singapore. Three major airliners, Myanmar Airways International, Thai Airways International and Silk Air, operating scheduled flights have recently increased their frequencies. Other international airlines operating are Air China, Biman, Indian Airlines, Air Laotian, Pakistan Airlines, Vietnam Airlines, Royal Air Cambodge and All Nippon Airways (ANA). With the addition of new airlines and increased frequencies, it is estimated that about 300,000 visitors will be able to fly into Yangon by this year.

82 Visitor arrivals comprise tourists, business travellers and Myanmar expatriates visiting friends and relatives. Out of them, tourists account for 14 per cent, business travellers 28 per cent and Myanmar expatriates 8 per cent. By nationally, visitors from Singapore, Thailand, Hong Kong and Taiwan make up the majority. It is a growing market of business travellers

attracted by the opening up of trade and investment opportunities. For the long term, Western Europe (France, Germany, Italy, United Kingdom, Netherlands, Switzerland) and United States are the major potential markets. They generate affluent travellers whose main interest is culture and nature.

83 For the first time entry by overland has been allowed along Myanmar-Yunnan (China) and Myanmar-Thai borders. Opening up of borders promote across-the-border traffic and contribute to regional development. Over one million visitors crossed into border towns and some went as far as Lashio, Mandalay and Yangon.

84 In recent year, Myanmar has become a popular part of call of many cruise ships and the potential for expansion is good. Over 23 cruise ships including MV Ocean Pearl, MS Berlin, Royal Viking Sun, Dephne Round the world, called at Yangon Port and some spent 2 to 3 nights with excursions to Bagan and Mandalay.

85 A world wide Charter flight organized by A & K of Hong Kong is also making Myanmar its stop-over destination.

### **Human resources development**

86 Myanmar labour force is one of the country's primary resources. Labour is readily available from townships labour offices throughout the country. Trainings in hotel and tourism industry have been conducted by both public and private sector. The Ministry of Hotels and Tourism has conducted training courses in food and beverage, front office, house keeping, tour guides, cooking local cuisines, and foreign languages. With the completion of construction of hotel projects and opening up of tour agencies, there will be a great demand for trained and skilled personal from basic to management level. To meet the demand, training institutes and polytechnics, vocational schools should be established with the financing and technical assistance of international organizations.

### **Infrastructure development**

87 The Government is aware that adequate infrastructure is crucial for speedy development of the economy including tourism industry. It is the primary concern of the State to provide basic infrastructure i.e. roads, rails, airports, electricity, water supply, telecoms etc. Accordingly, the government has undertaken various projects to improve existing infrastructure and expand new facilities. Most infrastructure projects require huge investments in foreign exchange for which efforts have been heavily constrained by lack of foreign exchange.

### **Tourism promotion**

88 Although Myanmar has abundant and diverse tourist attraction there is a low awareness of Myanmar as a tourist destination. In order to present a true picture, newsmen and journalists have been allowed to freely travel inside Myanmar for first hand information. Travel to writers and Television crews were also invited on familiarization tour to see the real situation in Myanmar.

### **Environment**

89 The Government is conscious and concerned about undesirable effects of tourism on rich cultural heritage and natural environment. Measures are being taken to preserve the old historical monuments and religious edifices. The Archaeological Department with public donations has undertaken a major project to reserve and restore ancient pagodas, travel magazines, guide books and pictorials have been published with the cooperation and assistance of private sector and distributed worldwide through Myanmar Embassies.

90 As evidence of the Government's Commitment to preserve and protect environment, National Environment Commission has been formed with the Minister of Foreign Affairs as Chairman. Under the guidance of NEC, measures have been taken for protection of environment in many fields. The Ministry of Forestry in particular has undertaken measures to protect the forests, plants and wildlife and eco-systems.

## **II. Private sector participation**

91 The Government believes that private sector can plays a vital role in accelerating tourism development. With the encouragement and support of the government, the private sector has grown very rapidly. Up to end April 1996, 468 tourist enterprises, 333 hotels, motels and inns, 1,077 transport coaches, limousines and 1,446 tour guides have been given licence to operate.

92 Under Foreign Investment Law, there are 32 ongoing hotels projects with an investment of over U.S. dollar one billion. Investors include international chain hotels such as Shangri-la, Oriental, Hilton, Accor, Sedona, New world and Aman Resorts.

## **DEVELOPMENT OF BORDER AREA AND NATIONAL RACES**

### **I. Infrastructure planning and policies**

93 The Ministry for Progress of Border area and National Races and Development Affairs was formed on 30 January 1994 in order to develop the border and far flung area. The Master Plan for the development of Border area and National races has been drawn under the guidance of the Chairman of the State Law and Order Restoration Council. The area of the fourteen regions included in the Master Plan is about 49,996 square miles which is 19.1 per cent of the total area of the country. Up to December 1995/96, 56 township with a total area of 65,274 square miles have been covered with development activities which is 24.9 per cent of the total area of the country. The population growth of the project area is 1.04 per cent and the population density is 68 persons per square miles.

94 Over 3.7 million people are living in the fourteen regions, which is 8.2 per cent of the total population of the country. Inclusive of four special regions nearly 7.5 million people are living in the eighteen regions which is 17.5 per cent of the total population of the country.

95 Although the job opportunities of the regions will not be the same, the future objective of the State is to develop an industrialized nation, based on agriculture. The infrastructure development projects to be implemented in the regions are

- (a) roads and transportation;
- (b) housing;
- (c) energy;
- (d) communications.

96 The funds allocated are for the fourteen regions and some reserved funds for the four remaining regions, Kachine Special Region 2, Kayin Region, Kayah Region and Mon Region. The ministry is also responsible for poverty alleviation through economic growth and social development. Funds allocation for the infrastructure development projects is Kyats 3,846.5 million, of which Kyats 1,837.5 million during 1993/94 to 1995/96 fiscal year and Kyats 2,009.0 million during 1996/97 to 1999/2000 fiscal year.

97 Management of the projects and coordination among the subcommittees, review and evaluation of the projects will be conducted by the office of the Work Committee for the development of border area and national races.

Table related to infrastructural development plan are attached in appendix (1-4)

**Plan for roads and transportation sector**

<b>Sr.</b>	<b>Tasks</b>	<b>Accounting Unit</b>	<b>1989/90 to 1995/96</b>	<b>1996/97 to 2000/2001</b>	<b>Total</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
1	Earth road	mile/furlong	1,798	1,146	2,944
2	Gravel road	"	656	1,523	2,179
3	Asphalt road	"	74	195	269
4	Road extension	"	6,307	N.A.	N.A.
5	Bridge	Nos	25/525/3	27	25/552/3
6	Investment	Kyats (million)	886.2	1,345	2,231.2

**Plan for housing construction sector**

<b>Sr.</b>	<b>Tasks</b>	<b>Accounting Unit</b>	<b>1989/90 to 1995/96</b>	<b>1996/97 to 2000/2001</b>	<b>Total</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>1</b>	<b>Health</b>				
	1 Hospital	Nos	32	18	50
	2 Dispensaries	"	72	159	231
	3 Rural health centres	"	8	16	54

<b>2</b>	Education				
	1 Primary schools	Nos	249	342	591
	2 Middle school	"	30	59	89
	3 High school	"	10	26	36
<b>3</b>	Land development and resettlement	Nos	1,223	1,550	2,773
<b>4</b>	Investment	Kyats (million)	534.8	446	980.8

Appendix 3

**Plan for energy sector**

<b>Sr.</b>	<b>Tasks</b>	<b>Accounting Unit</b>	<b>1989/90 to 1995/96</b>	<b>1996/97 to 2000/2001</b>	<b>Total</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>1</b>	Energy				
	1 Generator	Nos	128	81	209
	2 Electrified town and village	"	91	78	169
	Electrified town and village by hydels	"	8	7	15
	3 400/230 power line	mile	15	123.5	138.5
<b>2</b>	Investment	Kyats (million)	187.4	132.0	319.4

Appendix 4

**Plan for communication sector**

<b>Sr.</b>	<b>Tasks</b>	<b>Accounting Unit</b>	<b>1989/90 to 1995/96</b>	<b>1996/97 to 2000/2001</b>	<b>Total</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>1</b>	Communication				
	1 Post offices	No	30	84	114
	2 Radio telephone (RT)	"	40	5	45
	3 Internal exchange	"	47	N.A.	N.A.
	4 Telephone (Trunk call)	"	333	N.A.	N.A.
	5 Carrier	"	19	N.A.	N.A.
	6 Telegraph offices	"	37	15	52
<b>2</b>	Investment	Kyats (million)	229.1	86.0	315.1

