

### 3.0 TRANSPORTS AND NATIONAL DEVELOPMENT

#### 3.1 Long Term Development Goal

- 3.1.1 The long term development goal of the country is to raise the standard of living and or the quality of life of the people through the enhancement of both the productive and non-productive sectors of the economy from the present level per capita Gross Domestic Product of about USD.210 to the level of typical medium developed country, with an estimated per capita Gross Domestic Product of USD 2,500 as per National Vision - 2025. Together with this national strategic goal the National Transport Policy (NTP) also takes cognisance of the various other national guidelines such as those contained in the National Poverty Reduction Strategy Paper (PRSP), Rural Development Strategy (RDS) (in which, areas such as rural road transport, telecommunications and postal services have been identified as priority sub-sectors in fighting poverty), Civil Service Reform programme, Parastatal sector reform, private sector involvement in economic development, strategic environmental sustainability, gender issues, eradication of diseases and literacy campaign and other sector development programmes.

#### 3.2 Various Economic Reforms Undertaken

- 3.2.2 The various economic reforms undertaken in the recent years have continued to improve economic performance. Although, these reforms have made some positive impact on poverty reduction among Tanzanians whom about 50% are classified as poor and 36% as very poor (abjectly poor), much effort is needed to deal with fundamental problems which cause slow pace of economic growth and development; some of which are:-
- i) deterioration of the state of social services such as education, health, nutrition, water, and sanitation,
  - ii) slow pace of agricultural growth, upon which over 80% of Tanzanians rely,
  - iii) inadequate domestic savings, vulnerable balance of payments position, and
  - v) inadequate investments in physical infrastructure especially transport.

In view of these problems, transport sector development is indisputably a critical factor and an impetus to sustainable economic growth and development.

#### 3.3 National Poverty Reduction Strategy

3.3.1 The National Poverty Reduction Strategy adopted by the government in 1997 provides overall guidance and a framework for coordination and supervision of the implementation of policies and strategies for poverty reduction. However, the low level of individual incomes is one of the indicators of poverty. This coupled with absence of a conducive environment for the private sector investment

has hindered investment in physical infrastructure, particularly transport infrastructure. This NTP provides guidance towards better transport infrastructure and services which will in turn lead to the development of other sectors including, education, agriculture, health care, access to water, and general economic development.

3.3.2 The national objective is therefore to put emphasis on poverty reduction by way of increased investment in the development of human resources, enhancement of productive sectors especially agricultural productivity, improvement of infrastructure, promotion of private sector development, enhancement of competition, environmental sustainability, good governance and ensure the sustainability of the overall improvement in macro economic stability. The development and/or improvement of transport infrastructure and services is therefore crucial to the attainment of these objectives.

3.3.3 In view of the above, NTP recognises that road is the dominant mode of transport in most parts of the rural areas. By virtue of the fact that poverty is a rural phenomenon, NTP aims at having reliable transport through infrastructure development and services that stimulates production in the rural areas and facilitate transport to the major transport networks and market centres.

#### 3.4. Realisation of the Objectives And Goals

3.4.1 The NTP takes cognisance of the fact that the realisation of the objectives and goals of the identified priority sectors such as education, health, water, agriculture, manufacturing, tourism, mining, energy, land and good governance hinges on the availability of adequate and reliable transport to reach inputs to production points and also to distribute outputs from production points to consumption points/markets. New investment in the construction and rehabilitation of infrastructure will be given priority parallel with maintenance of the existing facilities to enable speedy development of strategic agricultural export products such as coffee, cotton, tobacco, sisal and cashew nuts; ensure food sufficiency; enhancement of natural resources such as forestry, fishery and all programmes geared to environmental sustainability. Enhancement of transport infrastructure with a view of speeding up the development of other productive sectors. Manufacturing industry, trade and service sectors will receive deserving emphases.

#### 3.5 The Central Role Of Transport Infrastructure

3.5.1 Considering the central role of transport infrastructure and realizing that due to the small size of traffic on it, investing in infrastructure development will for quite some time in the future is unattractive to the private sector. In view of this, the government will have to continue to play the leading role in its development.

3.5.2 On the same token, the NTP strives to stimulate population integration and

enhancement of regional equity, by way of providing transport systems, which will not only enable Tanzanians to exchange goods and services among themselves but also enable them interact freely.

### 3.6 Transit Trade

- 3.6.1 The NTP strives to enhance transit trade by way of improving the infrastructure including facilities of the various transport modes, routes and interface points such as those at transhipments. Similarly, the NTP strives to enhance the other key issues such as security, environmental sustainability and gender.

### 3.7 Pursuance of the Goals

- 3.7.1 The pursuance of all the above goals will be done in tandem with all other key national and sectoral policies e.g. The agricultural policy, land policy, investment policy, industry and trade policy, energy policy, health, education, tourism and all other sectoral policies which impact directly or indirectly to transport sector.

### 3.8 Social Sector Emphasis

- 3.8.1 In the social sector, a lot of emphasis will as is the case now, be directed to the enhancement of the on going programmes by way of encouraging improvement of transport infrastructure and services to inaccessible parts of the country. At present reaching social services to people in the remote districts or villages, particularly during the wet seasons, is quite difficult. The NTP emphasises the need for maintenance of roads to such points and putting in place appropriate institutional arrangements for planning, coordination, financing, execution of services and appropriate legislation for furnishing the private sector involvement. Public sector involvement in the enhancement of infrastructure through mobilisation of financial resources as well as capital investment will be given deserving emphasis.

## 4.0 TRANSPORT SECTOR OBJECTIVES AND GOALS.

### 4.1 Need for Coherent Policy

4.1.1 The transport sector needs a comprehensive policy to ensure compliance to the national social and economic development objectives and goals, paying due emphasis to the following:-

- i) support the short and long-term national development programmes for sustainable economic growth, economic reforms, meeting basic needs, human resource development and creation of employment.
- ii) ensure private sector participation in the provision of services while the government continues to retain the role of ownership and development of the key strategic transport infrastructure.
- iii) apply a participatory approach in the provision of transport infrastructure and services by involving all the stakeholders (i.e. government, operators and users) in playing their role in the development of the sector.
- iv) provide effective institutional arrangements, laws and regulations, capacity building and use of appropriate technology.
- v) support appropriate development strategies including development corridors, land use densification and efficiency and integrated economy through among others, establishing a strong infrastructure base and services in all major towns and other centres of socio-economic activities and growth.
- vi) facilitate sustainable development by ensuring that all aspects of environment protection and management are given sufficient emphasis at the design and development stages of transport infrastructure and when providing services.
- vii) Safety and Security

### 4.2 Institutional Arrangements

4.2.1 A fundamental requirement for an effective transport system is an institutional framework, which will ensure provision of effective, reliable and integrated transport services. One of the main factors that has led to the deterioration and poor performance of the sector is lack of effective coordination of the various components of the transport system.

4.2.2 The government is disengaging itself from operational activities and is allowing private sector participation and market competition. Therefore, for the long-term interest of the sector, it is important to effectively separate, streamline and consolidate policy (for the ministry responsible for transport matters), regulation (for regulators) and operations (for operators). Such an arrangement is required to ensure that consumers are protected against abuse of dominant

positions, long-term interests of the nation are protected and fair distribution of transport services in the country. It is however important that sectoral oversight, over regulation and operation be maintained by the ministry responsible for transportation which will also be answerable to parliament on matters regarding the sector.

#### 4.3 Laws and Regulation

- 4.3.1 Supportive legislation is needed in line with the implementation of the NTP. The existing legislation should be reviewed and where necessary new rules and regulation be developed in favour of investment, safety, security and sustainable environmental protection in the transport sector. Moreover, coordinated efforts of the institutions responsible for enforcement of traffic rules and regulation will be given a deserving emphasis.

#### 4.4 Sector Capacity Building

- 4.4.1 The NTP recognises the need for enhancing technical and managerial capacity in the transport sector. The ongoing reforms in the sector necessitate further human resource development to face challenges posed by developments in science and technology as far as transport sector is concerned. A deliberate move is necessary to:-

- i) ensure availability and sustainability of local technical and managerial capacity to man the transport sector;
- ii) ensure the private sector allocates a certain percentage of the operational budget to human resource development;
- iii) review training programmes to meet needs of local capacity building.

#### 4.5 Technological Development

- 4.5.1 Given Tanzania's low science and technology base, the main challenges in technological development include:-
- i) acquisition of modern technology given the scarce resources by attracting private capital through suitable policy environment;
  - ii) choosing appropriate technologies by setting standards and enforcement mechanism through regulation; e.g., look into possibility of using motor cycles as taxis to reduce fuel consumption and adverse impacts to environment.
  - iv) promoting creativity and innovativeness to adopt or develop new technologies by providing an enabling environment.
  - v) enhancement of info-communication as a basis for future socio-economic development and also as a basis for enabling Tanzania to be a member of the global village.

## 5.0 URBAN TRANSPORT POLICY DIRECTIONS

### 5.1 Road Infrastructure

#### 5.1.1 Objective

5.1.1.2 To improve the capacity and quality of urban road infrastructure to accommodate the ever-growing road traffic.

#### 5.1.2 The Issues

5.1.2.1 Road is the most dominant mode of transport in urban areas. It interconnects production with consumption and markets centres. Most roads can hardly cope with rapid increase in traffic volumes due to insufficient road capacities. For instance, Dar es Salaam city roads are connected to the traffic from Bagamoyo, Morogoro, Pugu and Kilwa roads causing very high road traffic density especially in the Central Business District (CBD) areas.

5.1.2.2 The design of most roads does not conform to rapid increases in traffic volume. Other road related problems include inadequate parking spaces; lack of maintenance and room for future expansion; lack of modern bus terminals; inadequate facilities for non-motorised traffic and pedestrian lanes; and lack of road furniture.

5.1.2.3 Furthermore, road capacity has been reduced by road side parking, street vending and pedestrians who are compelled to walk on the carriageways as most of the walkways are full of parked vehicles and petty business. When the road capacity is exceeded, efficiency is reduced and the traffic flow becomes impeded.

5.1.2.4 The inadequate physical planning and poor implementation of master plans coupled with lack of enforcement of urban bylaws also have negative impact on mobility and accessibility in most parts of the urban areas, especially in unplanned urban settlements in Dar es Salaam. Some residential areas are inaccessible due to inadequate and poorly maintained infrastructure. As a result, residents are compelled to walk long distances to a bus stop.

5.1.2.5 In order to meet the expectations of the demand side in relation to the urban road infrastructure, the NTP gives the following policy direction:-

- i) design of residential areas should be done in tandem with provision of adequate transport infrastructure. It should ensure security, safety and comfortability to pedestrians and cyclists by providing for dedicated

- pedestrian and cyclist lanes. It should also consider planting of flora including trees and flowers along the urban roads to provide for both attractive road scene and shading to pedestrians from overhead sun.
- ii) enhance capacity building for future urban road traffic demand. Rehabilitation and improvement works should take into account traffic forecasted over a period of at least 10 years backed with appropriate traffic management measures.
  - iii) influencing land use planning and settlement patterns to achieve easy access to amenities. Road reserves should not be used for purposes that hinder smooth flow of traffic and future expansion.
  - iv) urban residents should contribute towards maintenance of roads in their areas through direct involvement or through user charges.
  - v) private sector participation in road funding and management decision-making forums.

## 5.2 Other Infrastructure

### 5.2.1 Objective

- 5.2.1.1 The policy objective is to develop complementary transport infrastructure to road so as to ensure smooth traffic flow.

### 5.2.2 The Issues

- 5.2.2.1 Use of other infrastructure including rail, for commuter services in urban centres in Tanzania is almost non-existent. However, due to fast urban growth, roads can hardly absorb the growing demand considering the nature of traffic. Availability of comprehensive transport system that ensures sustainable accessibility to socio-economic activities with minimum possible traffic congestion is the main concern of the policy.
- 5.2.2.2 In order to complement the urban road transport infrastructure and thus be able to adequately meet the expectations of urban transport demand, the NTP gives the following policy direction:-
  - i) consider development of both rail or tram and water transport services for Dar es Salaam (and other urban areas either along the coastline or in other parts where water resource allows) in future planning for they have the potential to divert traffic from the congested arterial roads.
  - ii) provision of rail (mass transit) will be considered.
  - iii) the potential of rail as an efficient and cost-effective mode for mass transit should be considered and feature in the plans in view of the rapidly growing transport demand.

iv) consider development of interchange and interface facilities.

### 5.3 Road Services

#### 5.3.1 Objective

5.3.1.1 To improve the supply of road transport services without compromising customer safety, comfort and transport adequacy in urban areas.

#### 5.3.2 The Issues

5.3.2.1 The provision of transport services in urban centres is generally dominated by the private sector. In the city of Dar es Salaam for example, Dala-dala operators control 90% of the market share. The share of the public transport (UDA) and other public organisations is only 10%. Dala-dala services are more popular amongst commuters as they are available, flexible and relatively efficient.

5.3.2.2 Most of the dala-dala have carrying capacities below the standard buses. However, they carry over capacity per trip at the expense of passengers' comfort and safety. The problem is further compounded by the fact that many dala-dala operators own one to two vehicles implying presence of many unnecessary operators in the market, which constrain regulation and law enforcement.

5.3.2.3 Services in most urban areas are concentrated in major arterial roads, which have better road conditions and higher concentration of passenger volumes. This has an adverse effect of reducing vehicle travel speeds due to traffic congestion.

5.3.2.4 On the other hand, there is very little penetration to the newly developed sub urban areas due to lack of feeder roads or poor condition of the existing ones and high operating costs involved in such routes. Lack of penetration to some of the urban areas, and the low level of motorisation are such that use of non-motorised transport and walking constitutes a significant proportion of urban trips.

5.3.2.5 In major Central business Districts such as Dar es salaam, congestion is increasing due to ever increasing use of private cars in favour of public transport; poor traffic management and non adherence to traffic rules and regulation.

In order to meet the transport service demand in urban areas in terms of customer safety, comfort and adequacy, the NTP has the following policy direction:-

- i) increase private sector participation in the provision of transport and alternative transport services
- ii) develop and operate modes of transport in urban centres on the basis of economic savings on fuel use, operational efficiency including reducing traffic congestion, environmental protection and safety.
- iii) examine the current technologies available with a view to having the most ideal mode for urban transport.
- iv) segregate public transport and in particular bus transport should be confined to selected routes to speed up traffic flow
- v) have in place a strong operator union(s) and forums for efficient and effective transport services
- vi) streamline regulatory functions
- vii) encourage the use of non-motorised transport and mass passenger transport as alternatives to ever growing vehicle traffic.

#### 4 Traffic Flow and Management

##### 4.1 Objective

- 4.1.1 To minimise traffic congestion in the major Central Business Districts such as Dar es salaam.

##### 4.2 The Issues

- 4.2.1 There is serious traffic congestion in Dar es Salaam particularly in CBD due to the rapid increase in car ownership and use. Apparently, the existing road capacity has not been able to cope with vehicle influx. Congestion has also been caused by lack of public education and awareness, lack of parking spaces, poor traffic management including inefficient traffic signals, poorly designed junctions, lack of signs and markings and laxity in traffic regulation enforcement.
- 4.2.2 In order to minimise traffic congestion in urban areas, the NTP underlines the pursuance of the following policy direction:-
  - i) implementation of traffic management measures alongside maintenance, rehabilitation, construction and operation of urban road infrastructure as a low cost undertaking to improve utilization of the limited road capacity.
  - ii) enforcement of building legislation on provision of parking spaces in any land parcel development for office, retail, residential, industrial, recreational, etc.
  - iii) designation and development of more ring roads wherever appropriate to cater for through traffic as an alternative to radial roads starting from the CBD.
  - iv) definition of proper vehicle dimension and combination in CBD.

Whenever necessary vehicle discrimination is exercised to attain smooth traffic flow.

- v) promotion of public transport as the most effective and efficient means of travel in urban areas and discourage private transport particularly in areas prone to acute congestion such as in the CBD especially during peak hours.
- vi) Development of rail and water transport wherever possible (i.e., DSM and Mwanza towns) to complement road transport.

## 5.5 Land Use Planning

### 5.5.1 Objective

5.5.1.1 To address transport problems related to land use planning.

### 5.5.2 The Issues

5.5.2.1 Presently, land use planning is not done in such a way that it locates industries and social amenities in the neighbourhoods of the residential areas. As a result the process doesn't play the expected key role in reducing trips related to social services and amenities. Most of these services are situated in the central business Districts (CBD). However, the problem of poor implementation of master plans coupled with laxity in enforcement and coordination of relevant legislations have created chaos that exists today in the urban areas. Other problems include geographical and physical characteristics, settlement patterns and location of socio-economic activities. These have made it costly to implement transport infrastructure development plans.

5.5.2.2 In view of the identified transport bottlenecks related to land use planning, the NTP provides the following policy directions:-

- i) facilities such as light industries, schools, business and shopping centres, markets and other services be located within or close to residential neighbourhoods in order to reduce the number of trips in urban areas.
- ii) provision of necessary transport infrastructure to meet present and future needs be based on city, municipal and town master plans.
- iii) the areas planned for development of transport infrastructure should be used for the purpose intended and not otherwise.

## 5.6 Transport for Disadvantaged Group in Urban Areas

### 5.6.1 Objective

5.6.1.1 To have an efficient and effective transport system that is convenient to facilitate movement of disadvantaged population.

### 5.6.2 The Issue

5.6.2.2 The NTP recognises the transport problem faced by special groups of population including students, people with disabilities and elders in urban areas. The existing transport system hardly takes account of the needs of such vulnerable groups of population.

5.6.2.2 In order to adequately facilitate the movement of disadvantaged population in urban areas, the following policy direction will be pursued:-

- i) the government, parents and operators be responsible and contribute towards solving the transport problem to the groups.
- ii) emphasise on the need for the communities to recognise the existence of the special groups of population and modalities for providing adequate transport should be considered without jeopardising the commercial aspects for service providers.
- iii) parents/guardians should equally be responsible for meeting transport costs related to their children, elders and disabled people .
- iv) the government will have to evaluate its role in providing Public Services obligation (PSO).

## 5.7 Public Vehicle Design Standards and Specification

### 5.7.1 Objective

5.7.1.1 To have appropriate and acceptable vehicle design, standards and specification to cater for the needs of various groups.

### 5.7.2 The Issues

5.7.2.1 The design, standards and specifications for public transport vehicles should ensure safety, security and comfort to all users including disadvantaged group such as elders, people with disability and children. Most of the existing vehicles do not accommodate the needs of the disadvantaged group.

5.7.2.2 In order to have appropriate and acceptable vehicle design, the NTP

provides the following policy direction:-

- i) technical specification of buses, including appropriate bodies to be drawn by the ministry responsible for advice of the safety/regulate and gazette.
- ii) the sub-standard buses currently in operation are gradually removed and appropriate buses are licensed.
- iii) future importation and licensing of passenger vehicles should lay emphasis on high capacity buses 30 passengers for minibuses and up to 90 passengers for large buses).

## 5.8 Institutional Arrangement for Urban Transport Management

### 5.8.1 Objective

5.8.1.1 To have a comprehensive and effective institutional set up.

### 5.8.2 The Issues

5.8.2.1 Management of various aspects of urban transport is presently divided between the government and urban authorities. The Ministry of Communications and Transport deals with policy issues and licensing; City/municipal councils manage urban roads and license town buses and taxis; Ministry of Works deals with axle loads control; Ministry of Home Affairs is responsible for enforcement of traffic rules and regulation; and Vice President's office is responsible for environmental issues.

5.8.2.1 The main disadvantage of this arrangement is fragmentation of the planning function with respect to provision, maintenance and development of urban infrastructure and services. This leads to uncoordinated urban development and hence compounds the urban transport problem.

5.8.2.1 In order to have an effective institution set up for urban transport management, the following policy direction will be implemented:-

- i) mandating one Ministry to undertake the Coordination of diverse transport activities
- ii) reviewing the existing institutional set up in view of improving inter-agency coordination/co-operation.
- ii) streamlining institutional functions and responsibilities
- iii) improving the capacity of urban authorities to effectively plan,

manage and regulate provision of efficient urban transport infrastructure and services

- iv) strengthening the capacity of the Ministry responsible for transport to effectively develop policies and strategies.

## 5.9 Road Transport and Environment

### 5.9.1 Objective

- 5.9.2.1 To provide for urban road transports that is environmentally friendly and sustainable.

### 5.9.2 The Issues

- 5.9.2.1 The issue of sewage and drainage systems is important when developing road infrastructure. In the urban areas pollution is becoming a serious issue due to poor sanitation and sewage disposal. Increase in industrial and coastal pollution has made matters worse. Lack of timely and adequate road maintenance leads to major problems, including poor drainage system, road flooding and damage to infrastructure and pavement. The end result is collapsed road sections which become impassable during heavy rains, and which in turn result in traffic delays and vehicle damage.

- 5.9.2.2 Pollution in urban areas arises from several sources, including vehicle exhaust emissions, leakage and spillage from vehicles, garages, and fuel storage facilities. Lack of control over vehicle maintenance standards leads to further deterioration in vehicle performance and hence leads to increased risk of accidents, and quality of exhaust emissions. Traffic congestion exacerbates this situation, with reduced fuel efficiency, increased fumes, noise and vibration effects. The end result is a reduction in the water and air quality, decreased pedestrians' safety and increase in chronic health effects.

- 5.9.2.3 In order for the urban residents to be provided with road transport that is environmentally friendly and sustainable, the following policy directions will be pursued: -

- i) minimise traffic-generated pollution
- ii) enhance road traffic safety and management
- iii) raise environmental awareness
- iv) strengthen local environmental institutions
- v) enhance human resource development
- vi) provide for adequate and comprehensive drainage system during design, construction and maintenance of urban road infrastructure.

**5.10 Rail Transport and Environment****5.10.2 Objective**

5.10.1.1 To promote the use of rail transport in the urban areas considering that it is the most environmentally sound mode.

**5.10.2 The Issue**

5.10.2.1 Railway mode poses some risk associated with transportation of large quantities of goods, which might have an effect to the environment. Such goods include petrochemicals whose spill over may cause extensive damage to the environment.

5.10.2.2 In order to provide environmentally sound railway transport in urban areas, the policy directions to pursue includes:-

- i) promote rail transport for mass movements of passengers in urban areas so as to reduce the rate of pollution and congestion,
- ii) continue to liberalise and privatise railway transport operations to make services efficient.

**5.11 Urban Transport Planning and Financing****5.11.1 Objective**

5.11.1.1 To ensure that there is adequate urban infrastructure planning and financing.

**5.11.2 The Issue**

5.11.2.1 Financing of road maintenance, improvement and development has been through disbursements from general funds of the urban authorities and from the Central Government. Donor assistance has also been provided particularly for rehabilitation works. However, funding levels from these sources have proven to be grossly inadequate.

5.11.2.2 In order to ensure that there is adequate urban infrastructure planning and financing, the following policy direction will be pursued:-

- i) user charges are to be instituted to recover pavement damage and general road maintenance cost
- ii) urban authorities should identify and mobilise resources including those from the private sector
- iii) in urban peripheral, local communities should be involved in planning and mobilising resources including labour for construction and maintenance of neighbourhood roads. Where NGO/donor funding is available, the community should provide matching funds.

- iv) the government will have to provide PSO where necessary for urban infrastructure development.

## 5.12. Air Transport and Environment

### 5.12.1 Objective

- 5.12.1.1. To promote the use of air transport as a quick access mode and an alternative to other modes for inaccessible areas in the considering that it is the most efficient and environmentally sound mode.

### 5.12.2 The Issue

- 5.12.2.1 Air transport mode poses some risk associated with infrastructure development requiring heavy investment, operational cost and human capacity. The economic base to exploit air transportation of large quantities of goods and passenger is not fully developed. Such goods include agricultural and industrial products, and passengers include tourism.

- 5.12.2.2 In order to provide efficient and environmentally sound air transport in remote areas, the policy directions to pursue includes:-

- i) promote air transport development including its infrastructure and human capacity
- ii) promote air transport for mass movements of passengers and goods in remote areas so as to reduce the congestion in other modes,
- iii) continue to liberalise and privatise air transport operations to make the services more efficient.
- iv) make deliberate effort to build up human capacity related to this mode;
- v) continue to reform, privatise air transport institutions responsible for human capacity to make services more efficient.

## 5.13 Maritime Transport and environment

### 5.13.1 Objective

- 5.13.1.1 To promote the use of waterways transport as a cheaper type of mode and an alternative to other modes for areas which have rivers, lakes, and adjacent to oceans in the considering that it is the most efficient and environmentally sound mode.

### 5.13.2 The Issue.

- 5.13.2.1 Maritime transport mode suffers from some risk associated with infrastructure development requiring investment, operational cost and human capacity.

The economic base to exploit water transportation of large quantities of goods such as agricultural, industrial products, and passengers is not well developed.

5.13.2.2 In order to provide efficient and environmentally sound maritime transport the policy directions to pursue includes: -

- i) promote waterways transport development including its infrastructure and human capacity
- ii) promote waterways transport for mass movements of passengers and goods in areas accessible by water so as to reduce the transport demand.
- iii) continue to liberalise and privatise waterways transport operations to make the services more efficient.
- iv) make deliberate effort to build up human capacity related to this mode of transport;
- v) continue to reform and privatise waterways transport institutions responsible for human capacity to make services efficient.

5.14 Pipeline Transport and Environment

5.14.1 Objective

5.14.1.1 To promote the use of pipeline transport as a quick economic access mode for fluids.

5.14.2 The Issue

5.14.2.1 Pipeline mode suffers from some risk associated with infrastructure development with a lot of investment requirement, operational cost and human capacity. The economic base to exploit pipeline transportation of goods is not developed.

5.14.2.2 In order to provide efficient and environmentally sound pipeline transport in large topological region the policy directions includes:

- i) promote pipeline transport development including its infrastructure and human capacity
- ii) promote pipeline transport for fluids.
- iii) continue to liberalise and privatise pipeline transport operations to make the services more efficient.
- iv) make deliberate effort to build up human capacity related to this mode of transport;
- v) continue to reform and privatise pipeline transport institutions responsible for human capacity to make services more efficient.