

**UNITED REPUBLIC OF TANZANIA  
MINISTRY OF COMMUNICATIONS AND TRANSPORT**



**NATIONAL TRANSPORT POLICY**

**2003**

**United Republic of Tanzania**  
**Ministry of Communications and Transport**

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## 1.0 INTRODUCTION

### 1.1 Vision

The vision is:-

To have efficient and cost-effective domestic and international transport services to all segments of the population and sectors of the national economy with maximum safety and minimum environmental degradation.

### 1.2 Mission

Based on the vision above, the mission is to:-

Develop safe, reliable, effective, efficient and fully integrated transport Infrastructure and Operations which will best meet the needs of travel and transport at improving levels of Service at lower costs in a manner, which supports government strategies for, socio-economic Development whilst being economically and environmentally sustainable.

### 1.3 Characteristics

1.3.1 The transport sector in Tanzania is characterized by high cost, low quality services due to various reasons including the existence of high backlog of infrastructure maintenance and rehabilitation, inadequate institutional arrangements, laws, regulations and procedures which are not consistent or compatible with each other to create conducive climate for investment and hence growth of the sector, inadequate capacity caused by low level of investment in resources, and low level of enforcement of safety, environmental sustainability and gender issues.

1.3.2 The deteriorated state of the transport sector coupled with unsatisfactory operational performance signifies another fundamental characteristic of the sector. This problem has been stalling the progress of the various development programmes. Persistent weaknesses in the development and management of the sector have been identified to include:-

- i) the planning and management responsibilities which are divided between Ministries responsible for Transport, Works, Home affairs, Regional Administration and Local Government and Finance.
- ii) lack of coherent policy guidance to those concerned with the planning and development of the transport sector leading to disjointed plans and programmes.

- iii) inadequately formalised coordination and consultation among principal actors.
- iv) shortage of adequately trained and experienced personnel in the transport planning departments and units.
- v) non- application of scientifically based planning methodologies fitting our environment coupled with non-existent data systems.
- vi) inadequate infrastructure and facilities to cater for non motorized transport such as carts, bicycles, and also simple motorized equipment such as motorcycles, motor tricycles, and similar intermediate technology facilities.
- vii) low managerial capacity in public enterprises; under capitalization of such enterprises and absence of meaningful competition.
- viii) lack of regulatory regimes that are adequately equipped to enhance competition, fair operational practices and complementarity of services; and
- ix) insufficient dialogue between the public and private sector due to poorly developed service providers as well as service users or consumer associations.

1.3.3 Issues, which will have to continue to be pursued to counter some of the problems raised above include:-

- i) enhancement of institutional reforms, which have been going on in all aspects of the transport sector. Therefore, the need for strengthen coordination and regulation of the transport matters under the ministry responsible for transportation remains paramount. Also the need for separation of policy formulation and strategic planning; regulation and service provision or operations from each other is more apparent now to ensure better sector management.
- ii) putting in place a framework of strategic planning which should be worked out by the Ministry responsible for transport.
- iii) enhancement of formal coordination and consultations through sectoral technical consultative meetings and annual national consultative technical meetings such as the Transport Policy and Planning Workshops, Rural Access Group consultative meetings, and Annual Road conventions.
- iv) ensuring the existence of a computer based transport data base; and
- v) putting in place more systematic coordination of transport planning and operations under the auspices of regional cooperation especially in the SADC and East African regions.

1.3.4 The National Transport Policy (NTP) takes cognisance of the fact that fundamental requirement for effective transport system is an institutional framework which ensures that:-

- i). each fundamental element of transport is provided in the appropriate quality, quantity and form.

- ii) all elements of transport are combined in a technologically optimum way for each mode of transport
- iii) each mode is operated in a most efficient way; and
- iv) appropriate mechanisms exist to ensure effective intermodal coordination and communication between the user, the operator, the regulatory agency and the government on all transport questions and issues.

The above list of issues needs to be followed up more closely to enable service delivery and hence remove impediments in the development of other sectors of the economy.

## 2.0 STATUS OF TRANSPORT INFRASTRUCTURE AND SERVICES

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The transport network in Tanzania comprises:-

### 2.1 Road Network

- 2.1.1 Road transport with roads network totalling about 85,000km. The network consists of trunk (10,300 km), regional (24,700 km), district (20,000 km), urban (2,450 km) and community (27,550 km) roads. Only 5% of the road network is bituminised.

The medium and long term objective is to bituminise all trunk roads while at the same time ensuring that all-regional as well as key district and urban roads are sufficiently rehabilitated and maintained to ensure smooth flow of traffic. The NTP underlines the need for the private sector participation including the local communities in the planning and rehabilitation of the roads that pass through their area.

### 2.2 Railway Network

- 2.2.1 Tanzania railway systems has a total track length of 3,685 km (mainland) out of which 2715 km is operated by Tanzania Railways Corporation-TRC and 970 km by Tanzania-Zambia Railway Authority - TAZARA (970km within Tanzania). Together, the two railways systems link 14 of the 20 regions on the mainland, and neighbouring countries including Zambia, Democratic Republic of Congo, Burundi, Rwanda, Uganda and Kenya. TRC is fully owned by the Tanzania Government, while TAZARA is owned jointly by Governments of Tanzania and Zambia on 50/50 basis.
- 2.2.2 TAZARA has 1,860 km of single track built between 1970 and 1975 from Dar es Salaam to New Kapiri-Mposhi in Zambia, with 970 km in Tanzania Mainland. The railway has major workshops at Dar es Salaam and Mpika with depots at Mbeya, Mlimba, Chozi, and New Kapiri Mposhi. The TAZARA track (1.067 m gauge, 45 kg/m rail, 191 kg concrete sleepers and mostly 1% ruling gradient) permits a maximum speed of 70 km/h.
- 2.2.3 Speed restrictions cover less than 10% of TAZARA line and about 40% TRC line. Both TRC and TAZARA have axle load limits (governed by condition of bridges) of 20 tons. Both speed and axle load restrictions have been gradually increasing.

The role of railway transport for efficient inter-modal transit traffic can not be over emphasized. NTP underlines the need for further development of modal

and inter-modal interface facilities and institutions. For this to happen, involvement of private sector in infrastructure development and operation of railways is considered necessary.

### 2.3 Maritime and other Water Transport

- 2.3.1 Maritime transport is characterised by the presence of major sea ports, which are Dar es Salaam, Tanga and Mtwara, managed and operated by THA, and Inland water transport with ports in lakes Victoria, Tanganyika and Nyasa managed by Marine Services Company Ltd. Other smaller ports are Kilwa, Lindi, Mafia, Pangani and Bagamoyo. Dar es Salaam Port, which is the biggest port, has 11 berths of which 8 are for break-bulk (6,400,000 tonnes) and 3 for containers (120,000 TEUS). The port also has an oil jetty with the capacity of handling larger tankers of up to 40,000 DWT. The challenge for the port of Dar es Salaam is that of attracting greater traffic from its hinterland inside Tanzania and from neighbouring land locked countries.
- 2.3.2 Maritime transport in Zanzibar is characterised by the presence of major sea ports, which are Malindi and Mkoani, managed and operated by Zanzibar Ports cooperation. Other smaller ports include Chake Chake, Weshi, Wete which are in Pemba and Mkokotoni which are Unguja,
- 2.3.2 Inland shipping is currently undertaken on lakes Victoria, Tanganyika, and Nyasa. The major ports are Mwanza, Bukoba and Musoma on Lake Victoria, Kigoma on Lake Tanganyika, and Itungi on Lake Nyasa. There is also a potential for navigation in Lake Rukwa and along some of the big rivers e.g. Kagera which together with the three lakes constitute thousands of square kilometres of natural navigable waters, availing Tanzania mainland a most valuable transportation resource that has not been sufficiently utilized. Besides port facilities and navigational aids are inadequate.
- 2.3.3 NTP recognises the need for further restructuring of ports for increased infrastructure, safety, Security and operations efficiency. Private sector involvement in the enhancement of infrastructure, services in port development, operations and in shipping services is underlined. The role of the Government in the development of the basic maritime infrastructure, safety, Security remains paramount.

### 2.4 Air Transport

- 2.4.1 Air transport with three international airports Dar es Salaam, Kilimanjaro and Zanzibar, major domestic airports which include Mwanza, Mtwara, Dodoma, Tabora and numerous other smaller aerodromes and air strips making a total of about 60 government airports. Presently, the domestic airports and strips do not generate enough traffic to make them commercially viable.

2.4.2 Domestic air travel is important for Tanzania because of the long distances involved between major regions. The domestic services also serve to satisfy business and tourism markets. The number of licensed domestic charter operators has increased from 16 in 1992 to 31 in 2001. International scheduled services are governed by Bilateral Air Agreements concluded between Tanzania and other states. However, under the current regional groupings, the challenges ahead is on (while members are progressively liberalising their respective air transport industry) how to harmonise national air transport policies to make them compatible and hence facilitate smooth flow of goods and services among the member States. Another challenge for air transport is to cater for increased demand for higher standard tourist traffic and transportation of non-traditional commodities e.g. flowers, fresh fruits, minerals etc. Under globalisation concept, the idea of having designated national Airline standing alone is now out of date. The challenge ahead is on how we can integrate our national airlines regionally in the provision of air services worldwide. It is a high time that the Yamoussoukro Decision (YD) is implemented to attain sustained regional integrated air transport services.

## 2.5 Pipeline Transport

2.5.1 The only pipeline transport in the country is the one which conveys crude oil products from Dar es Salaam to Ndola refinery in Zambia, a distance of 1750 km. THA has a single buoy mooring for delivery of crude oil from the jetty to the TAZAMA pipeline. Besides, a pipeline is being constructed from Songo Songo to Dar es Salaam to transport natural gas, and another pipeline under consideration is from Dar es Salaam to Mwanza to transport petroleum products. Further private investment in this mode of transport is encouraged.

## 2.6 Urban Transport

2.6.1 Urban transport in Tanzania is predominantly both motorised and non-motorised road transports. Other modes of transport including trains, water are not yet developed. Urban transport is constrained by low level of motorization currently estimated at 26 vehicles per 1,000 inhabitants. Journey delays due to traffic congestion on roads, rush for vehicles arising from equipment shortage and low capacity, unfriendly/unbecoming hostile behaviour of bus crews are common features in Dar es Salaam urban transport.

Further, road accidents are on the increase due to non-adherence and enforcement of rules and regulations. Disregard of proper infrastructure for Non-Motorised Transport (NMT) introduces a heavy penalty to the poorest section of the town dwellers. Services are concentrated to the major arterial roads with little penetration to neighbourhoods and newly developed peri-urban areas. Environmental problems (noise, air and water pollution) are on the increase as a result of traffic congestion.

## 2.7 Rural Transport.

The rural transport is predominantly non-motorised, walking and head-loading, poor infrastructure development, high transport operation costs and charges experienced by operators and users respectively. Low demand of transport is due to low level of affordability. Other modes of transport including trains, water are not yet developed.

## 2.8 Regulatory and Institutional Arrangements

2.8.1 Several authorities are involved in the regulation of road transport. These are:-

- i) Ministries of Communications and Transport (Road Transport licensing),
- ii) Works (axle-loads control, safety control),
- iii) Home Affairs (Traffic Law and Regulations enforcement),
- iv) Finance (, motor vehicles registration, road toll),
- v) Regional Administration (regional transport licensing),
- vi) Vice President (environment), and
- vii) Planning Commission (key transport utilities).
- viii) Trading and Industry (Vehicle Licensing)

Major weaknesses in the regulation include poor coordination between authorities, poor governance (corruption) and poor enforcement. Therefore, the challenge is to streamline the functions and increase coordination, and to link organically, policy formulation, regulation and implementation oversight.

2.8.2 Existing regulations for the railway transport systems are meant to ensure smooth, safe and reliable services. These internally developed measures relate to engineering, operations and communications procedures. Missing are the regulations governing inter-modal relationship. A regulatory body responsible for air transport has been established. Surface and Maritime transport regulatory bodies are in the process of being established.

2.8.3 Maritime transport is guided by both national and international regulatory regimes. The current Merchant Shipping Act is supplemented by international conventions, treaties and codes of conduct in order to ensure that the national rules and regulation conform to the international standards on practices, procedures and safety as per International Maritime Organization regulation. However, there is considerable inadequacy in safety and other water ways procedures.

2.8.4 Regarding air transport, Tanzania abides by the ICAO standards and practices in accordance with international regulation of civil aviation due to the international nature of air transport. The Tanzania Civil Aviation Authority (TCAA) regulates and ensures orderly development of civil aviation in the country.

- 2.8.5 Regarding the future, the government is effectively pulling itself out of business operations to remain with the key role of policy formulation, strategic target setting, regulation and monitoring. The private sector is expected to provide transport services and to participate in provision and management of transport infrastructure. Therefore, new regulatory regime will be concerned with standards of performance, safety, protection of infrastructure, environment, protecting consumers against monopolistic practices and dominant positions, setting competition rules, and protecting the long-term interest of the nation. The existing legislation will have to be revisited to suit the new order.
- 2.8.6 The NTP aims at guiding the development of an efficient, well integrated and coordinated transport infrastructure and operations, which are economically, financially, socially and environmentally sustainable.

### 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.

## 6.0 RURAL TRANSPORT POLICY DIRECTIONS

### 6.1 Rural Infrastructure

6.1.1 Rural transport infrastructure is at four levels i.e. household, village, ward and district.

### 6.2 Household and Village Level Infrastructure

#### 6.2.1 Objective

6.2.1.1 To organise the households through participatory approach to contribute in the improvement of their infrastructure.

#### 6.2.2 The issue

6.2.2.1 The main types of infrastructure used at the household level are the paths, trails, tracks, which are cleared narrow passages, used for shorter trips of 5 to 10 km. Rivers, streams and locally made bridges are sometimes used. Such infrastructure does not facilitate households to acquire their essential needs at a minimum possible cost. Besides, most of the valuable resources including time and energy are spent in fetching water and firewood from distant places.

6.2.2.2 The policy direction is to:-

- i) involve the households in infrastructure planning, financing and maintenance.
- ii) development of capacity in terms of skills and other resources to enhance quality of infrastructure.

### 6.3 The Ward and District Level Infrastructure

#### 6.3.1 Objective

6.3.1.1 To develop and expand the infrastructure and ensure easy accessibility.

#### 6.3.2 The Issues

6.3.2.1 The village and district roads in rural areas are used for travel for longer distances and are usually accessible to motor vehicle traffic. The infrastructure is crucial in providing linkage of rural communities to the urban market, where the agricultural inputs and products are transported to and from the farm gates respectively. The state of the existing roads is

poor and can hardly be used especially during wet seasons due to inadequate maintenance. This leads to poor or unreliable transport services, which in turn contribute to post harvest loss in agricultural products.

6.3.3.1 The poor condition of the infrastructure has imposed a significant penalty on agricultural activities through higher vehicle operating costs, delays caused by long travel time to the nearest transport services, decreased crops and animal production, and therefore adversely affecting the economy.

6.3.3.2 The NTP provides the following policy directions:-

- i) mobilise and involve the communities in infrastructure development.
- ii) increase public and private sector investment in village and district access roads.
- iii) institutional structure be properly defined to enable capacity building and smooth exploitation of available physical, financial and human resources in the development and maintenance of infrastructure.
- iv) planning done at the district or regional level to involve the local communities which ultimately will be entrusted with the bulk of the execution as well as the maintenance works.

#### 6.4 Rural Infrastructure Maintenance

##### 6.4.1 Objective

6.4.1.1 To develop the rural capacity to plan, design, maintain and construct rural infrastructure.

##### 6.4.2 The Issues

6.4.2.2 Rural infrastructure is hardly passable especially during the rainy seasons. The infrastructure sometimes gets completely destroyed making accessibility impossible. Most of village dwellers are not aware of their role in making their contributions of the improvement of their roads, bridges and other transport infrastructure.

6.4.2.2 Maintenance has been irregular and largely limited to spot improvements made by villagers with little or inadequate resources and skills, yielding just short-term results. Such infrastructure bars growth of economic activities as well as hindering local transport and travel.

6.4.4.3 The following policy direction will be pursued:-

- i) sensitise communities and villagers to realize their important role in contributing to infrastructure planning, design, construction and maintenance.
- ii) contract local communities to manage the roads in their localities.
- iii) develop a culture of routine maintenance among the rural communities.
- iv) explore ways of ensuring availability of a dedicated fund for rural infrastructure maintenance.
- v) improve community capacity building in rural infrastructure maintenance.

6.5 Institutional Arrangements for Rural Infrastructure Development.

6.5.1 Objective

6.5.1 To streamline the institutional arrangements.

6.5.2 The Issues

6.5.2.1 The current institutional arrangements assign the responsibility to manage feeder and district roads to local government. Community roads are relegated, by mandate or by default to be managed by local communities whose financing capacity is limited. Furthermore, external funding is commonly restricted to the national and regional roads with less emphasis on district roads.

6.5.2.2 The policy direction is to enable local government to be more responsible and accountable for overseeing rural infrastructure development and management.

6.6 Gender Perspective

6.6.1 Objective

6.6.1.1 To minimise rural transport related problems to women.

6.6.2 The Issues

6.6.2.1 Women are traditionally most active in the day to day upkeep of rural life. They spend an estimated 75% of their time walking long distances to and from farms and other production centres. Due to poor rural transport infrastructure what they produce becomes small.

6.6.2.2 In order to alleviate rural women transport related problems, the following policy directions will be pursued:-

- i) encourage non-motorised means of transport .
- ii) improve rural transport infrastructure

## 6.7 Rural Road Transport Services

### 6.7.1 Objective

6.7.1.1 To facilitate movement of goods and services in rural areas

### 6.7.2 The Issues

6.7.2.1 The quality and quantity of rural transport services profoundly affect the daily lives of millions of residents of rural communities. Goods and agricultural inputs need to be transported to villages and market centres. Social interactions generally require significant level of transport. Despite all these, transport services are limited making the mobility of rural communities difficult and costly.

6.7.2.2 In order to facilitate movement of goods and services in rural areas the policy directions to be pursued include:-

- i) increase private and public sectors participation
- ii) give development of rural infrastructure a deserving emphasis during planning and allocation of transport resources at the national level.

## 6.8 Non Motorised Transport Services

### 6.8.1 Objective

6.8.1.1 To make rural inhabitants life relatively easier and enable them to spare more time and energy for productive work.

### 6.8.2 The Issues

6.8.2.1 In rural areas walking and head loading dominate travel and transport activities, and in most cases the movements takes place on footpaths, tracks and trails away from the formal road network. Availability of means of transports such as bus, tractors, pick-ups, trucks and lorries are very low and limited. Many households use NMT like bicycles, tricycles, animal drawn carts and wheelbarrow to transport agriculture inputs and outputs from their fields. The Non-Motorised Transport (NMT) is used at a varying scale depending on the income levels, availability of appropriate livestock, equipment, terrain and social cultural factors. Out of the total carriage in the rural areas, only 25% is done using NMT. This situation reduces

efficiency in economic activities and marketing, hence accelerates poverty in the rural.

6.8.2.2 To address the above situation the following policy direction will be pursued:-

- i) deliberate efforts to promote use of cheap NMT technology
- ii) sensitise the use of NMTs among women in rural areas.
- iii) improve transport infrastructure in the rural areas to cater for all transport means including NMT.

## 6.9 Motorised Transport Services

### 6.9.1 Objective

6.9.1.1 Provide for motorised transport as a cost-effective transport means between village, ward and district levels.

### 6.9.2 The Issues

6.9.2.1 At village, ward and district levels, the most predominant mode is road. Motor transport using vehicles, tractors with trailers; crop purchaser's vehicles, district buses and private minibuses are used in some areas. These cater for longer distance travel to districts moving along regional roads. The use of the road motor transport at this level is poor due to inadequate transport equipment and low demand due to low level of affordability. In such areas where there is inadequate transport facilities and low level of affordability, a non-motorized facilities like bicycles, tricycles, animal drawn carts and wheelbarrow are to be used to ferry both passengers and goods.

6.9.2.2 The policy directions are therefore to:-

- i) coordinate with the responsible sectors with a view of establishing facilities such as schools, health centres, water, energy etc at village proximity.
- ii) plan village development programmes, with transport aspects being considered in conjunction with other important land use, social, economic, cultural factors.
- iii) encourage the use of non-motorised transport to ferry both passengers and goods as an alternative means where there is inadequate motorized transport facilities.

## 6.10 Other Rural Transport Services

### 6.10.1 Objective

6.10.1.1 To see how best the transport potential of water bodies in rural areas can be utilised.

### 6.10.2 The Issue

6.10.2.1 In areas along the coast, lakes, rivers and in islands, the use of water transport needs to be enhanced as a cheap and ideal mode at this level. In this regard, villages need to be encouraged to develop feeder services using small vessels.

6.10.2.2 The policy direction is for the Ministry responsible for transport to liaise with the local authorities in order to explore, identify, and make possible the navigability of portions of rivers and other water bodies.

## 6.11 Rural Transport Services and Agriculture

### 6.11.1 Objective

6.11.1.1 Improve transport services in rural areas to foster agricultural growth.

### 6.11.2 The Issues

6.11.2.2 The efficient transport service in rural areas is needed for speedy delivery of agricultural inputs such as improved seeds, fertilizers, ploughs and other farm implements to the village and household levels, as well as transportation of crops from farms and villages to the markets and other consumption areas. Some of the village and district dwellers have no access to transport services because such services are either unavailable or are hardly affordable. Poor transport services impede the growth in agricultural activities and standard of living of rural communities. Rural areas need to be given primary consideration in transport services through increased transport supply and investment.

6.11.2.3 Since the transport demand side would wish have an effective transport in rural areas to foster agricultural growth, the policy direction to meet this expectation is to:-

- i) promote private sector participation in the provision of transport

services.

- ii) encourage private sector in collaboration with public sector to provide competitive services to make them affordable to rural community

## 6.12 Ownership of Transport Equipment

### 6.12.1 Objective

6.12.1 Increase supply and ownership of transport means/equipment at village, ward and district level.

### 6.12.2 The Issues

6.12.2.1 There is very little motor vehicle ownership at the household level taking affordability into consideration. But at the village and district level, transport ownership is mostly a combination of private or cooperative depending on the prevailing social - economic set up. There is a need to ensure villages and cooperatives perform efficiently and improve transport services in rural areas up to the household level.

6.12.2.2 Furthermore, the pricing or charges for hired transport services at the village and district level need not be entirely determined by the market forces. However, it is very difficult to determine and enforce non-discriminatory rates for both the hirer and supplier of the services.

6.12.2.3 To tackle the afore stated issues the following policy direction will be pursued:-

- i) mobilise resources to enable acquisition of transport equipment.
- ii) let the provision of PSO be pursued whenever necessary.
- iii) capacity building for management, maintenance and operation of vehicles.

## 6.13 Rural Transport and Environment

### 6.13.1 Objective

6.13.1.1 Minimizing wasteful exploitation of natural resources and enhancing environmental protection.

### 6.13.2 The Issues

6.13.2.1 The main concern in rural areas is eradication of poverty. Most economic development activities in the areas depend in one way or another on the environment. For example farming, firewood, water sources all depend on the existence of forests. Rural residents, especially the women have to

walk long distances from their homes to fetch either firewood or water. Satisfactory intra-regional and rural road coverage will help in eradicating poverty taking into account that requirements such as firewood may be fetched from other areas having a comparative advantage of producing them with minimum effects to the environment.

6.13.2.2 In order to promote environmental protection aiming at reducing poverty in rural areas, the policy direction is to:-

- i) improve rural transport infrastructure to reduce rural travel burden
- ii) influence use of alternative energy sources such as bio gas and solar available at the residential localities, instead of travelling long distances looking for fire woods as source of power.
- iii) raise environmental awareness.

## 7.0 PAN-TERRITORIAL TRANSPORT POLICY DIRECTIONS

### 7.1 Pan - Territorial Road Infrastructure

#### 7.1.1 Objective

7.1.1.1 Facilitate road transport corridor development through construction, rehabilitation and maintenance so as to have smooth flow of goods and services and hence attract investment in other sectors.

#### 7.1.2 The Issues

7.1.2.1 Pan-Territorial Transport is intended to improve transport services within the country in order to raise the level of its contribution to the national economy. It is supposed to provide a supportive transport system that will facilitate movement of passengers and freight between the regions with surplus produce and those with deficit and/ or to other markets. In view of this, the need for smooth traffic flow from one part of the country to another is emphasised. The transport corridor concept has therefore been developed under the umbrella of Pan-Territorial transport. The concept is geared towards ensuring that all corridors with their link sections are accessible and contribute to the growth of economic activities. The development of these corridors will eventually attract investment in other sectors of economy.

7.1.2.2 About nine Road Transport Corridors have been identified. They embrace a total road network of about 10,300 km, 40% of which is bituminised. The challenge is to bituminise the remaining 60% of the road transport corridors. The existing transport corridors include:-

- i) TANZAM corridor which extends from Dar es Salaam-Morogoro-Mikumi (link to Ifakara and Mahenge)-Iringa-Mafinga (with a link to Mgoololo)-Makambako-Mbeya (with a link to Itungi Port and Malawi)-Tunduma (1324 km); The corridor facilitates the existence and growth of economic activities in the urban and rural areas extending along it. These activities include agriculture, tourism, mining and trade.
- ii) north east corridor from Dar es Salaam-Tanga-Arusha-Namanga (950 km); This corridor provides people living in regions it passes with an incentive to carry out economic activities which include production of both subsistence and cash crops, promotion of tourism and mining.
- iii) southern coastal corridor which extends from Dar es Salaam-Lindi-Mtwara (508 km); The corridor is intended to pave the way for easy

- communications between the regions and the rest of the country. When fully developed it is expected to promote economic activities in the southern parts of the country, which are comparatively low.
- iv) central corridor from Morogoro on Tanzam-Dodoma-Mwanza (on Lake corridor)-Rusumo (Rwanda border) and Kobero (Burundi border) in the West (1584 km); Along this corridor activities which are carried out include extensive farming, and mining. Further improvement of the corridor will attract new investments and enhance production as well as employment.
  - v) lake circuit extending from Sirari on Kenya borders to Musoma-Mwanza-Bukoba and Mutukula the border with Uganda (1019 km); The circuit has great potential for many economic activities including agriculture, mining, tourism, fishing and trade. Development of this corridor will attract more investment and enhance communications between the regions. Availability of the lake water brings about the need for development of manufacturing and processing industries.
  - vi) southern corridor (1326 km) from Lindi – Mtwara -Songea linking to Makambako on the Tanzam and to Mbamba Bay on lake Nyasa; The corridor promotes agricultural production including livestock and fishing, mining, free trade, and urbanisation.
  - vii) great north corridor which extends from Iringa on the Tanzam corridor to Arusha-Namanga (1024 km); This corridor plays an important role in increasing the country's productivity through expansion of economic activities such as agricultural schemes, mining, and tourism. Further efforts need to be done to ensure full exploitation of economic potentials along the corridor.
  - viii) western corridor (1286 km) from Tunduma on the Tanzam corridor-Sumbawanga-Mpanda-Uvinza-Kigoma-Nyakanazi and Nyakahura on the Lake circuit corridor; The Western corridor potential is yet to be fully exploited. Economic activities along this corridor include agriculture, tourism, mining, timberworks, fishing, and gold smiting.
  - ix) mid-West corridor extending from the Central corridor in the East to the Tanzam corridor in the South-west; Potential of this corridor includes such possible development activities as agriculture, forestry development, tourism, and mining. Full exploitation of this potential will positively contribute to the national economic growth. In addition to the nine corridors there is also a corridor made up of the Dar es Salaam access roads, which permit smooth traffic flow for increased efficiency in business performance.

7.1.2.3 Generally, these corridors and their feeder links interconnect most parts of the country. They promote trade and investment by opening up areas of key economic activities; providing the required competitiveness through reduction of transport costs. They also provide connections to areas of

economic potentials such as mineral deposits, tourism, agriculture, and manufacturing. This is in addition to enhancing social integration as well as inter and intra regional cooperation through trading.

- 7.1.2.4 In order to ensure that all road transport network corridors with their link sections are accessible and contribute to the growth of economic activities, the policy direction is to:-
- i) promote private sector participation in investing and financing the road sections which have potential commercial viability.
  - ii) enhance public investment in either partnership with private sector or as PSO for non-commercial road infrastructure.
  - iii) strengthen infrastructure planning and resource mobilisation to clearly indicate relationship between the same and economic potential.
  - iv) enhance availability and utilisation of infrastructure construction equipment.
  - v) ensure local capacity in designing, supervising and executing infrastructure works.
  - vi) promote intra and inter-modal integration.
  - vii) incorporate gender perspective in corridor development and management.
  - viii) carry out an Environmental Impact Assessment (EIA) for all transport projects and ensure that construction and maintenance works adhere to environmental protection guidelines.

## 7.2 Pan - Territorial Road Institutional Structure

### 7.2.1 Objective

- 7.2.1 To establish appropriate institutional arrangements for efficient road transport corridor management.

### 7.2.2 The Issues

- 7.2.2.1 The responsibilities for Pan-territorial road infrastructure management are vested in the Central Government through the Ministry responsible for Works. Ministry responsible for Transport is also involved at policy, planning and regulatory levels while the Ministry of Home Affairs is involved in enforcement of regulations and the Ministry of Finance at the licensing level. The involvement of multiple institutions in this issue causes lack of sufficient accountability hence leading to inefficiency in both management and administration of road sub-sector. Efficient and effective roads regulatory system is required for improved management and increased accountability on roads. To achieve the above goal, an institutional

restructuring need to be done to assign the responsibility for regulation of the road sub-Sector to a single surface transport agency.

7.2.2.2 The following policy directions will be pursued:-

- i) enhancing the capacity of the Ministry responsible for roads to effectively coordinate the development of trunk roads;
- ii) delegating authority, responsibilities and resources (devolution of revenue collection and spending) to regions;
- iii) ensure that regional authorities have a system in place for investment in road maintenance and development.
- iv) this underscores the need for having a single regulatory body responsible for all matters of surface transport.
- v) charging the government with the primary responsibility for enhancement of road infrastructure development.

7.3 Railway Transport Infrastructure

7.3.1 Objective

7.3.1.1 Improve and expand railway network to enable exploitation of and transport of bulky natural resources and evacuation of products especially where long distance transport is involved.

7.3.2 The Issues

7.3.2.2 TAZARA and TRC are the two railway systems that run parallel to trunk roads linking 14 of the 20 regions of the mainland. The systems differ in gauge (TRC's is 1 m and TAZARA's is 1.067 m) making domestic and regional delivery of integrated services cumbersome.

7.3.2.3 The policy directions aiming at improving and expanding the railway network include:-

- i) integrating the railway infrastructure to capture more domestic and transit traffic by strengthening interchange and interface facilities
- ii) enhancement of public investment in either partnership with private sector or as PSO for non commercial railways infrastructure
- iii) ensure local capacity participation in designing, supervising and executing infrastructure works.
- iv) develop a road transport system that makes roads feed into other modes of transport such as the railway network, hence ensuring modal complementarities.
- v) development of infrastructure be the primary responsibility of the government.

#### 7.4 Air Transport Infrastructure

##### 7.4.1 Objective

7.4.1 Improve and expand regional airports with ability to cater for various types of aircraft (a minimum size of Fokker Friendship aircraft) for 24 hours operations.

##### 7.4.2 The Issues

7.4.2.1 Regarding air transport infrastructure, there are more than 60 airports including airstrips serving domestic and international traffic. The major airports are Dar es Salaam, Kilimanjaro, Zanzibar, Mwanza, Dodoma, Tanga, Mafia, Mtwara and Pemba.

7.4.2.2 The state of airports infrastructure is poor and detracts the growth of aviation sub sector in Tanzania. It is faced by a number of critical problems including inadequately maintained runways, aprons, terminal buildings and facilities; poor state of navigation facilities and fire fighting equipment; poor airport planning and management; and lack of funds for acquiring necessary equipment.

##### 7.4.3 The policy directions include:-

- i) involve the private resources in airports operations, maintenance and where possible development.
- ii) streamline institutional structure by decentralizing the management and development of the smaller and other non-commercial airports to the urban and district councils.
- iii) government will have to provide PSO where necessary.
- iv) development of infrastructure be the primary responsibility of the government.

#### 7.5 Maritime Transport Infrastructure

##### 7.5.1 Objective

7.5.1.1 Establish infrastructure and facilities for maximum exploitation of water transport for coastal and inland waterways.

##### 7.5.2 The Issues

7.5.2.1 The major seaports are Dar es Salaam, Mtwara and Tanga and other smaller ports include Kilwa, Lindi, Mafia, Pangani and Bagamoyo. The major inland ports are Mwanza, Bukoba and Musoma (on Lake Victoria),

Kigoma (on Lake Tanganyika) and Itungi (on Lake Nyasa).

- 7.5.1.2 The main critical problems facing both major and smaller ports include poor port facilities and navigational aids; inefficient institutional framework; and inadequate maintenance of ports infrastructure. However, the role of the government to this area needs not to be over emphasised.
- 7.5.1.3 In order to have an effective water transport for coastal and inland waterways, the policy measures include:-
- i) establish regulator to regulate among other sub-sectors, the maritime transport to ensure appropriate design, construction and maintenance of ports infrastructure;
  - ii) concession the existing port facilities to private investors;
  - iii) involve of private investors to participate in the provision of ports infrastructure.
  - iv) unify port maintenance and development activities under one entity for both inland water facilities and sea port facilities.
- 7.6 Pan Territorial Transport Services
- 7.6.1 Road Services
- 7.6.1.1 Objective
- 7.6.1.1.1 To provide sufficient and efficient road transport services to all regions in the country so that regional endeavours in development are not constrained by problems of transport services.
- 7.6.1.2 The Issues
- 7.6.1.2.1 In Tanzania, road transport plays a vital role in the movement of goods and passengers. It accounts for over 70% of the total traffic with the balance carried mainly by rail and a smaller amount by coastal and Lake shipping. The private sector operators provide about 90% of the total Pan-Territorial road transport services. Currently, the demand for road transport service is increasingly high resulting into high costs and low quality services due to poor infrastructure conditions, inefficient regulatory and institutional structure and shortage of technically qualified human resource. Other constraints are the lack of harmonised road transport policy; and disregard to road traffic regulation, enforcement and observance.
- 7.6.1.2.2 The transport system in Tanzania is characterised by its diversity of competing modes and by the alternative patterns of ownership and operation in public and private sectors. Constraints for the provision of such services

include inadequate interface facilities; insufficient facilities such as inland/dry ports, container freight stations and other transfer points, which are necessary for development of integrated transport services.

- 7.6.1.2.3 In order to meet the pan-territorial road transport demand side, the following policy direction will be pursued:-
- i) removal of any administrative tariff setting for trucking and passenger transport and let that be determined by the market.
  - ii) increase the autonomy of the Road Agency in managing, financing, procurement and human resource development.
  - iii) streamlining the institutional structure to remove overlaps of responsibilities between institutions.
  - iv) improve efficient receiving/off-loading, storage and final distribution facilities at destination.
  - v) develop integrated services along identified national development transport corridors
  - vi) enforcement of the existing transport and transport related legislation, review of outdated ones and enactment of new ones in order to keep pace with changing sectoral situations
  - vii) encourage women participation in the provision of transport services.
  - viii) ensure continuous environmental impact assessment in the provision of transport services.

## 7.6.2 Overloading and Axle Load Control.

### 7.6.2.1 Objective

- 7.6.2.1.1 To ensure that roads do not suffer unnecessary distress due to gross vehicle mass, axle mass loads or the combination of the two.

### 7.6.2.2 The Issues

- 7.6.2.2.1 Overloaded vehicle axles coupled with high tire pressures are among the prime reasons that contribute significantly to lower the pavement service life. Disregard of traffic rules and regulation by both enforcers and operators further compounds the problem. To a notable extent, overloading is caused by traffic moving goods to and from neighbouring countries, especially the land-locked ones, using Dar es Salaam harbour. However, a significant overloading is also being done by traffic traversing within the country trunk road network. The government has been using its limited resources in pavement maintenance.

- 7.6.2.2.2 Pavement service life would be ensured by the policy directions:-

- (i) effective enforcement procedures on the permissible axle mass loads and gross vehicle mass and gross combination mass limitations with due consideration of the need to balance financial needs and interest of preserving the trunk roads infrastructure, optimising road transport operations and enhancing road traffic safety.
- (ii) develop/strengthen a pavement management system (PMS) in order to identify the maintenance needs and thereby be able to allocate resources in a more rational and objective manner.
- (iii) launching of public awareness campaigns.
- (vi) looking into possibility of involving the private sector as a form of self-regulation in order to promote voluntary compliance by concessioning the weigh station infrastructure, maintenance and enforcement.
- (iv) building capacity of traffic officers, transport operators and their employees.

### 7.6.3 Railway Services.

#### 7.6.3.1 Objective

- 7.6.3.1.1 To ensure smooth provision of railway services in the country.

#### 7.6.3.2 The Issues

- 7.6.3.2.1 Currently, the railway services are not efficient enough to complement the road transport and therefore need to be improved to meet the demand of its users. A number of reasons contribute to inadequate performance of railways including incompatibility of the two rail tracks for easier service interchange, low availability of locomotives wagons, and spare parts; poor utilisation of assets due to ineffective operation management. These constraints result into inefficient cost-effective services characterised by long delivery and turn around time. Reasons for long delivery time include reduced speed due to gauge and poor track condition; traffic disruptions due to derailments; inadequate and defective signalling and communications facilities; and poor locomotive reliability. Railways operation also suffers from undue competition imposed on them from unlevelled playing field with road mode.

- 7.6.3.2.2 To improve railway services, the following policy measures will be pursued:-

- i) improving railway sector performance to complement that of road;
- ii) integration of the railway systems and other transport modes;
- iii) promote use of railway transport in the exploitation of natural resources especial bulky commodities from various parts of the country;

- iv) reforming the sub sector in a way to encouraging the private sector participation in the investment, financing and provision of railway services.
- v). developing roads, railways, water and even airways in such a way that the services rendered are complementary to each other.

The government to play a key role in the development of the railways infrastructure.

#### 7.6.4 Maritime Transport Services.

##### 7.6.4.1 Objective

- 7.6.4.1.1 To improve the quality of maritime transport services through liberalization and privatisation of port and maritime services.

##### 7.6.4.2 The Issues

- 7.6.4.2.1 The Dar es Salaam port accounts for over 60% of total transit traffic. Despite the potentials, Tanzania does not have effective system or strategy to enable the country to fully exploit this (port) resource and to make use of comparative advantage it has over other landlocked countries. The constraints include poor supporting transport services (i.e. some of the port facilities, the railway and road system), inefficient institutional framework and inadequate funding for new equipment and maintenance of the existing ones.

- 7.6.4.2.2 The improvement of maritime transport services requires that the policy directions should focus at:-

- i) promoting private sector investment in ports with potential commercial viability.
- ii) concessioning ports services to ensure full utilisation of port assets to attract more traffic.
- iii) Enhancing ports performance through integrated transport services.
- iv) improving technical and managerial skills.
- v) review customs procedures, which contribute to excessive congestion in the port, caused by high dwell time of cargo.
- vi) streamlining legislation and institutional framework.
- vii) developing capacity in prevention and control of spills in harbour and port areas.

#### 7.6.5 Exploitation of Abundant Water Resource for Transport.

#### 7.6.5.1 Objective

- 7.6.5.1.1 To ensure maximum exploitation of water transport potential to complement other modes to meet the growing transport demand.

#### 7.6.5.2 The Issues

- 7.6.5.2.1 Tanzania has a great potential for water transport. There is a long coastline, which stretches from the border with Mozambique in the South to the border with Kenya in the North. In addition to coastal waters, Tanzania has three Great Lakes of Victoria, Tanganyika and Nyasa. Also there are many rivers such as Rufuji, Ruvuma, Pangani, Mara, Kagera and several small ones. All these waters, need to be properly utilised to provide freight and passenger transport in areas which are not currently accessible.

- 7.6.5.2.2 The policy direction to be pursued that will ensure maximum exploitation of water transport potential to complement other modes to meet the growing transport demand is to:-

- i) promote use of water transport wherever natural infrastructure exists by creating conducive environment for private sector to operate.
- ii) encourage the provision of accessible, viable and productive landside infrastructure.
- iii) promote a safe and clean marine, maritime and inland waterway environment.
- iv) charge the government with the key role of enhancement of water transport infrastructure, e.g. Ports, piers and related interface facilities

#### 7.6.6 Air Transport Services.

##### 7.6.6.1 Objective

- 7.6.6.1.1 To enhance the capacity of airports operations in order to improve the quality of service.

##### 7.6.6.2 The Issues

- 7.6.6.2.1 The aviation sub sector plays a vital role in the facilitation of the tourism and mining sectors. The demand for domestic air services in domestic markets is substantially high. The provision of services is mainly by ATC and to a less extent by private sector. The KIA is strategically located to serve as a gateway to the tourism industry especially in the northern tourist circuit as well as the trade activities (import/export of

goods) within and outside EAC, and SADC regions. In order to enhance the capacity of major airports especially Dar es Salaam, KIA and Zanzibar, Tanzania needs to make an optimal use of the potential exports in non traditional commodities including horticultural products (that is, flowers and fruits) and vegetables.

7.6.6.2.2 Air transport services have for some years now been poor due to factors which include inadequate skilled manpower and poor deployment of the existing ones; poor services at terminals; poor on time performance; inadequate frequency; high domestic fares due to low traffic; inadequate inter-line facilitation; poor airport planning and management; and lack of investment capital. The challenge for air transport is also to cater forever growing demand of tourist traffic.

7.6.6.2.3 The policy direction that will ensure enhancement of the capacity of airports operations is:-

- i) promote private sector participation in the provision of competitive air transport services in areas with potential commercial viability;
- ii) commercialise airports operation with economic potentials;
- iii) strengthening regulatory machinery.
- iv) review legislation, rules and procedures to ensure compliance with regional civil aviation protocol
- v) attract both tourists and import/export traffic from inside and outside the country with focus at Kilimanjaro International Airport as one of the major focal point of the tourist industry in Tanzania.
- vi) enhance infrastructure in a manner that the government continues to play the leading role while at the same time preparing appropriate grounds for private sector participation.

7.6.7 Pipeline Transport

7.6.7.1 Objective

7.6.7.1 To develop pipeline mode as an economic alternative for transportation of fluids.

7.6.7.2 The Issues

7.6.7.2 Pipeline is an ideal mode for transportation of some special and bulky commodities like water, oils and gas. It is safer and cheaper especially for long distance carriage. Currently, the system is not yet fully developed to be able to meet the fast growing demand. Water for instance needs to

be transported in bulk through underground pipeline from areas of abundance to areas of high scarcity for various purposes including drinking and irrigation and other productive activities.

7.6.7.3 The policy direction that will ensure development of pipeline mode of transport is:-

- i) promoting the use of pipeline for transportation of oil, gas, water and other fluid products from supply to high demand points.
- ii) developing local capacity to design, supervise, execute and maintain pipeline.
- iii) encouraging private sector participation.
- iv) integrating pipeline into major transport corridors.
- v) government to provide for PSO whenever necessary

## 8.0 INTERNATIONAL TRANSPORT POLICY DIRECTIONS

### 8.1 International Transport Infrastructure

#### 8.1.1 International Roads Infrastructure

##### 8.1.1.1 Objective

8.1.1.1.1 To ensure that all roads linking neighbouring countries are expanded/ improved to facilitate smooth flow of international traffic and hence expansion of international trade.

##### 8.1.1.2 The Issues

8.1.1.2.1 The geographical position of the country gives roads and road transport an important role in the provision of international trade. The trunk roads, which handle most of the international traffic, constitute about 10% of the total country road network. This network supports the existing transit routes as well as ensuring access to ports of entry to neighbouring states and the coastal ports.

8.1.1.2.2 Road transport contributes about 20% of the regional cross border trade and its relative importance is also believed to be increasing. Furthermore, road transport is very important for the region as it contributes up to 40% of the final consumer goods costs in some countries without direct access to the sea.

8.1.1.2.3 Despite its recognition in the regional trade, road transport infrastructure has been extensively exposed to trade barriers. Among them are those related to poor maintenance and inadequate development to suit the ever-increasing need for transport services. Therefore, infrastructure should be developed and maintained to facilitate an unimpeded flow of goods and passengers between and across their respective territories.

8.1.1.2.4 The following policy direction will be pursued:-

- i) promote acceptable level of safety, security, discipline and mobility on the roads but at the same time protect the environment and road infrastructure.
- ii) enhance and enforce regional and international legislation including safety measures in respect of among others vehicles standard, axle load limits, drivers and traffic operations.
- iii) enhance the capacity building for infrastructure provision and

management.

- iv) promote public investment with either partnership with private sector or as PSO for non-commercial regional infrastructure.

## 8.1.2 Infrastructure for International Railway Traffic

### 8.1.2.1 Objective

- 8.1.2.1.1 To integrate the rail network for efficient movement of transit traffic.

### 8.1.2.2 The Issues

- 8.1.2.2.1 The two railways, the Tanzania Railways Corporation (TRC) and the Tanzania-Zambia Railway Authority (TAZARA) form the major railway systems, which are very critical for the international haulage of passengers and goods.

- 8.1.2.2.2 The TRC system which runs through the central line from Dar es Salaam to Kigoma/Mwanza is the most important international route serving the neighbouring countries of Burundi, Rwanda, Democratic Republic of Congo (DRC) and Uganda. To give more weight to this railway, Isaka railroad terminal has been declared a Dry Port to specifically handle Rwanda's traffic and at a later stage for Burundi traffic.

- 8.1.2.2.3 The TAZARA line provides an important component in the regional network linking the ports of Dar es Salaam with landlocked Zambia at New Kapiri Mposhi, Malawi and other SADC member states.

- 8.1.2.2.4 The two railways have constraints related to the poor condition of the permanent way that do not facilitate efficient train services to meet customer satisfaction.

- 8.1.2.2.5 In order to improve the rail network for efficient movement of transit traffic requires that the following policy direction be pursued:-

- i) developing an integrated regional railway network corridors to enhance cooperation amongst railways in the SADC and East African regions;
- ii) integrating the railway infrastructure to capture more transit traffic by strengthening interchange and interface facilities;
- iii) strengthening the permanent ways to cater for heavy transit traffic.

- 8.1.3 Maritime and Inland Water Infrastructure for International Traffic
- 8.1.3.1 Objective
- 8.1.3.1 Improve seaports infrastructure e.g. jetty, terminals and berths to cater for large international vessels of up to 250,000 DWT.
- 8.1.3.2 The Issues
- 8.1.3.2.1 Maritime transport in this context includes deep sea, coastal and inland waterways.
- 8.1.3.2.2 Four major sea ports of Dar es Salaam, Mtwara, Tanga and Zanzibar are used for international traffic. As a major potential handling international traffic Dar es Salaam port handles more than half of the transit traffic.
- 8.1.3.2.3 The maritime industry in the country is at infancy stage and is largely controlled by the private sector both for sea and inland waterway with the exception of THA and Marine Services Company Ltd. The industry has vast underlying potential particularly with significant growth in International trade. The maritime transport is to provide vital linkage in regional trade and is highly dependent on the rail, road and pipeline transport modes. Port facilities and navigation aids need improvement, particularly for inland water transport where smooth flow of traffic from landlocked countries is constrained. Moreover, adherence to meteorological forecasts, advisory and warnings is of critical importance to maritime transport safety.
- 8.1.3.2.4 The Dar es Salaam port is being supported by the hinterland with extensive rail, road, pipeline and air transport corridors, which are over one thousand-km long to the north, west and south of the country. These corridors will have to be upgraded or developed and maintained. The interface points will have to be developed and maintained to enable the port to take advantage of the strategic position to become a regional hub to serve east, central and Southern Africa.
- 8.1.3.2.5 Participation of Tanzania in international shipping has depended on foreign companies, which are being guided by both national and international regulatory requirements. The 1967 Merchant Shipping Act is supplemented by International conventions, treaties and codes of conduct in order to ensure that the national rules and regulations conform to international standards on practices, procedures and safety as per International Maritime Organisation's regulation.
- 8.1.3.2.6 In order to improve port capacity, the policy directions to be followed include:-

- i) ensure the provision of accessible, viable and productive landside infrastructure.
- ii) continue with economic and institutional reform to improve port operations in view of maximising efficiency in freight and passenger movement.
- iii) continue to involve private sector in the provision of adequate infrastructure.
- iv) incorporate meteorological information in maritime transport planning.
- v) development of basic infrastructure such that the government continue to play the leading role.

#### 8.1.4 International Air Traffic Infrastructure

##### 8.1.4.1 Objective

- 8.1.4.1.1 To improve the standard of air transport infrastructure to foster the international trade and tourism.

##### 8.1.4.2 The Issues

- 8.1.4.2.1 Regarding international air transport infrastructure, Tanzania has three airports serving the international traffic. These are Dar es Salaam, Kilimanjaro and Zanzibar airports. Tanzania Civil Aviation Authority (TCAA) regulates however international air transport infrastructure development and management in Tanzania. Safety and operating standards as laid down in International Conventions i.e. Chicago convention of 1944 and Warsaw convention of 1929 which are monitored by International bodies such as International Civil Aviation Organisation (ICAO), World Meteorological Organisation (WMO), African Civil Aviation Commission (AFCAC), etc will be the basis for the regulation of air transport infrastructure development and management in the country.
- 8.1.4.2.2 Air transport services are provided by inadequately maintained airport runways, aprons and terminal buildings, poor state of navigational aids, fire fighting equipment and cargo terminal, frequent power cuts poor safety measures and inadequate storage facilities.
- 8.1.4.2.3 In order to have air transport infrastructure that is having safe operating standards as laid down by international standards and which will adequately facilitate international trade and tourism, the following policy directions will be implemented:-
- i) improve airport facilities to ICAO, safe, secure standards.
  - ii) to adequately improve airport runways, aprons and terminal

buildings to a standard that will facilitate adequate air transport services.

- iii) improve Dar es Salaam Airport through both public and private sector partnership to enable it plays its role as a leading gateway and international airport in Tanzania. However, the government will play the leading role in the infrastructure development.

#### 8.1.5 International Pipeline Infrastructure

##### 8.1.5.1 Objective

- 8.1.5.1.1 To develop the mode as an economic alternative for the transportation of fluids and gases for International traffic.

##### 8.1.5.2 The Issues

- 8.1.5.2.1 Pipeline is the cheapest mode for bulk long distance transportation of fluids. This mode is not given due cognisance relative to its potential demand. The only pipeline that serves international transport purpose is the TAZAMA, used for transportation of oil products to Zambia.

- 8.1.5.2.2 For bulk long distance transportation of fluids, the policy direction is to encourage private investment in pipeline infrastructure development.

#### 8.2 International Transport Services

##### 8.2.1 International Road Transport Services

###### 8.2.1.1 Objective

- 8.2.1.1.1 To ensure that road transport services are effectively provided so as to facilitate smooth flow of traffic and expansion of international trade.

###### 8.2.1.2 The Issues

- 8.2.1.2.1 Road transport services is the dominant mode transport in carrying international goods traffic. It also provides services for passenger transport at international level supported by Bilateral Road Transport Agreement, a mechanism put forward to enhance international travel between partner states.

- 8.2.1.3.2 Despite its recognition in the regional trade, road transport services has been extensively exposed to trade barriers. Among them are:-

- i) the non-tariff barriers related to border post management. These includes:-

- custom, and
  - immigration administration.
- ii) un-harmonised licenses among the regional countries,
  - iii) poor road markings and signs.
  - iv) variation of documentation at different border posts.

These barriers together with others constrain like vehicle inspection procedures and corruption and lack or inadequate communication facilities leads to border delays. Therefore, road services and their management should be improved to facilitate an unimpeded flow of goods and passengers between and across their respective territories.

8.2.1.4 The following policy directions will be pursued:-

- i) harmonise road transport policy with neighbouring countries to facilitate equal treatment, non discrimination, reciprocity and fair competition.
- ii) promote regional integration by harmonising highway legislation, signs and signals, customs procedures and transit arrangement.
- iii) promote market access in respect of International transport in accordance to the agreed East African and the SADC protocols on transport and Bilateral Road Transport Agreements which are currently being formulated and applied.
- iv) Coordinate the activities of the authorities which impact on road transport especially at border-posts and inland clearing depots to facilitate the free flow of transit traffic.

8.2.2 International Railways Services

8.2.2.1 Objective

8.2.2.1 To facilitate improved rail services for efficient transit traffic.

8.2.2.2 The Issues

8.2.2.2.1 Railways infrastructure serving international traffic is strategically located to serve apart from local traffic, international transit traffic to and from neighbouring landlocked countries.

8.2.2.2.2 Generally, it is estimated that about one third (1/3) of the goods handled in the country is transit traffic, the bulk of it being handled by TAZARA and TRC as these two railways are important arteries connecting the

neighbouring countries. As transporters of bulk long distance cargo, the two railway networks need to have sufficient and efficient facilities to cater for transit cargo. The systems are connected to each other at Kidatu through an interchange.

- 8.2.2.2.3 The rail transport services between Tanzania and the neighbouring countries need to be strengthened to enable the expansion of trade partnership. In the same spirit, Tanzania will thus strive to facilitate the provision of a seamless, efficient, predictable, cost effective, safe and environmentally friendly railway services which will be responsive to market needs and provide access to transit traffic, in the most competitive manner in the SADC, East African as well as other Central African markets.
- 8.2.2.2.4 The two railways have constraints in performance particularly those related to quality of service which does not meet customer satisfaction due to inadequate wagons and standards, long terminal detentions and wagon turn round, safety of goods on route, etc.
- 8.2.2.2.5 Improvement of rail services for efficient movement of transit traffic requires the following policy direction to be pursued:-
- i) harmonise railway policies with those of SADC and East African countries;
  - ii) increase private sector participation in railway investment;
  - iii) enhance public investment in either partnership with private sector or as PSO for non-commercial rail network;
  - iv) enhance supportive regulatory and investor friendly legislation;
  - v) enhance the safety of railway operations and develop common standards of customer services.

### 8.2.3 International Maritime Services

#### 8.2.3.1 Objective

8.2.3.1 Improve sea and inland ports services to effectively cater for international transit traffic.

#### 8.2.3.2 The Issues

8.2.3.2.1 Transit sea traffic is currently undertaken through Dar es Salaam, Tanga and Mtwara ports while inland shipping for international traffic is currently undertaken in lakes Victoria, Tanganyika and Nyasa. Given their strategic position, seaports as well as inland water ports have a central role in the context of international linkage and in the sphere of the multi modal

transport network in East Africa.

8.2.3.2.2 While container handling has improved due to installation of new handling facilities, transit traffic has decreased mainly due to bureaucracy and un-harmonised paper work.

8.2.3.2.3 In order to improve port services, the policy direction to be followed is to:-

- i) develop and implement harmonised regional and international policies in respect of high seas and inland water transport by reviewing the existing rules and regulation.
- iii) promote the integrated transport system through the involvement of private resources.
- iv) continue with economic and institutional reform to improve port operations in view of maximising efficiency in freight and passenger movement.
- vi) continue to involve private sector in the provision of adequate services.
- vii) government to play a key role in ports infrastructure development.

#### 8.2.4 International Air Transport Services

##### 8.2.4.1 Objective

8.2.4.1 To improve the standard of air transport services to foster the international trade and tourism.

##### 8.2.4.2 The Issues

8.2.4.2.1 International scheduled services are governed by Bilateral Air Service Agreements (BASAs) concluded between Tanzania and other states. The Tanzania Civil Aviation Authority (TCAA) licenses non-scheduled operations for the carriage of passengers and cargo. Services at Intercontinental level are provided mainly by foreign airlines while ATC provides regional services. With the envisaged privatisation of the airline, the services should be expected to extend to inter-continental destinations.

8.2.4.2.2 The NTP recognises the need for open sky policy. The policy makes it possible or airlines to offer the travelling service options at competitive prices that are not discriminatory and do not represent abuse of a dominant position, and wishing to encourage individual airlines to develop and implement innovative practices.

8.2.4.2.3 In order to have standard air transport services that fosters the international

trade and tourism, the following policy direction will be pursued:-

- i) Involvement of the private sector in the provision of air transport services in view of promoting international trade.
- ii) Promote competitive rates and tariffs.
- iii) Encourage Bilateral and Multilateral Air Service Agreements.

#### **8.2.5 International Pipeline Services**

##### **8.2.5.1 Objective**

8.2.5.1.1 To improve the services of the mode as an economic alternative for transporting international fluids.

##### **8.2.5.2 The Issues**

8.2.5.2.1 Currently the only pipeline that serves international transportation of fluids is the TAZAMA pipeline. Although it is the cheapest mode, its viability is constrained by leakages.

8.2.5.2.2 In order to effectively use the potentially economic pipeline mode in transportation of bulky fluids, the policy direction is to encourage private sector participation in sustainable international pipeline service provision.

## 9.0 SPECIAL TRANSPORT POLICY DIRECTIONS

### 9.1 Special Transport Concept

9.1.1 Special transport is being advocated by this policy as transport system, which is specifically developed to provide for the exploitation of potentials in isolated areas, which are not adequately linked, to the existing transport network. It also applies to development of transport infrastructure and operations to cater for emergence and national security.

#### 9.1.2 Objective

9.1.2.1 To improve and expand the transport network to link areas with tourist, mining and manufacturing potentials in view of exploiting them.

#### 9.1.2 The Issues

9.1.2.2 Tanzania is endowed with an extensive variety of yet unexploited potentials ranging from minerals, tourist attraction, power, and natural resources including forestry and fishery. These need to be harnessed and utilized to complement the contribution of agriculture to GDP, which is about 54% and employing 80% of the total population. The importance of exploiting these potentials is growing now than before due to the fact that the agricultural sector is subjected to high risks and uncertainties following unreliability of rainfall and non-availability of agricultural inputs/ implements. There is therefore a need to diversify economic activities to give hand to agricultural sector in earning foreign exchange.

9.1.2.3 The tourist attractions, which are located in remote areas and are hardly accessible, need to be provided with a facilitative transport infrastructure and services to enable exploitation. Various potential tourist activities can be found along coastline and in the hinterlands ranging from game-viewing and photographic safaris to game hunting, beach holidays, mountain climbing, filmmaking and sightseeing. Air transport and for this case air charters and commuters airlines as the most convenient in serving the tourist industry are insufficient and need to be integrated with relatively reliable road, water and rail transport.

9.1.2.4 Unlike an imported fuel, power is unevenly distributed in the country. Coal reserves amounting to 1,200 million tonnes can be used as a substitute to imported fuel in industries. The coordinated development programmes between the Ministries responsible for power and Transport is necessary. Pipeline is the most efficient mode in this respect.

- 9.1.5 Tanzania has a diverse mineral resource base and high potential. The development of the mining sector, particularly with regard to exploitation of heavy industrial minerals including iron, soda ash and phosphates depend on cost-effective transport system to haul raw material and finished products. Road, pipeline and rail transport infrastructure and operation need to be developed to link the areas with such potentials and air transport for the areas with precious minerals including gold, diamond and tanzanite.
- 9.1.6 The following policy direction will be pursued:-
- i) ensuring that both local and foreign investors and operators are involved in the development of special transport infrastructure and operations coupled with environmental protection;
  - ii) provision of PSO whenever necessary;
  - iii) review of legislations to take into account need for the operationalisation of special transport services.

## GLOSSARY

### A. Road transport

Table 1 Definitions of selected terms and time series used in the tables on road transport

**Selected term and time series Definition land and water area** Total land area comprises agricultural land, forest and other wooded land, built-up and related land (excluding scattered farm buildings), wet open land, dry open land with special vegetation cover and open land without, or with insignificant, vegetation cover. Total land area should be used as a basis for other calculations such as density of population, etc. Water area comprises inland waters and tidal waters. Land and water area should cover the total area of a country. Total surface area comprises total land area plus water area.

**Road** Line of communication (travelled way) using a stabilized base other than rails or air strips open to public traffic, primarily for the use of road motor vehicles running on their own wheels. Included are bridges, tunnels, supporting structures, junctions, crossings and interchanges. Toll roads are also included. Excluded are dedicated cycle paths.

**Road network** All roads in a given area.

**Motorway** Road specially designed and built for motor traffic, which does not serve properties bordering on it, and which:

- (a) is provided, except at special points or temporarily, with separate carriageways for the two directions of traffic, separated from each other, either by a dividing strip not intended for traffic, or exceptionally by other means;
- (b) does not cross at level with any road, railway or tramway track, or footpath;
- (c) is specially sign-posted as a motorway and is reserved for specific categories of road motor vehicles.

Entry and exit lanes of motorways are included irrespectively of the location of the signposts.

Urban motorways are also included.

**Road vehicle** A vehicle running on wheels and intended for use on roads.

**Stock of road vehicles** Number of road vehicles registered at a given date in a country and licensed to use roads open to public traffic. This includes road vehicles exempted from annual taxes or license fees; it also includes imported second-hand vehicles and other road vehicles according to national practices. The statistics should exclude military vehicles.

**Motor Vehicles** Motor cars and buses, passenger motor vehicles for unusual terrain such as snowmobiles and golf carts, motor vehicles for goods transport, special purpose trucks such as fire engines and mobile clinics. (United Nations 1994 groups 781-783)

**Road motor vehicle** A road vehicle fitted with an engine whence it derives its sole means of propulsion, which is normally used for carrying persons or goods or for drawing, on the road, vehicles used for the carriage of persons or goods. The statistics exclude motor vehicles running on rails.

**Passenger road vehicle** A road vehicle designed, exclusively or primarily, to carry one or more persons. Vehicles designed for the transport of both passengers and goods should be classified either among the passenger road vehicles or among the goods road vehicles, depending on their primary purpose, as determined either by their technical characteristics or by their category for tax purposes.

**Passenger road motor vehicle** A road motor vehicle, exclusively designed or primarily, to carry one or more persons. Vehicles designed for the transport of both passengers and goods should be classified either among the passenger road vehicles or among the goods road vehicles, depending on their primary purpose, as determined either by their technical characteristics or by their category for tax purposes.

**Moped** Two- or three-wheeled road vehicle which is fitted with an engine having a cylinder capacity of less than 50cc (3.05 cu.in) and a maximum authorized design speed in accordance with national regulations.

**Motorcycle** Two-wheeled road motor vehicle with or without side-car, including motor scooter, or three wheeled road motor vehicle not exceeding 400 kg (900 lb) unladen weight. All such vehicles with a cylinder capacity of 50 cc or over are included, as are those under 50 cc which do not meet the definition of moped. Annex 1: Definitions 202

#### Selected term and time series Definition

**Passenger car** Road motor vehicle, other than a motor cycle, intended for the carriage of passengers and designed to seat no more than nine persons (including the driver). The term "passenger car" therefore covers micro cars (need no permit to be driven),

taxis and hired passenger cars, provided that they have fewer than ten seats. This category may also include pick-ups.

**Bus (or motor coach)** Passenger road motor vehicle designed to seat more than nine persons (including the driver). Statistics also include mini-buses designed to seat more than 9 persons (including the driver).

**Goods road vehicle** Road vehicle designed, exclusively or primarily, to carry goods. Vehicles designed for the transport of both passengers and goods should be classified either among the passenger road vehicles or among the goods road vehicles, depending on their primary purpose, as determined either by their technical characteristics or by their category for tax purposes.

**trucks** CPC Vers. 1: Road tractors for semi-trailers (subclass 49111) and motor vehicles n.e.c. for the transport of goods (subclass 49114). [Reference: United Nations (1998a). Central Product Classification (CPC). Version 1.0. Series M, No. 77, Version. 1.0 (United Nations publication, Sales No. E.98.XVII.5).]

**Special purpose road vehicle** Road vehicle designed for purposes other than the carriage of passengers or goods. This category includes e.g. fire brigade vehicles, ambulances, mobile cranes, self-propelled rollers, bulldozers with metallic wheels or track, vehicles for recording film, radio and TV programmes, mobile library vehicles, towing vehicles for vehicles in need of repair, and other road vehicles not specified elsewhere.

**Road traffic** Any movement of a road vehicle on a given network. When a road vehicle is being carried on another vehicle, only the movement of the carrying vehicle (active mode) is considered.

**Vehicle -kilometre** Unit of measurement representing the movement of a road motor vehicle over one kilometre. The distance to be considered is the distance actually run. It includes movements of empty road motor vehicles. Units made up of a tractor and a semi-trailer or a lorry and a trailer are counted as one vehicle.

**Road transport** Any movements of goods and/or passengers using a road vehicle on a given road network when a road vehicle is being carried on another vehicle, only the movement of the carrying vehicle (active mode) is considered.

**International road transport** Road transport between two places (a place of loading/embankments and a place of unloading/diseembarkment) in two different countries. It may involve transit through one or more additional country or countries.

**Road passenger** Any person who makes a journey by a road vehicle. Drivers of passenger cars, excluding taxi drivers, are counted as passengers. Service staff assigned to buses, motor coaches, trolleybuses, trams and goods road vehicles are not included as passengers.

**Road passenger-kilometre** Unit of measure representing the transport of one passenger by road over one kilometre. The distance to be taken into consideration is the distance actually travelled by the passenger.

**Tonne-kilometre by road** Unit of measure of goods transport which represents the transport of one tonne by road over one kilometre. The distance to be taken into consideration is the distance actually run.

Table 1 (continued) B. Railway Transport

Table 2 Definitions of selected terms and time series used in the tables on railway transport

Selected term and time series Definition

**Railway** Line of communication made up by rail exclusively for the use of railway vehicles

**Railway network** All railways in a given area. This does not include stretches of road or water even if rolling stock should be conveyed over such routes, e.g. by wagon-carrying trailers or ferries. Lines solely used for tourist purposes during the season are excluded as are railways constructed solely to serve mines, forests or other industrial or agricultural undertakings and which are not open to public traffic.

**Electrified track** provided with an overhead trolley wire or with conductor rail to permit electric traction.

**Electrified line** Line with one or more electrified running tracks. Sections of lines adjacent to stations that are electrified only to permit shunting and not electrified as far as the next stations are to be counted as non-electrified lines.

**railways traffic** Any movement of a railway vehicle on lines operated. When a railway vehicle is being carried on another vehicle only the movement of the carrying vehicle (active mode) is considered.

**Locomotive** Railway vehicle equipped with prime mover and motor or with motor only used for hauling railway vehicles. Only vehicles with a power of 110 kW and above at the draw hook are classed as locomotives; vehicles with less power being described as "light rail motor tractors" are excluded. Light rail motor tractor is low power tractive unit used for shunting or for work trains and short-distance or low-tonnage terminal services. The special non-passenger tractive units for high speed trains are included, even when these vehicles are part of an indivisible set. Statistical Abstract of Transport in Asia and the Pacific, 2002 203

## Selected term and time series Definition

**Wagon** Railway vehicle normally intended for the transport of goods. Railcars and railcar trailers fitted only for the conveyance of goods are included.

**Passenger railway vehicle** Railway vehicle for the conveyance of passengers, even if it comprises one or more compartments or spaces specially reserved for luggage, parcels, mail, etc. These vehicles include special vehicles such as sleeping cars, saloon cars, dining cars and ambulance cars. Each separate vehicle of an indivisible set for the conveyance of passengers is counted as a passenger railway vehicle.

**Coach** Passenger railway vehicle other than a railcar or a railcar trailer.

**Railcar** Railway vehicle with motor constructed for the conveyance of passengers or goods by rail. The definition of the various categories of locomotives (electric, diesel) apply, *utates mutandis*, to railcars. In motor vehicle statistics, each railcar in an indivisible set is counted separately; in statistics of passenger vehicles and goods vehicles, each body fitted to carry passengers or goods is counted as a unit.

**Railcar trailer** Passenger railway vehicle coupled to one or more railcars.

**Rail transport** Any movement of goods and/or passengers using a railway vehicle on a given railway network. When a railway vehicle is being carried on another rail vehicle only the movement of the carrying vehicle (active mode) is being considered.

**International rail transport** Rail transport between two places (a place of loading and a place of unloading) in two different countries. It may involve transit through one or more additional countries.

**Rail passenger** Any person, excluding members of train crew, who makes a journey by railway vehicle. Passenger making a journey by railway operated ferry or bus services are excluded.

**Rail passenger-kilometre** Unit of measure representing the transport of one rail passenger by rail over a distance of one kilometre. The distance to be taken into consideration should be the distance actually run by the passenger on the concerned network. If it is not available, then the distance charged or estimated should be taken into account.

**Tonne-kilometre by rail** Unit of measure of goods transport which represents the transport of one tonne of goods by rail over a distance of one kilometre. The distance to be covered is the distance actually run on the considered network.

**Railway employment** Average number of persons working during the given period in a railway enterprise, as well as persons working outside the enterprise but who belong

to it and are directly paid by it. Statistics should include the staff employed for performing all principal and ancillary activities of the enterprise (railway operation, renewal, new construction, road and shipping services, electricity generation, hotels and restaurants etc.).

Table 2 (continued) Water Transport

Table 3 Definitions of selected terms and time series used in the tables on water transport

Selected term and time series Definition

**Waterway** River, canal, lake or other stretch of water which by natural or man-made features is suitable for navigation. Waterways of a maritime character (waterways designated by the reporting country as suitable for navigation primarily by sea-going ships) are included. Waterways also include river estuaries; the boundary being that point nearest the sea where the width of the river is both less than 3 km at low water and less than 5 km at high water.

**Navigable inland waterway** A stretch of water, not part of the sea, over which vessels of a carrying capacity of not less than 50 tonnes can navigate when normally loaded. This term covers both navigable rivers and lakes and navigable canals.

**Inland waterways traffic** Any movement of an IWT vessel on a given network. When a vessel is being carried on another vehicle, only the movement of the carrying vehicle (active mode) is taken into account.

**Inland waterways transport (IWT)** Any movement of goods and/or passengers using an IWT vessel on a given inland waterways network.

**Inland waterways passenger** Any person who makes a journey on board of an IWT vessel. Service staff assigned to IWT vessels are not regarded as passengers.

**Tonne-kilometre by inland waterways** Unit of measure of goods transport which represents the transport of one tonne by inland waterways over one kilometre.

**Port** Place having facilities for merchant ships to moor and to load or discharge goods or passengers to or from seagoing vessels.

**Seagoing vessel** Floating marine structure with one or more surface displacement hulls. Hydrofoil, air cushion vehicles (hovercraft) and barges are included. Vessels under repair are included. Vessels suitable for inland navigation but which are authorised to navigate at seas (mixed seagoing and inland waterways vessels) are excluded.

Annex 1: Definitions 204

**Selected term and time series Definition**

**Merchant ship** Ship designed for the carriage of goods, transport of passengers or specially fitted out for a specific duty. Naval ships and ships used by public administration and public services are excluded. Merchant ships are divided into cargo carrying ships and ships of miscellaneous activities. Ships of miscellaneous activities include fish catching and processing ships, tugs, dredges, research/survey ships, and ships designed for offshore production and support.

**Merchant fleet** Number of merchant ships registered at a given date in a country and authorised to navigate at sea. Changes in the fleet refer to changes in total or within a ship type, in the seagoing fleet of the reporting country, resulting from new construction, modification in type or capacity, transfers to or from a different flag state, scrapping, casualties, or transfer to or from the fluvial register. Vessels under repair are included.

**Flag state** Country of registry of a sea going vessel. A sea going vessel is subject to the maritime regulations in respect of manning scales, safety standards and consular representation abroad of its country of registration.

**Tanker** Ship designed with a single deck and an arrangement of integral or independent tanks specifically for the bulk carriage of liquid cargo.

**Bulk carrier** Ship designed with a single deck and holds for the bulk carriage of loose dry cargo of a homogenous nature.

**Ore carrier** Bulk carrier strengthened for the carriage of ore cargoes.

**Container ship (fully cellular - fc)** Ship fitted throughout with fixed or portable cell guides for the carriage of containers.

**Passenger ship** Ship designed specifically to carry more than 12 fare-paying passengers whether berthed or unberthed. A ship designed with one or more decks specifically for the carriage of passengers, and where there is either no cabin accommodation for the passengers (un-berthed) or not all of the passengers are accommodated in cabins where cabins are provided, is sometimes referred to as a "ferry". Ro-Ro passenger ships are excluded.

**Sea traffic** Any movement of a sea going vessel at sea. One port traffic (movements of sea going vessels to offshore installations, or for dumping at sea, or traffic from the sea

bed to ports) is included. Fluvio-maritime movements of sea going vessels are included. Movements on inland waterways between sea ports and inland waterway ports are excluded and are included in inland waterway traffic. Movements of sea going vessels internally, between different basins or docks of the same port, are excluded.

**Sea transport** Any movement of goods and/or passengers using seagoing vessels on voyages which are undertaken wholly or partly at sea. One port transport (movements of goods shipped to offshore installations, or for dumping at sea, or reclaimed from the sea bed and unloaded in ports) is included. Bunkers and stores supplied to vessels are excluded. Fluvio-maritime movements of goods by seagoing vessels are included. Movements of goods on inland waterways vessels between sea ports and inland waterway ports are excluded. (They are included in inland waterway transport). Movements of goods carried internally between different basins or docks of the same port are excluded.

**International sea transport** Sea transport between two ports (a port of loading/embarkment and a port of unloading/disembarkment) located in two different countries.

**maritime transport, international** The weight of goods (including packing) and livestock which are either loaded into national or foreign sea-going vessels for unloading in another country, or unloaded from national or foreign sea-going vessels after having been loaded in another country. Mail, bullion, specie, passengers' baggage, bunkers, ships' stores, ballast, catch when carried in the original fishing vessel, ships and other floating appliances when derived as goods without being loaded on other ships are excluded. Stores for administrative or military purposes of government are excluded when carried in Government vessels or without revenue in merchant vessels. Goods unloaded into or loaded from bonded warehouses are included. Goods "in transit" are foreign goods which arrive in the country in question and subsequently leave for shipment abroad. These goods are normally included unless they are trans-shipped directly from an importing to an exporting vessel.

**TEU (Twenty-foot Equivalent Unit)** Standard unit for counting containers of various capacities and for describing the capacities of container ships or terminals.

Table 3 (continued): Air Transport

Table 4 Definitions of selected terms and time series used in the tables on air

transport.

Selected term and time series Definition

**Civil Aviation Traffic** Traffic for which remuneration is received, carried on flights performed according to a published timetable and by extra flights occasioned by overflow traffic from scheduled flights. [Reference: International Civil Aviation Organization Yearbook (ICAO)(Montreal, annual). ] Statistical Abstract of Transport in Asia and the Pacific, 2002 205

B. Passenger Traffic, Domestic Freight and International Trade

Table 5 Definitions of selected terms and time series used in the tables on traffic, domestic freight and international trade

Selected term and time series Definition

**Goods** Goods are physical objects for which a demand exists over which ownership rights can be established and whose ownership can be transferred from one institutional unit to another by engaging in transactions on markets. They are in demand because they may be used to satisfy the needs or wants of households or the community or used to produce other goods or services. The production and exchange of goods are quite separate activities. Some goods may never be exchanged while others may be bought and sold numerous times. The separation of the production of a good from its subsequent sale or resale is an economically significant characteristic of a good that is not shared by a service. CPC Vers. 1: Goods comprise division 0, agriculture, forestry and fishery products; 1, ores and minerals; electricity, gas and water; 2, food products, beverages and tobacco; textiles, apparel and leather products; 3, other transportable goods, except metal products, machinery and equipment; 4, metal products, machinery and equipment.

**Services** Services are not separate entities over which ownership rights can be established. They cannot be traded separately from their production. Services are heterogeneous outputs produced to order and typically consist of changes in the conditions of the consuming units realized by the activities of producers at the demand of the consumers. By the time their production is completed they must have been provided to the consumers. The production of services must be confined to activities that are capable of being carried out by one unit for the benefit of another. Otherwise, service industries could not develop and there could be no markets for services. It is also possible for a unit to produce a service for its own consumption provided that the type of activity is such that it could have been carried out by another unit.

Exports And Exports Value Of Goods (Merchandise)

Goods leaving the statistical territory of a country. In the general trade system, the

definition of the statistical territory of a country coincides with its economic territory. In the special trade system, the definition of the statistical territory comprises only a particular part of the economic territory, mainly that part which coincides with the free circulation area for goods. The free circulation area is a part of the economic territory of a country within which goods may be disposed of without Customs restrictions.

#### **Imports And Imports Value Of Goods (Merchandise)**

Goods which add to the stock of material resources of a country by entering its economic territory. Goods simply being transported through a country (goods in transit) or temporarily admitted (except for goods for inward processing) do not add to the stock of material resources of a country and are not included in the international merchandise trade statistics. In many cases, a country's economic territory largely coincides with its customs territory, which is the territory in which the customs law of a country applies in full. Countries can choose f.o.b.-type or c.i.f.-type values. FOB-type values include the transaction value of the goods and the value of services performed to deliver goods to the border of the exporting country. CIF-type values include the transaction value of the goods, the value of services performed to deliver goods to the border of the exporting country and the value of the services performed to deliver the goods from the border of the exporting country to the border of the importing country. It is recommended that the statistical value of imported goods be c.i.f.-type value.

**Exports Of Goods, Services (SNA)** Sales, barter, or gifts or grants of goods and services from resident to non-residents. However, where exports of goods are valued f.o.b., the costs of transportation and insurance up to the border of the exporting country are included in exports of goods. Other transactions involving a mixture of goods and services, such as expenditures by foreign travellers in the domestic market, may all have to be recorded under services in the rest of the world account.

#### **Annex 1: Definitions 206**

##### **Selected term and time series Definition**

**Imports Of Goods, Services (SNA)** Purchases, barter, or receipts of gifts or grants, of goods and services by resident from non-residents. Transactions involving a mixture of goods and services, such as expenditures by foreign travellers in the domestic market, may all have to be recorded under services in the rest of the world account.

**Merchandise Trade** Goods which add or subtract from the stock of material resources of a country by entering (imports) or leaving (exports) its economic territory. Goods simply being transported through a country (goods in transit) or temporarily admitted or withdrawn (except for goods for inward or outward processing) do not add to or

subtract from the stock of material resources of a country and are not included in the international merchandise trade statistics. In many cases, a country's economic territory largely coincides with its customs territory, which is the territory in which the customs law of a country applies in full

**F.O.B. (FREE ON BOARD)** The seller's obligation to deliver is fulfilled when the goods have passed over the ship's rail at the named port of shipment. This means that the buyer has to bear all costs and risks of loss of or damage to the goods from that point. This term can only be used for sea or inland waterway transport.

**C.I.F. (Cost, Insurance, Freight)** The seller must pay the costs and freight necessary to bring the goods to the named port of destination but the risk of loss of or damage to the goods, as well as any additional costs due to events occurring after the time the goods have been delivered on board the vessel, is transferred from the seller to the buyer when the goods pass the ship's rail in the port of shipment. In addition, the seller has to procure marine insurance against the buyer's risk of loss of or damage to the goods during the carriage. The seller contracts for insurance and pays the insurance premium. The buyer should note that under the c.i.f. term the seller is only required to obtain insurance on minimum coverage. The c.i.f. term requires the seller to clear the goods for export. This term can only be used for sea and inland waterway transport.

#### Goods Loaded and Unloaded In International Maritime Transport

The weight of all goods (including packing) and livestock which, at the ports of the country in question, were either loaded into national or foreign sea-going vessels for unloading in another country or unloaded from national or foreign sea-going vessels after having been load in another country, including goods into or from bonded warehouses.

**Re-Exports** Foreign goods exported in the same state as previously imported, from the free circulation area, premises for inward processing or industrial free zones, directly to the rest of the world and from premises for customs warehousing or commercial free zones, to the rest of the world.

Table 5 (continued) F. Transport Economics and Logistics

Table 6 Definitions of selected terms and time series used in the tables on transport economics and logistics

Selected term and time series Definition

**Value Added** The value of output less the value of intermediate consumption (gross), and less the values of both intermediate consumption and consumption of fixed capital (net).

**Value Added At Basic Prices** Output valued at basic prices less intermediate consumption valued at purchasers prices.

**Selected term and time series Definition**

**Current Prices** A fundamental principle underlying the measurement of gross value added, and hence GDP, is that output and intermediate consumption must be valued at the prices current at the time the production takes place. This implies that goods withdrawn from inventories by producers must be valued at the prices prevailing at the times the goods are withdrawn and consumption of fixed capital in the System is calculated on the basis of the estimated opportunity costs of using the assets at the time they are used, as distinct from the prices at which the assets were acquired

**Industry branches such as “transport” (ISIC 3)**

ISIC Rev.3: The criteria used in ISIC to delineate each of its four levels – Class, Group,

Division and Section (Tabulation Category) – of the classification are complex. At the Division and Group levels, substantial weight is placed on the nature of the good or service that is produced as the principal product of the activity in question. In this context, this refers to the physical composition and stage of fabrication of the item and the needs served by the item. This criterion furnishes the basis for grouping producer units according to similarities in, and links between, the raw materials consumed and the sources of demand for the items. As well, two other major criteria are considered at these levels: the uses to which the goods and services are put, and the inputs, the process and technology of production.

**Employed, Employment** “Persons in employment” comprise all persons of either sex above a specified age who, during a specified brief reference period not longer than one week, were in “paid employment” or in “self-employment” as defined below. For persons who may be classifiable in more than one category of “persons in employment” criteria need to be established for determining the order of priority for recording such persons in one or the other of the categories. “Persons in paid employment” comprise all persons in the following categories: (a) “at work”: persons who during the reference period performed some work for wages, salary or related payments, in cash or in kind; (b) “with a job but not at work”: persons who, having already worked in their present job, were absent during the reference period and continued to have a strong attachment to their job. “Persons in self-employment” comprise all persons (a) “at work”: persons who during the reference period performed some work for profit or family gain, in cash or in kind; (b) “with work but not at work”: persons who during the reference period had work to be performed at the workplace but were temporarily absent due to illness or injury, vacation, holiday or ceremonies, bad weather or other similar reasons. Employers, own account workers [other than those who were paid directly for services performed], members of producers’ co-operatives, and unpaid family workers, irrespective of the number of hours worked, should be considered in self-employment

and should be classified as “at work” or “not at work” as the case may be.

**Road – employment** Average number of persons working during the given period in a road transport enterprise (inclusive of working proprietors, partners working regularly in the enterprise and unpaid family workers), as well as persons working outside the enterprise but who belong to it and are directly paid by it.

**IWT – employment** Average number of persons working during the given period in an IWT enterprise (inclusive of working owners, partners working regularly in the enterprise and unpaid family workers), as well as persons working outside the enterprise but who belong to it and are directly paid by it.

**Sea transport - employment** Number of persons employed at 31 December in a sea transport enterprise (inclusive of working owners, partners working regularly in the enterprise and unpaid family workers), as well as persons employed outside the enterprise but who belong to it and are directly paid by it.

**Gross Domestic Product (GDP)** An aggregate measure of production equal to the sum of the gross values added of all resident institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs). The sum of the final uses of goods and services (all uses except intermediate consumption) measured in purchasers’ prices, less the value of imports of goods and services, or the sum of primary incomes distributed by resident producer units.

**Road - GDP** Gross output of the road transport enterprise less the value of its intermediate consumption. Value added of domestic production of all road transport enterprises in a country is equal to their contribution to the GDP of that country.

Table 6 (continued) Annex 1: Definitions 208

#### Selected term and time series Definition

**Household** Either a one-person household, defined as an arrangement in which one person makes provision for his or her own food or other essentials for living without combining with any other person to form part of multi-person household or a multi-person household, defined as a group of two or more persons living together who make common provision for food or other essentials for living. The persons in the group may pool their incomes and have a related or unrelated persons or a combination of persons both related and unrelated. This arrangement exemplifies the housekeeping concept. In an alternative definition used in many countries exemplifying the so-called household-dwelling concept, a household consists of all persons living together in a housing unit.

**Household Consumption Expenditure** Expenditure incurred by resident households on consumption goods or services, excluding expenditure on fixed assets in the form of dwellings or on valuables. When dwellings are occupied by owners, the imputed

value of the housing services enters into both the output and final consumption expenditure of the owners. Valuables are expensive durable consumption goods that do not deteriorate over time, are not used up in consumption or production, and are acquired primarily as stores of value. They consist mainly of works of art, precious stones and metals and jewellery fashioned out of such stones and metals.

**Private Sector** Private corporations, households and non-profit institutions serving households (NPISHs).

**Motor gasoline (petrol)** Light hydrocarbon oil for use in internal combustion engines, excluding those in aircraft. Motor gasoline is distilled between 35o C and 215oC and treated by reforming, catalytic cracking or blending with an aromatic fraction to reach a sufficiently high octane number (80 RON). Calorific value: 44.8 TJ/1 000 t.

**Gas/diesel oil (distillate fuel oil)** Oil obtained from the lowest fraction from atmospheric distillation of crude oil. Gas/diesel oil includes heavy gas oils obtained by vacuum re-distillation of the residual from atmospheric distillation. Gas/diesel oil distils between 200oC and 380oC, with less than 65 per cent in volume at 250oC, including losses, and 80 per cent or more at 350oC. The flashpoint is always above 50oC and their density is higher than 0.81. Heavy oils obtained by blending are grouped together with gas oils, provided that their kinematics viscosity does not exceed 25 cST at 40 oC. Calorific value: 43.3 TJ/1 000 t.

Table 6 (continued) G. Transport and Environment

Table 7 Definitions of selected terms and time series used in the tables on transport and environment

Selected term and time series Definition

**Carbon Dioxide Emissions** Carbon dioxide (CO<sub>2</sub>) is a colourless, odourless and non-poisonous gas formed by combustion of carbon and in the respiration of living organisms and is considered a greenhouse gas. Emissions means the release of greenhouse gases and/or their precursors into the atmosphere over a specified area and period of time.

**Joule** Unit of measurement of energy consumption:

1 terajoule = 10<sup>12</sup> J = 2.78 x 10<sup>5</sup> kWh,

1 terajoule = 23.88459 TOE.

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Selected term and time series Definition

**Carbon Dioxide Emissions** Carbon dioxide (CO<sub>2</sub>) is a colourless, odourless and non-poisonous gas formed by combustion of carbon and in the respiration of living organisms

and is considered a greenhouse gas. Emissions means the release of greenhouse gases and/or their precursors into the atmosphere over a specified area and period of time.

**Energy Use (Consumption), Commercial** Refers to “apparent” consumption of commercial energy (see energy, commercial) and is derived from the formula “production + imports - exports - bunkers +/- stock changes”. Consumption by industry and construction excludes consumption by the energy sector and all inputs into energy conversion, such as fuels used by industrial/self producers of thermal electricity. Consumption in the chemical industry includes use as fuel only. Consumption by transport includes all fuel consumed by road traffic as well as deliveries to ships engaged in transport in inland and coastal waters and aircraft engaged in domestic flights. Fuels consumed by agricultural equipment are included in agricultural consumption. Consumption by households and other consumers covers households (including free issues to employees), agriculture and all other sectors not included elsewhere. Agriculture includes hunting, forestry and fishing. Other consumers specifically include trade, communications and services, such as public lighting (26, pp.8-9). Commercial energy excludes traditional fuels — fuel wood, bagasse, charcoal, animal wastes, vegetal wastes, municipal wastes, industrial wastes.

**Energy consumption by rail transport** Final energy consumed by tractive vehicles for both traction and heating.

**Energy consumption by road transport** Final energy consumed by road motor vehicles. This includes final energy consumed by unloaded road vehicles.

Energy consumed for transport by pipeline

Final energy consumed for movement of products by oil pipeline.