EUROPEAN COMMISSION
PHARE PROGRAMME

ALBANIA – NATIONAL TRANSPORT PLAN PHASE 2 STUDY PHASE

DRAFT FINAL REPORT

EXECUTIVE SUMMARY

September 2004

This project is funded by

the European Union

A project implemented by

LOUIS BERGER S.A.

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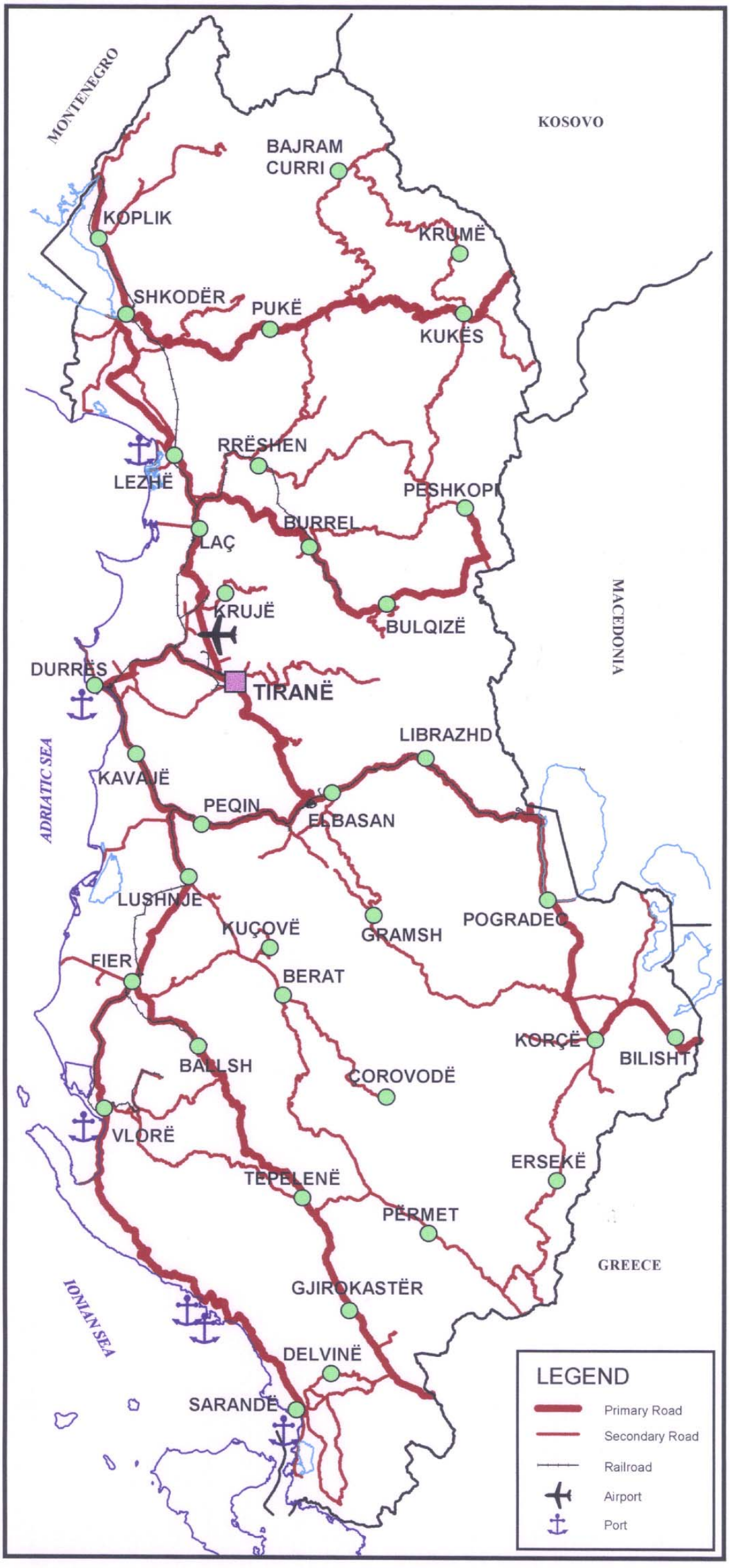


EXECUTIVE SUMMARY

1. OBJECTIVES OF THE STUDY

The terms of reference state that the overall study objective is the development of the Albanian National Transport Plan (ANTP), with emphasis on road transport. This will be done; not only to provide the Government with planning guidelines, but also to allow continued planning of the transport sector after the study has been completed. The terms of reference also specify that the study has the following specific objectives, or should deliver the following:

- Assessment of the transport sector and of each of its components ;
- Assessment of present markets and future transport demand ;
- Evaluation of the present legal and institutional framework ;
- Review of existing transport planning procedures and the role of planning authorities ;
- Formulation of strategies to overcome weaknesses identified in the above assessments ;
- Elaboration of sub-sectoral development, investment and action plans for the short term (2007), medium term (2012) and long term (2020) ;
- Establishment of systematic data collection and a database management for each of the sub-sectors ;
- Development of a strategy to promote the integration of the Albanian transport network into those of the Balkan region ;
- Elaboration of the ANTP through incorporation of each of the sub-sectoral plans ;
- Development of institutional structures for the implementation and updating of ANTP;
- Development of traffic models and databases in the Ministry of Transport and Telecommunications (MoT&T), with training of its staff in their utilisation.

2. ALBANIA GENERAL PROFILE

Albania is a small country, 28,748 $km^{2,}$ situated in south-eastern Europe at the western part of the Balkan Peninsula. It is bounded to the northwest by Montenegro, to the northeast by Kosovo, to the east by Macedonia and to the southeast and south by Greece. The country is administratively divided into 13 prefectures 36 districts, 309 communes and 65 municipalities.

According to the 2001 census, Albania's population was 3.069 million, 42% of which were urban. Albania's GDP per capita was estimated at US $1,500 at the end 2002. Socio-economic indices, such as life expectancy (74 years), infant mortality (20%), child malnutrition (8%) are comparable, or slightly above, other lower middle income countries. Literacy rate is high at 98% and far above the average for lower middle income countries. In general, educational levels are high, with more than 25% of population with upper secondary or university degrees. In 2001, more than 50% of the population was employed in agriculture, trade accounted for about 12%, while industry, construction, transport, services, education and health, each accounted for less than 10% of the employment. Albania is one of the countries with the highest unemployment rates in Europe, 22.8 % according to the 2001 census and there may be substantial hidden unemployment.

3. ECONOMIC DEVELOPMENT ANALYSIS

3.1 National Strategy for Socio-Economic Development (NSSED)

NSSED as well as the World Bank's most recent Country Assistance Strategy for Albania reached a similar conclusion on the Albanian transport infrastructure that is a major bottleneck for both private sector growth and rural development. Indeed, about 40% of the households lack access to one or more necessities, such as basic education (present literacy rate is 86 %), water or sanitation. Health services are of low quality, with access limited by

high formal and informal payments. Access to these services is critically dependant on adequacy of transport infrastructure and services.

The long-term improved objectives of the NSSED strategy at the 2015 horizon are therefore:

- At a minimum, the doubling of per capita GDP growth throughout Albania at all levels of the society ;
- Reducing by one-half the current absolute poverty rate and the elimination of extreme poverty ;
- Total enrolment (100%) in basic education, 90% in secondary education and not less than 13.5 years of education completed ;
- Reducing by more than one-half the current infant mortality rate and diarrhea diseases.

Evaluation and monitoring progress made in implementing the strategy will be undertaken within the context of the above NSSED objectives, as well as Albania's European Integration efforts. Progress made in improvement of the country's transport infrastructure will, without doubt, be a critical factor in determining whether the overall development goals were achieved or not.

3.2 Past Economic development

After two major economic crisis, one right after the collapse of the previous regime in 1990 and one in 1997 due to social unrest related to political and economic governance problems, Albania has been progressively undertaken its transition with an estimated GDP growth exceeding 7% a year between 1998 and 2000 and a low level inflation between 2% and 4%. Agriculture, stimulated by rapid privatization of land and complete price and trade liberalization, increased its productivity significantly and continued to represent the most important sector of the economy. Nevertheless, according to the IMF, economic growth seems to have decelerated and fallen to 4.7% in 2002, well below the estimated average since 1998. A number of internal and external factors contributed to this slower growth, according to the Government Progress Report for 2002: energy crises, political instability and failure to privatize AlbTelkom, the Savings Bank and the National Commercial Bank, as well as adverse weather conditions (such as the severe floods in September 2002).

3.3 Regional Developments

There has been a significant regional shift in development within the country since the political and economic transition started in 1990. A first major consequence was the outflow of emigrants that followed the opening up of the borders (in spite of stringent visa requirements of the neighbouring countries) to other European destinations and overseas. This phenomenon was moreover combined with both a drop in employment opportunities, more important than the decrease in population, and a decline of the fertility rate in many urban areas. A second consequence was the redistribution of the population inside Albania due to the new freedom of movement. Both the northern and southern districts lost a high proportion of their population (for some, the decline exceeded 50% between 1989 and 2001), while Tirana gained close to 45%, and neighbouring districts between 10% and 20%. Migration into this area has been mainly from northern parts of the country, while the migration from southern districts has been beside Tirana mainly abroad, to neighbouring Greece and to Italy. Moreover, a construction boom has swept through the central and coastal areas, particularly south of Durres and not less than a quarter of Albania's housing stock has been built in the last decade. The construction boom was not only a consequence of internal migration, but also a reaction to the chronic overcrowding in many Albanian settlements, desolate living conditions and lack of municipal services, especially in rural areas and small towns. There are two major consequences of this regional development relevant to the transport sector:

- It has led to a rapid and uncontrolled process of urbanization, which has put enormous strains on the housing market as well as on roads and other infrastructure (electricity, water, waste management etc);
- A significant reallocation of economic resources in the country. Due to changes in the economy, the per capita incomes in the rural areas have decreased since 1989 (as a result of mines and obsolete factories having been closed), while the Tirana-Durres Metropolitan area share in the total economy is estimated at about 50%.

The results of the 2001 census underline some of the main challenges that the Albanian society is facing at the national and regional levels. They include:

- The creation in the future of growth oriented employment opportunities in the industrial and service sectors, which are attractive to the educated younger segments of the population ;
- A more balanced regional development, that will stop the exodus from mountainous and rural parts of the country and reduce the attraction of the capital area ;
- The development of urban and regional planning and a functioning housing and real estate market that will overcome the issues resulting from illegal and uncontrolled development ;
- The support of gender equality in education and increased employment opportunities.

A well functioning road network and transport system, including transport services, is an essential requirement to support these regional development objectives.

3.4 Future economic development prospects

A consensus exists within the Government and Albania's external partners (EU, IMF, the World Bank) that the country's medium term development prospects indicate continued strong economic growth provided that macroeconomic stability continues and that aggressive policy reform leads to increased private sector investment. Albania has large fiscal and external imbalances which will need to be reduced to underpin sustainable growth as the volume of concessional financing and other non-debt financial flows decline. This will require strong measures to reduce structural weaknesses. Enterprise privatization and public sector reform need to continue, to address weak governance and administrative capacity. Investment climate also needs to improve to widen the narrow export base. It is estimated that the likely (medium) growth scenario would produce a 6% annual real growth in GDP in, at least, the medium term (2015), between a low scenario of about 4% a year and a high scenario of 7% annual growth rate.

Regional development conditions and prospects have been analyzed by the Consultant at the level of the 13 prefectures and 36 districts. It appears that the country may be divided into three broad areas in respect to future development prospects: the Tirana/Durres area forms a Metropolitan area with its own strong development momentum and the highest estimated growth rate; the second area (southern and northern coastal districts and Elbasan district bordering Tirana) has a strong agricultural base which could be developed further, but also a strong potential for tourism development in the coastal zones and an industrial one in the Elbasan zone, and the third area (north- and south- eastern inland areas) represents areas with poor development prospects unless concerted action is taken. It is assumed that the ANTP will be implemented as proposed and that infrastructure and development measures will be taken to support these poorer areas of the country in order to try to counter the ever-growing congestion of Tirana Metropolitan area. It is also assumed that these measures will arrest the continued decline of the population through out-migration.

4. METHODOLOGY FOR THE ANTP STUDY

The main purpose of a national transportation plan is to further the goal of national integration. A secondary purpose is to stimulate regional development by providing transport

corridors that can be used by neighbouring landlocked countries for their imports and exports. Therefore, the study concentrated primarily on long distance traffic.

The primary objective of the National Transport Plan study is to prepare an optimised 20 year programme of infrastructure investments and institutional /management changes that will enable the national transportation network to achieve its goal of national integration and development in the most efficient manner given budget constraints.

Transport being a service to the Albania population and economy, the first task was to analyse the present demand for passenger and freight transport and to project it to a 20 year horizon. The methodology used by the Consultant for this analysis is based on a disaggregated approach to demand forecasting. Each sector of the economy, characterised by a product group is analysed on its own merits and quantified separately in terms of movements between zones for the base year. These movements of goods are aggregated to obtain total base year volumes for the country. The base year volumes for each sector are then projected to future years based on forecasts from each of the sectors and then aggregated to obtain the total forecast. In the same way, passenger travels between zones for the base year are analysed on the basis of the trip produced and attracted by each zone as a function of its urban and rural population and relevant socio-economic characteristics. The cost, time or distance of the trips is also used in order to define mathematical relationships to be used to project future passenger flows.

The second task of the study consisted in assessing the present capacity and problems of the institutions and transport systems for each mode: road, rail, port and maritime transport, airport and civil aviation, inland waterways and pipelines.

The National Transport Plan is then made of a series of investments (or disinvestments) to increase (or decrease) the capacity of the transport systems, combined with measures to improve the management, and therefore the productivity, of these systems. All these actions aims at satisfying the projected demand in order for transport not to represent a constraint to Albania economic and social development.

5. TRAFFIC STUDIES

The first step of the analysis of the transport demand is to establish the existing traffic levels in the country. This information is primary data intended to form the basis for any future development and investment scenarios. The traffic data collection objectives from the terms of reference were defined as:

- Production of a robust set of road traffic data for use in the ANTP transport assessment, and by the GRD as “free standing network information”;
- Standardising survey procedures and documentation;
- Transfer of data collection and processing procedures to MoTT and GRD personnel;

The first objective was somewhat restricted by a severe lack of resources within GRD, including personnel and transport for the installation of the equipment procured under the ANTP contract, but the Consultant organized however the traffic surveys discussed below during which data were recorded in a professional manner at 13 survey stations located at the main Albania roads. Origin-Destination (O-D) surveys (manual counts and installation of Automatic Traffic Counters –ATC), classified counts, and journey time surveys were carried out by the Consultant, and collection of Axle Weight Surveys results carried out by GRD was arranged.

OD surveys were to estimate traffic flows between zones defined for the ANTP. Surveys were carried out, as shown in Map ES-2 below, at the country’s vehicle border crossing points, and at a series of points around the commercial centre of the country, the Tirana-Durres link, to establish international, national and inter-urban movement patterns and volumes. To comply with the ANTP timetable, it was necessary to commence data collection on 24 December 2003, and were carried out at intervals until 17 March 2004.

Journey time surveys are used to validate transport models, and to indicate where conditions prevent normal vehicle speeds from being achieved. The surveys were carried out over five days between 11 and 19 June 2004 on 30 sections of roads, which constitute a good sample of the pavement condition and types of terrain crossed by the Albanian roads.

The terms of reference also called for **Axle Weight Surveys** although this information is not really needed to achieve ANTP objectives. During April 2004, the GRD Traffic Section carried out such surveys at a number of locations, weighing trucks which they visually estimated to be overloaded. Although not statistically significant, the results of this survey show there is a serious overloading problem in Albania: excluding the empty trucks, about 75% of all trucks were found to be overloaded.

To assist with the analysis of general traffic movements, a number of national summary sheets have been produced, using the data collected during the surveys and complied by the Consultant. These summaries are for all sites, and include national totals of:

- Traffic volumes by class
- Average load of goods and passenger vehicles
- Truck loading, percentage of empty trucks
- O-D sample rate summary
- Comparison between MCCs (Manual counts) and ATCs (automatic traffic counts)

A total of 106,889 O-D interviews were carried out during the Consultant's ANTP surveys, they provide a solid statistical base. These interviews represent a 27% sample of all traffic which passed through the survey stations.

6. FREIGHT TRAFFIC ANALYSIS AND FORECASTS

6.1 Methodology

In terms of volumes, the following commodities are dominating freight transport in Albania :

- Foreign trade: (76% of the present traffic of the port of Durres)
  - Exports : minerals (ferro-chrome)
  - Imports : construction materials (cement and clinker, bricks and tiles, steel bars and sheets), wheat and flour, fertilisers, petroleum products,
- Domestic trade: cereals, beverages, vegetables and fruits (transported over short distances, often within the same district)
- Transit traffic: construction materials, agricultural products.

The Consultant carried out a market/transport analysis in order to identify the origin, destination and volume of the long distance flows of each of the above listed commodities.

The pattern of the freight transport in Albania, in terms of Origin-Destination of commodity flows, is then calibrated by comparing this analysis with the data collected during the traffic surveys. The freight traffic flows are then finally projected over a 20 year period, until 2023, to be used for the preparation of the National Transport Plan.

6.2 Analysis of transport flows for main commodities

Subsequently to the construction sector's boom (+ 40 % per year between 2000 and 2003), the **cement** consumption has been rapidly increasing to reach 1,584 million tons in 2003. The Consultant considers that this trend will continue for another five years, until 2008, and then will progressively slow down to grow only at a 5% annual rate until 2013 and at 2% until 2023, resulting then in a forecasted 4 million ton cement annual demand. In order to respond to this domestic demand, one million tons of cement were imported as well as 300 000 tons of clinker. Imports mainly come from Italy (44%), Greece (33%) and Turkey (22%), and arrive at the ports of Durres (62%), Shengjin (21%), Vlora (11%), and Saranda (6%). On the other

hand, a new cement plant is being constructed and is forecasted to reduce the imports from the port of Durres from 624,000 tons in 2003 to 337,000 in 2006.

Bricks and tiles production and imports have increased dramatically in recent years with the expansion of the construction industry and the privatization of the brick plants. There are a total of 22 brick plants in Albania with an annual production of 725,000 tons in 2003. The Consultant considers the growth in bricks and tiles demand will have the same pattern as the one for cement, bringing the bricks and tiles market in 2023 to 2.3 millions tons with imports limited to 428,000 tons in 2023.

Iron and steel are mainly used for residential construction and for road structure works. In 2003 total imports amounted to 341,000 tons plus a local production (Elbasan) of 96,000 tons whereas the domestic market of construction iron and steel was estimated at 235,000 tons. The balance includes scrap, some for other purposes than construction and re-exports to Kossovo estimated to reach 90,000 tons, which do not appear in the official statistics. The Consultant considers the growth in steel domestic demand will have the same pattern as the one for cement bringing the Albania domestic market for iron and steel to 1.1 million tons in 2023, and thanks to an upgraded local production, the needs for imports will be limited to 586,000 tons.

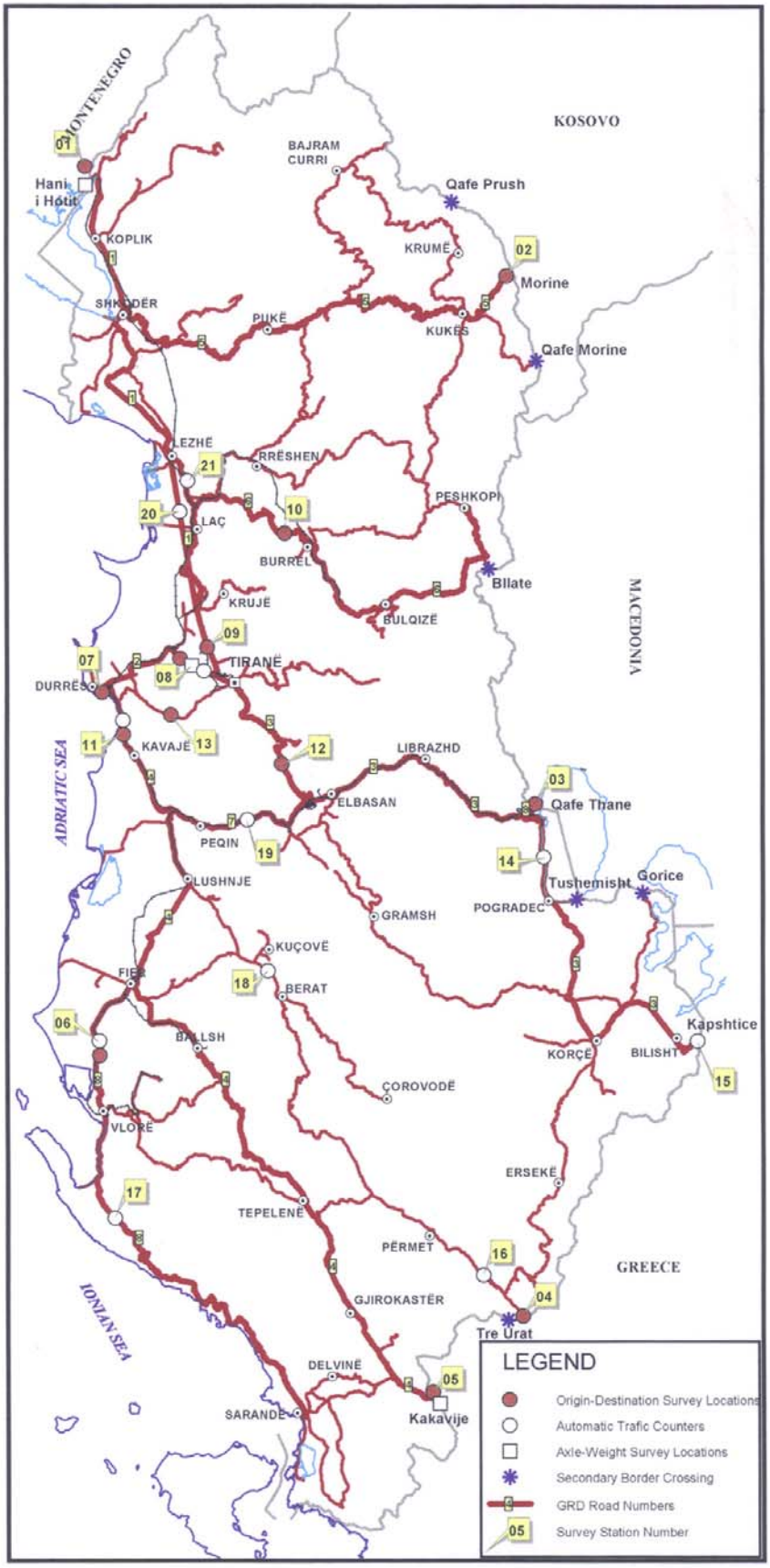
Albania has in recent years become increasingly dependent on imported **grain and flour**. Wheat is used to produce flour for human consumption which represents in 2003, 448,000 tons of which 69,000 tons are imported. Maize, mainly used to feed animals, is the second most important cereal in Albania with a production of 207,000 tons and a import volume of 31,000 tons in 2003. About 90% of grain imports come through the port of Durres, the balance come from Greece by road. About 50% of flour is imported from the port of Durres and the balance also comes from Greece by road. Finally, it is anticipated that the combination of the continuous decrease in rural population with the increase in yields, which results from better cultivation techniques, the production will more or less stabilise in the future at the present levels.

Fertilizer needs are supplied entirely by imports, which amounted to 100,000 tons in 2003. A large part of these (84,000 tons) were imported through the Durres Port, while small amounts in the range of about 5,000 tons were imported from Greece. Most of the imports of phosphates and nitrates are from Russia, Egypt and Tunisia, the rest comes from Greece, Italy and Germany. Given the low prospects for the development of agriculture in Albania, the Consultant estimated that the growth in fertiliser consumption will be limited to 2% a year. On this basis, the imports of fertilisers in 2023 would reach 150,000 tons.

The Consultant assumed that the local production of **petroleum** products will stabilise at its current level of about 300,000 tons a year (Ballsh refinery) for the next 10 years and will grow at a rate of 5 % per annum afterwards to reach 490,000 tons in 2023. Furthermore, since motorization rates in Albania, presently low, are forecasted to increase at a rate 1.1 to 1.6 times of GDP, and since the transport sector uses about one third of the energy consumed in the country, the Consultant estimated the annual energy consumption rate to be 1.2 times this of GDP. This will represent an annual growth of 8.4% in the Tirana – Durres area, the fastest growing region, and only an annual growth of 4.8 % in the poorer north-east and south east districts. These assumptions lead to an estimate total demand for petroleum products of 2.77 millions tons in 2023.

Beverages (beer, wine, soft drinks and mineral water) represent a significant market for road transport in Albania. The total consumption of manufactured beverages in Albania reached 174,000 tons in 2003, it is projected to reach 811,000 tons in 2023.

Map ES-2: Location of Survey Stations



Sugar is consumed both in Albanian households and for the production of soft drinks, jam and other fruit products. The total amount used in the country increased slightly from 65,000 tons in 1999 to 70,000 tons in 2003 (an average annual growth of 1.9%). The Consultant assumed that the present growth of the sugar consumption in Albania will continue until 2023 to reach 102,000 tons. He also assumed that the amount of re-exports to Kossovo will grow at the same rate to reach 35,000 in 2023.

Albania has very good climatic conditions for the cultivation of **vegetables** (tomatoes, cucumbers, watermelons, legumes, carrots and eggplants) and **fruits** (apples, pears, peaches, apricots and cherries), mainly grown in the low lands of the coastal region. Imports of fruits and vegetables come through the port of Durres. Exports are to the neighbouring countries (mainly Kossovo and Macedonia) and are transported by road. The Consultant believes that the fruit production will grow at an average rate of 5% a year for the next 10 years and of 1 % a year (the same rate as the population growth) afterwards, and the vegetable production will only grow at a rate of 2.4 % for 5 years and at a rate of 1 % afterwards. The total local production of fruits and vegetables will then reach 1.265 million tons in 2023. The level of exports is therefore projected to increase to 55,000 tons in 2023.

The total anticipated production of **chromium**, **copper** and **Ferro-nickel** is 856,000 tons a year by 2006. This production is expected to be broken into 255,000 tons a year of Chromium, 101,000 tons a year of Copper, and 500,000 tons of Ferro-Nickel.

Based on the analysis above and after **calibration** of the estimated freight traffic flows, the Consultant projected the transport of freight to represent 2,810.4 million ton-kms in 2023 and the average annual growth between 2003 and 2023 to be 4.1 % per year. Its pattern is shown on the Map ES-3 here-after.

6.3 International, regional and transit traffic

Albania foreign trade is dominated by the EU (90% of total flows) and particularly, Italy and Greece, representing more than 70% of the total. Except for the few commodities to Kossovo and Macedonia which are imported through the port of Durres, there is little and decreasing interregional and transit traffic with the Balkan neighbouring countries, mainly due to poor transport connections, accentuated by the Balkan crisis. The situation is, however, gradually improving and picking up with re-establishment of the railway connection with Montenegro and with the improvement of border crossing facilities at the borders with Macedonia and Greece. Some of this trade is generated by Albania's increasing imports of foodstuffs (milk, cereals, potatoes, etc.), other consumables and petroleum products however small in volumes. Trade analysis does not predict any significant growth in international and transit flows. The economic growth of Albania's Balkan neighbours is predicted to be relatively low, lower than Albania's. Moffat and Nichol's study estimated that by 2025, only about 17 000, or 10%, out of 166 800 potential total containers would be using the Trans Balkan facility. The rest of the potential container traffic is assumed to use other sea ports in the region, or the railway/road land bridge between Balkans and Central Europe.

Albania needs to establish a clear policy for transit traffic, which is based on an analysis of the advantages and disadvantages of such traffic. Indeed, transit traffic is likely to increase business and employment opportunities in Albania. Disadvantages are environmental hazards, increased congestion, and wear and tear of the transport infrastructure which does not get adequately compensated. The competitiveness of Albania's transport system as a transit route will ultimately depend on the cost, speed and quality of service as compared with some other alternative. One scenario, which would make a trans-Balkan transit route (EU Corridor VIII) attractive, would be restrictions imposed on shipping through the Bosporus, due to environmental and other hazards resulting from congested sea lanes. Regional and other transport studies referred to above indicate that there is a case both for an upgrading of Corridor 8 as well as the north-south corridor between Durres/ Tirana and Montenegro.

Insérer Map ES-3 : Freight transport flows forecasted for year 2023

However, the economic and financial viability for completing the missing railway link between Albania and Macedonia hinges much on the volume of traffic to and from Bulgaria.

6.4 Traffic forecasts for the Albanian ports

The traffic forecast for the port of Durres in 2023 should be handled with some precautions because of the uncertainty which prevails on some major factors like the level and pace of privatisation of the operation of the terminals, the competition between container and Roll on – Roll off (ferries) traffic in Durres , the materialisation and schedule of the AMBO pipe line project, and eventually, the investment and marketing policy of the competing ports in the region (Bar in Montenegro, Tessaloniki and Igoumenitsa in Greece).

The traffic forecasted for the port of Durres is then estimated to reach 8.5 million tons in year 2023 which represent an average annual growth of 5.9 % since 2003.

6.5 Non – physical barriers

All the above analysis of freight traffic and projections assumed that traffic will develop on the basis of the growth in demand without undue constraints imposed by such “non-physical barriers”. However, non-physical barriers have severely impacted the volume of past and present Albania’s international passenger and freight traffic. For passenger traffic, severe exit visa restrictions hamper more frequent return trips. As for freight traffic, complicated documentation and customs procedures have tended to slow down traffic at borders, including at the Durres and Vlora ports. Some of these procedures are unavoidable due to the considerable volumes of smuggling which reportedly takes place, but much could be achieved if recommendations of the January 2003 Posford Haskoning report on the Durres Ferry Terminal freight clearance procedures could be implemented.

Undocumented charges for both passengers and freight at border crossings and ports (and for transit traffic within the country) are also to be considered non-physical barriers. They are said to be substantial, although no record of them exist. They will be a serious constraint in Albania’s quest for transit traffic, because they represent an unofficial tax which can obliterate any cost advantage Albania may have considering alternative routes.

The World Bank funded “Trade and Transport Facilitation Project in Southern Europe” which was approved in year 2000, with co financing from the Governments of Albania and of the United States is helping to reduce non-physical barriers at borders and forms part of a Regional Program of Trade and Transport Facilitation in South-east Europe. The program is a collaborative effort to: 1) support customs reform; 2) strengthen mechanisms of interaction and cooperation between private and public parties at regional, national and local levels; 3) disseminate information and providing training to the private sector; 4) finance infrastructure and equipment at selected border crossings; and 5) implement, at pilot sites, an integrated set of new customs procedures, information technology, and cooperation mechanisms for agencies at border crossings. Recent assessments showed that considerable progress has been in made in achieving the project objectives and that border crossing procedures in the Balkan area have substantially eased without reducing security requirements.

7. PASSENGER TRAFFIC ANALYSIS, MODELING AND FORECASTS

7.1 Present road traffic

The OD surveys carried out by the Consultant allowed him to estimate that there are in 2004 about 170,000 long distance passenger trips per day in Albania or 0.055 daily trips per inhabitant. The distribution of long distance passenger traffic by type of vehicles is: 39% of total passengers use private cars, whereas circa 61% use public transport, either minibus or coaches.

The processing of the OD surveys allowed the Consultant to prepare a balanced OD matrix giving the daily flows of road passengers between all pairs of the study zones. The Consultant considered 36 Traffic Analysis Zones corresponding to the 36 Districts according

to the administrative division of Albania. The highest flows are recorded between Tirana and Durres with 63,700 passenger trips a day.

7.2 Competition between road and rail for passenger traffic

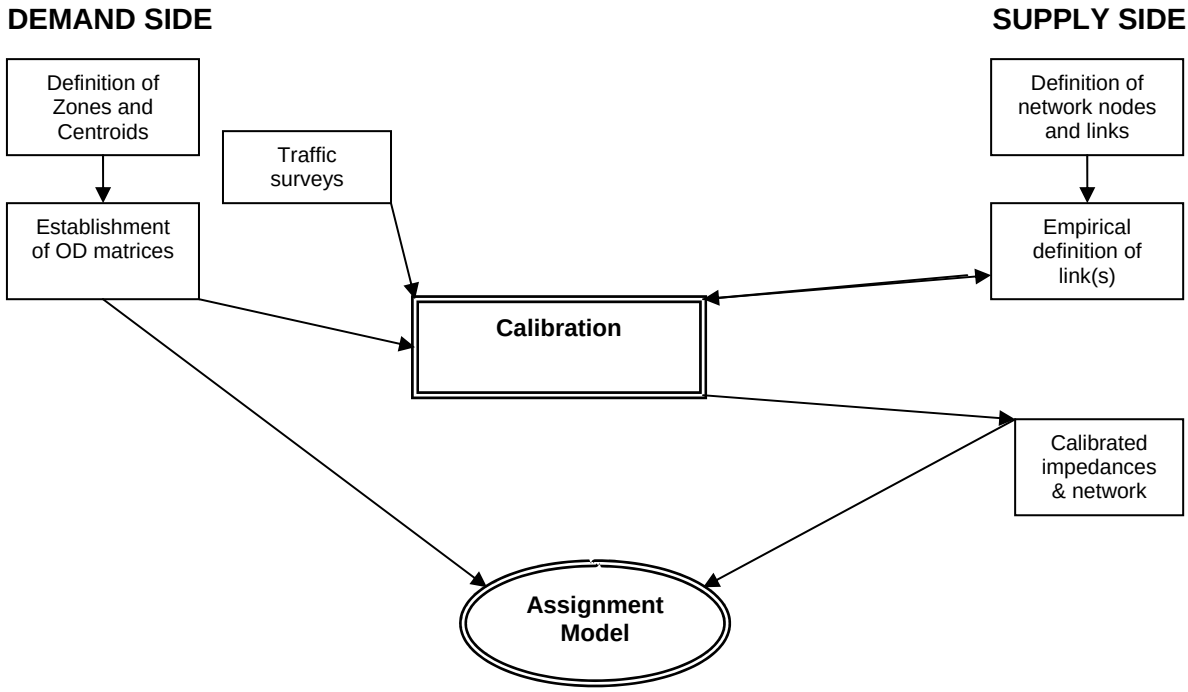
In Albania, railroad and road are not really competing for passenger traffic since road traffic is overwhelmingly predominant: about 97% of total passengers at national level use road transport against only 3% who use railroads.

7.3 Utilization of the TransCAD model for the ANTP study

Modeling of transportation systems is conceptually divided into two parts: the "demand side" and the "supply side" as described in Figure ES-1 below. The demand side consists of models that determine the demand for transport of goods and passengers. The supply side consists in taking into account the available transportation infrastructure. The demand side is modeled by using OD matrices whereas the supply side is modeled in terms of nodes and links of the transport networks.

In order to project and assign the passenger flows on the Albanian road network, the Consultant divided them into two main categories: domestic flows, or trips between each pair of the 36 administrative districts; and, foreign visitors and tourists, or trips which have their origin or destination outside of Albania.

Figure ES-1: Development of the traffic model



The modeling of the domestic flows was done using the TransCAD software package procured for the study. According to the Figure above, the Consultant defined first **48 traffic analysis zones** (36 "internal" zones corresponding to the Districts and 12 "external" zones corresponding to Albania's neighboring countries or trade partners) and 48 **centroids**, from which and to which all traffic flows generated and attracted by zone will come, for each zone. The Consultant defined also the base network of the Albania national roads as a system of 294 nodes and 333 links joining them and classifying road links by categories as shown in Map ES-4 below. The relevant network was then coded in TransCAD required format so that it can be used to produce all the data needed for the model development and application process.

7.4 Modeling of passenger traffic

In order to model passenger traffic in Albania for the period 2003 – 2023, the Consultant built up the following trip models:

- a **generation model** able to estimate the number of trips generated by each traffic analysis zone using input data such as socio-economic characteristics of these zones. The best correlation factors were achieved in each of the areas for trip generations $\mathbf{G_i}$ equal to polynomial functions of $\mathbf{POP_i}$ (representing the population of each zone) and $\mathbf{MR_i}$ (representing the motorization rates of each zone, or the average number of private vehicles per inhabitant per zone).

- an **attraction model** able to estimate the number of trips attracted by each traffic analysis zone using input data characterizing the "attractiveness", the dynamism of these zones. The best correlations were achieved in each of the areas for trip attractions $\mathbf{A_j}$ equal to polynomial functions of $\mathbf{POP_j}$ (population of the traffic zones), $\mathbf{T_j}$,(the number of tourism and leisure facilities) and $\mathbf{TT_j}$ (the number of Trade and Services companies per zones). It logically appears thus that in Albania the three main trip purposes are: visits (to relatives or acquaintances, etc.), trade/business, and leisure/tourism.

- a **distribution model** able to estimate the number of trips between each pair of traffic analysis zones using the calculated generated and attracted trips as input data. In order to simulate the destination choices of trip makers, the Consultant proposed a gravity-type trip distribution model that explicitly relates flows between zones to interzonal impedance to travel. The mathematical relationship has thus the following general format:

$$\mathbf{T_{ij} = k (G_i^a A_j^a) / C_{ij}^b}$$

with: **i**&**j** Origin and Destination zones
- $\mathbf{T_{ij}}$ Passenger traffic flow (road transport) between zones I and j
- $\mathbf{G_i}$ Number of trips generated by zone i
- $\mathbf{A_j}$ Number of trips attracted by zone j
- $\mathbf{C_{ij}}$ Impedance to travel between zones i and j (a function of the travel time between i and j)

and **a**, **b** & **k** factors to be determined in the modeling process.

The Consultant built first a model for domestic flows and then expanded the model to foreign visitors and tourists' flows. In addition to his traffic surveys, the Consultant used then statistics from the Ministry of Territorial Adjustment and Tourism, from the Albania Border Police and, more generally, from Instat. The Consultant also used data from the Port of Durres or from Albtransport to better account for ferry and air transport passenger traffic flows.

Finally, the Consultant **calibrated** the model through an iterative process aiming to adjust step by step the traffic flows assigned by TransCAD (sum of the domestic and foreign and tourist passenger modeled flows) to the actual traffic flows recorded during the traffic surveys. The best correlation was achieved for a trip distribution function equal to:

$$\mathbf{T_{ij} = 5.09*10^{-5} * (G_i^{0.902} A_j^{0.902}) / Tt_{ij}^{0.899}}$$

Map ES-5 below presents the modeling of existing long distance traffic flows, all vehicles combined, in 2003.

Map ES-4: The ANTP modeled road network

Map ES-5: Modeling of existing long distance traffic flows

7.5 Forecasts of road passenger traffic

In order to forecast passenger flows in the years to come, the Consultant projected all explanatory data of the generation, attraction and distribution models. In order to do this, the population and GDP growth rates in the short, medium and long term were estimated at first. Then, the Consultant elaborated projections of the population, the car fleet, the number of trade and tourism companies, the number of tourism and leisure facilities and the other explanatory data used by the models. Some projections are shown in the table below:

Table ES-1: Summary table of data projections

Year	2003	2008	2013	2023
Population (inhabitants)	3 070 000	3 200 507	3 397 202	3 827 600
Growth rate (p.a.)	*0.6%*	*0.6%*	*1.2%*	*1.2%*
Total car fleet	174 782	313 342	408 520	714 437
Motorization rate (per 1000 inh.)	*57*	*98*	*120*	*187*
Number of hotels, restaurants/ bars (**T**)	5 617	6 476	8 778	11 013
Growth rate (p.a.)		*2.9%*	*5.5%*	*2.7%*

Based on these projections and on the elaboration of the trip models (Generation, Attraction and Distribution) presented above, the Consultant built up estimated OD passenger and vehicle flow matrices for the years 2008, 2013 and 2023 and assigned them to the road network defined earlier. Thus, the Consultant estimated that the annual volume of passengers would shift from 561 000 in 2003 to 2 276 000 passengers in 2023. Consequently, in 2023, the total passenger flow is forecasted to be 89.4 million passengers-km, which represents a 9% average annual growth rate between 2003 and 2023. Taking also into account the freight traffic forecasts, the following Map ES-6 presents the traffic forecasts for all vehicles (freight and passenger) for the year 2023.

8. ENVIRONMENTAL CONSIDERATIONS AND ISSUES

8.1 Major Environmental Concerns at National Level

Industry is considered as the most polluting activity of Albania. Heavy industrial plants such as oil extraction facilities, refineries, chemical plants, steel mills and fertilizer plants have for decades discharged hazardous substances into the air, soils and waters. Moreover, the use of pesticides was not controlled for a long time, but it has sharply decreased during the last decade because of the drop in the farmers' income and of structural changes in the agricultural sector. More recently, rapid urbanization has given rise to a multitude of low standing dwelling buildings constructed in areas without water and sanitation services in the surroundings of the largest cities like Tirana. The urban waste generation is expected to grow by about 10 % per year for the next decade. At the present time, there is still no controlled landfill, nor wastewater treatment plant in the whole country.

8.2 Existing Environmental Policy and Legal Framework

The Constitution of the Republic of Albania, approved in 1998, calls upon the Albanian authorities to preserve a healthy environment, ecologically suitable for present and future generations. The National Environmental Action Plan (NEAP), developed in 1993 with support from both the World Bank and the EU's PHARE Programme, and approved by the Government in 1994, was the first step in a formal environmental management at national level. It has then been updated by the Government in January 2002 with a five-year implementation period.

Map ES-6: Assignment of 2023 road traffic forecasts (freight and passenger combined)

The 2002 NEAP takes especially into account the need to integrate environmental considerations into other sectors and envisages the development of a strategy and action plan for the development of sustainable transport, a sustainable and integrated rural strategy, a strategy for sustainable tourism, and a strategy and action plan for land protection against erosion. Within this framework and in full accordance with EU directives, two major Laws were prepared and adopted in 2002 and 2003 respectively: the Law on Environment Protection and the Law on Environmental Impact Assessment.

Moreover, since 1990, not only has the environmental legislation been significantly reinforced mostly in accordance with the EU environmental Directives, but also Albania has become a contracting party in the bulk of international, regional or sub-regional Conventions on environmental protection.

With the creation of a Ministry of Environment (MoE) in 2001, the absolute and relative budget of the Environmental Sector has significantly increased, from less than 0.05 % to nearly 0.2% of the total state budget (nearly 2.2 million € in 2004). MoE is in charge of the national environmental policy and strategy and has especially authority to request the Prime Minister to suspend approval of sectoral strategies and plans that do not comply with environmental requirements and to consult the relevant ministries on the determination and rational use of environmental funds. Moreover, at local level, the Ministry through its deconcentrated bodies, the Regional Environmental Agencies (REAs) established in each of the 12 prefectures (Qarks) and assisted local governments in the preparation of local environmental action plans. At central level, the Inspectorate of Environment and the Directorate of Environmental Assessment (created in 2001) are respectively in charge of controlling polluting activites through regional inspectors of the REAs, and supervising and coordinating the environmental evaluation process.

8.3 Sector-wide Environmental Issues

Legal instruments and institutional bodies are still very recent. As a result, only few transport projects have been subject to a formal environmental evaluation and it is too soon to assess the evaluation process. Nevertheless, according to the MoE Directorate for Impact Assessment, the evaluation of a road project could be uneasy if the road stretches over several regions, because the application for the environmental permit should be pre-evaluated by each concerned Regional Environmental Agency and Local Government.

Air pollution brought about by the transport sector is mainly due to both characteristics of the vehicle fleet and the quality of oil products. According to the technical control staff, only 10% of the vehicles would be less than 10 years and in 2001 and diesel oil represents about 70% of the total of oil products used in the transport sector. Petrol is in the second place with 20% while unleaded petrol still represents a minor part of the distributed petrol.

Although noise nuisance is not mentioned in the main Albania environmental legislation as an impact to be investigated, noise from traffic has increased during the past decade. Yet, buildings do not have special noise protection systems. A survey performed on some busy roads in Tirana showed that the noise levels presently vary from 60 to 90 dBA, whereas 55 dBA is generally considered as the threshold level for the occurrence of discomfort among an average population.

8.4 Specific Environmental Issues Related to Roads

The Albanian road network has been mostly developed in the coastal plain, notably the corridor Shkodër- Durrës – Fier – Vlorë due to its particular topography. The roads running through lowlands need to be protected from flooding by quite high embankments which may hinder the flow of surface waters and the movement of terrestrial fauna between the hinterland and coastal wetlands.

Waste oils generated by car maintenance are not properly collected and are generally spilled onto the ground, not stored in environmentally sound conditions and contribute to soil and

surface water pollution. The Ballsh refinery could be involved in waste oil recycling in Albania if collection is adequately organised and made profitable for private operators as it is now the case in the Port of Durres. This effort could be financed by a tax on lubricants.

Annual technical control is compulsory for every vehicle operated in Albania. A lighter periodic control also takes place on a biannual basis. The technical control mainly focuses on safety-related items such as brakes, headlamps, shock absorbers, etc. Though CO/CO_2 exhaust emission standards exist, they are not measured yet due to lack of adequate equipment.

Large quantities of scrap vehicles border many national roads in Albania (except those newly built) mainly in urban and former industrial areas. This has not only a very bad impact on landscape aesthetics, but also could cause safety problems as well as soil and watercourse pollution, due to the presence of toxic substances. MoTT has recently begun to address this problem and a licensing system for collection, storage and valorisation/elimination of scrap by private operators is currently under study.
Road ditches are considered by the bulk of population as natural pits into which they can throw out their refuse, just as they have been doing for ages, in the absence of adequate containers. This hampers the drainage of water and causes an awfully harmful impact to the landscape aesthetics. Furthermore, as far as roads are concerned, water stagnation caused by the refuses may favour the erosion of shoulders and increase the need for maintenance.

8.5 Specific Environmental Issues Related to Rail

Depending on locations, the construction of new railway lines could need high cuts and/or fills. In case of upgrading works on railway lines, the collection and disposal of the old ballast, polluted by hydrocarbons and heavy metals discharged by locomotives need to be tightly controlled to prevent risks of contamination of soils and waters in the stockpiling areas.

Rail traffic is currently too low to cause significant air pollution and noise through diesel locomotives, even if these locomotives are old and often in bad condition. However, very large quantities of scrap and debris have been disposed within the depots and workshops compounds, creating safety hazards and giving a disreputable appearance. Moreover, the ground in these areas is very likely polluted by chemical contaminants such as lubricants, paints, toxic metals and hydrocarbons.

8.6 Specific Environmental Issues Related to Ports and Inland Waterways

Since early 2004 a Department of Environment has been set up within the Durrës Port Authority. The extension of this pattern to the other Albanian ports has not been decided yet. The Durrës Port Authority has moreover licensed two private companies, Pastrim Detar Durrës (PDD) and Joni, to collect and dispose waste from ships. Both private firms seem to deal effectively with collection of liquid and solid waste from ships, and also with moderate accidental spills but will not be able to cope with major ones due to lack of adequate equipement. Moreover, a recent evaluation indicated that the soil in the vicinity of many oil tanks operated by national and foreign oil companies in Durrës port were polluted by hydrocarbons and notably polyaromatic hydrocarbons which could be very harmful for the environment and human health. The pollutants are more concentrated in the shallow layers of the soil, but in some cases, the pollution also reached the deep layers and is likely to reach the aquifer which runs towards the sea. The study of an Oil Spill Contingency Plan (OSCP) has been recently completed for the port of Durrës. The aim of the OSCP is to set up long term policy to protect the environment at Durrës from the oil spills specifically associated with fuel storage and transfer operations on the eastern side of the port.

Albania is one of the last Mediterranean countries not to be, though it has recently planned to sign it, a party of the MARPOL Conventions 73/78 aiming at protecting the marine environment by eliminating intentional discharges of oil and other harmful substances and minimizing accidental discharges of such substances by vessels sailing under flags of State Parties. However, the 2002 Law No.8905 on Protection of Marine Water provides for the

protection of the marine environment from pollution resulting of human activities and vests the responsibility of inspection and control of ships entering ports to the Harbour Master and the Regional Environmental Agencies.

8.7 Specific Environmental Issues Related to Aviation

The Mother Theresa international airport in Rinas is currently the only formal civil airport in Albania. The runway is properly drained and waste water is collected. Rinas is still a fairly rural area and even though the number of dwellings is expected to grow significantly in the medium term, air traffic noise nuisance cannot be considered significant in terms of public health and human well-being.

Another international airport is being constructed near Kukës close to the Kossovo border. Although the construction of this airport required very large amount of earthworks, no environmental impact assessment seems to have been carried out. Until now, no significant environmental impact has been caused by the operation of civil airports and aircrafts in Albania.

9. TRANSPORT SECTOR LEGAL AND INSTITUTIONAL FRAMEWORK

9.1 Transport Policy

The Government of Albania has outlined the main components of its transport policy in a document prepared for the Committee of Deputies, European Conference of Ministers of Transport (E.C.M.T), in 1996. The major objectives stated in this policy are:

- To develop and rehabilitate road, rail, port and airport infrastructure and secure the necessary financial resources to develop the system in a harmonized way in order to support and encourage the development of the economy of the country and meet demands of European Transport in the southern region of Europe;
- To implement the economic reforms, through the promotion of privatization of remaining activities, the commercialization of public services, as well as through increasing recovery of costs through a price and levies policy;
- To create a regulatory and legal system according to European demands and standards which will secure optimal operation of transport services on the basis of high level of competition;
- To develop and carry out institutional reforms in all sectors of transport.

The above principles are sound and have reasonably been followed since 1996, although the policy needs to be supported by more detailed laws and regulations to achieve the stated objectives. The transport policy is based on the principle of the 'Government creating the enabling environment' for the increasingly private sector dominated transport sector to manage and operate transport entities and service providers.

9.2 Transport sector legislation and Regulations

Albania transport sector legislation and regulations are comprehensive and show that the Ministry of Transport and Communications has been quite active through the 1990s in modernizing the transport sector legal framework. However, it has been noted in several instances that the implementation, or the enforcement, of some of these laws is much behind schedule. The positive effects of some of the new laws remain therefore to fully materialize.

9.3 Integration with the European Legislation

Albania has already planned a series of measures to fulfil its obligations, as a full participant of the Stabilization and Association Process, to get the approximation process under way. In accordance with EU guidelines, the Albanian Government has stressed the integration to the European Union and the legislative approximation of its transport legal framework with

International Standards and Regulations, especially by making Safety (Road Safety, Vehicle Regulations, Maritime safety especially for dangerous goods' transport, etc.); Border Crossing facilitation, and transport networks' upgrading its priorities. Albania has also decided to sign the AGC Agreement on main international railway lines (UNECE agreement and part of the E-rail network legal framework) and the AGTC Agreement on main International Combined Transport Lines and Related Installations (UNECE Agreement).

Yet, the Government of Albania is expected to sign the Memorandum of Understanding for the Core Network in early 2004. This network particularly aims at facilitating the integration of the South Eastern Europe in line with the overarching goals of the Stabilisation and Association Process. It encompasses the relevant sections of the Pan-European Corridors IV, V, VII, VIII (Durres-Varna through Tirana) and X and concentrates on a limited number of ports (Durres and Vlora for Albania) and airports (Rinas Airport for Albania) with the aim of guaranteeing adequate services and land access. The main legal basis of the Core Network is made up of on the one hand relevant part of the *Acquis Communautaire* in the field of transport and on the other hand major international Agreements and especially the AGR, AGC and AGTC Agreements. Therefore, the Consultant suggests that an assessment of the AGC and AGTC ratification progress be made. Moreover, the Consultant recommends that the Government envisage planning the adherence to the AGR Agreements since it is both part of the *Acquis Communautaire* and crucial within the framework of Pan-European and European Union Networks.

9.4 Transport sector institutional framework and budget

9.4.1 The Ministry of Transport and Communications (MoTT)

The MoTT's Agenda, as defined by law, is very comprehensive. It clearly indicates the Ministry's interest to develop and modernize the practices in the transport sector and duly recognizes the role the private sector can play in this process. However, this agenda also reveals that MoTT scope of work is too detailed to correspond to the role of a modern ministry of transport, which essentially consists of drawing up policies and regulatory regimes in the transport sector and overseeing that these would be implemented. Such a role would essentially be of creating 'an enabling environment' for the transport sector operators, whether publicly or (increasingly) privately owned. Another aspect which has not been sufficiently elaborated on and which applies to the modal agencies as well, is the need to bring in other stakeholders in the transport planning and execution process. Stakeholders may be other Government Ministries and agencies, but the concept mainly implies the participation of private sector users of transport services, whether private transport companies, or representatives of passenger/car owner associations.

9.4.2 The Role of Modal Agencies in Transport

The modal agencies (that are similar to executing agencies) in the transport sector need to become much more like autonomous authorities, as is the case today, not only in developed countries, but all over the world. One of the key issues appears to be the definition of the 'executing agency' role. It seems to imply a strictly technical role for execution of works with very limited planning capacity. Their role should be greatly expanded to include management and financial accountability, as well as planning and marketing. The latter function is particularly important for the railways.

9.4.3 Analysis of the Transport Sector Budget

The share of the National budget assigned to the transport sector varied little over the last four years from 8.36 % (2001) to 11.20% (2002). The distribution of the MoTT Investment budget between the different sub-sectors has been relatively constant during the three last years: 80.6% for roads (while they represent 98% of the transport market); 8% for ports (but slightly decreasing), 6.3% for railways, 0.8% for civil aviation (in 2002-03, but 9.37% in 2004 because of the beginning of the construction of the Kukes airport), 0.1% for road transport

This distribution is mainly following the amount of the international funding and the related counterpart funds from the Government, available to these sectors, with the notable exception of the Railways which almost receive no international funding.

It is impossible to identify the amount spent on infrastructure maintenance as there is no separate line item in the transport sector budget for this purpose.

Moreover, the MLGD investment budget on urban and rural roads dramatically dropped from 28.91% in 2003 to 12.33% in 2004 because of the completion of internationally funded projects. In 2004 MLGD therefore spent only 3.4% on urban and rural roads of what the MoTT spent on primary and secondary roads, although it is in charge of a network five times larger.

9.5 Illegal Construction, Land Reservation and Expropriation

The Albanian legislation reveals a worrying gap as regards land laws (land registration and expropriation for public interest) and urban planning laws. Indeed, not only are there no specific provisions as regards exceptional public works, but also unclear, complicated and overlapping decisions between local and central levels regarding land use strategies may hamper the implementation of the ANTP, especially in the road sub-sector.

Thus, despite the rules and regulations in force, illegal constructions along the main roads are still sprawling. The Consultant identified four major causes to explain this ongoing situation. First, the lack of secondary level infrastructures and access roads, but mostly, the lack of coordination between central and local levels that has brought about a chaotic situation where master plans or detailed plans along major traffic roads can be directly approved at national level without prior approval at regional level and building licenses issued without compliance with the approved local plan. In addition, the lack of government funds dedicated to expropriation and investments combined with weak law enforcement can hamper the development of transport plans.

The Consultant suggests therefore a clarification of the institutional structure for planning implementation based on the Local Government Law, a revision of the planning permission and development processes as well as planning and regulation standards' improvements in order to efficiently distribute competences across administrative levels and better take into account local specificities in accordance with overall planning goals.

10. TRANSPORT INFORMATION SYSTEMS

10.1 Approaches to transport information systems

A system to meet the storage, analysis, retrieval and reporting of information must consider what form the information is in. It is important to understand that information (data) has specific features which need to be considered. These are

- **Information storage -** Today information is stored on paper or on electronic media – and both are still important. The big advantage of electronic storage is that once information is in one of these forms it can easily be reproduced in any other electronic or paper form.

- **Information value -** Not all information is useful. If data has no value or is outdated, there is no need to store it.

- **Information type -** Very often, information is the result of field work (primary data). Then information is processed and finally analyzed. The most important of these three information types is the processed data. Other people can refer to it and make their own analysis. They cannot do this if they only have the analysed data and the primary data is not reliable.

- **Information accuracy** – Processed information is usually accurate for the purpose for which it was collected, but this may not be accurate enough for other purposes.

- **Information ownership** - Many organisations are interested in collecting traffic information. They own it, both because they have collected it, and because as its user they have the best idea of its accuracy and reliability. They may also decide not to make it public.

- **Information – locational and non-locational** - One of the most dramatic changes in information over the last few years is the realisation that there is a difference between locational and non-locational information. Geographic Information Systems (GIS) are the new approach to the analysis of locational information. The approach is already in widespread use in Albania, and formed the basis of the earlier GRD Information System set up by SweRoad.

- **Information – the concept of meta-data** - People will not use information if they do not know that it exists or what it contains. Summaries of the information are produced and circulated to solve this problem. The summaries are called metadata, and their simplest form is a list - although normally a more extensive summary is needed.

Concerning Albania, it is important to note that other information systems for the transport sector have already been suggested or tried in the past, mostly the SweRoad's GRD database and the TECNIC's proposed ACTIM unit. The first one aims at introducing, developing and implementing a computerized Road Data Bank (RDB) for all state roads in Albania under the authority of the General Roads Directorate, GRD, and to provide GRD with all tools to manage the RDB independently at the end of the project. The second one attempts to address the very serious problem concerning transport sector information in Albania by establishing a unit called ACTIM (Albanian Central Traffic Information Management Unit) in the Offices of the Ministry of Industry, Transport and Trade basically to collect, store and distribute transport data from local offices of national bodies to central offices, in particular to allow a significant data access for external users. However, due to many difficulties, these projects will be either disregarded (SweRoad) or are considered inefficient (If the main purpose of ACTIM was to store and distribute information, then it would be cheaper today to store and distribute information on DVD or over the Internet).

10.2 Geographical information systems

Most information involves location – certainly most information related to the transport sector – and locational information suggests the use of maps. Map-making is one of the most obvious uses of a GIS system, but this is only a means of seeing the results of the extensive information storage and analysis which the GIS is capable of. A GIS includes much more than simply map-making and graphics software, its features include relational databases, information stored separately for different disciplines (forestry, roads, geology), and time-based information. It also has an 'analysis engine' which can combine and calculate from information from very different subjects.

All that an organisation needs to start using a GIS is technical and locational information on their infrastructure. Many organisations in Albania are already using GIS, and the government has established an inter-organisational GIS coordination committee. Chaired by the head of Albania's Institute of Military Geography, it includes representatives from both the private and the public-sector. Several of the organisations are analysing information for the road sub-sector. The problem is that they are using information on Albania's national roads which is out of date – so much of their work is at wasted, and could even be quite misleading.

11. ROAD SUB-SECTOR

11.1 The Road networks in Albania

The total road network in Albania consisting of all classes of roads, including urban streets and roads and rural tracks capable of taking vehicles, is approximately 18,000 km long including 3,136 kms of National Roads, 10,500 to 11,000km of District and Communal Roads, and eventually the remaining 4,000 km under the jurisdiction of different autonomous

bodies, enterprises or companies. The referencing system of national roads set up by SweRoad has been adopted and remains unchanged in all projects since 1999: the primary road network is 1,138 km with nine main links forming the backbone of the network and the secondary network is a total length of 1,998 km.

The guideline document for managing the various road networks within the country is the Coda Rrugore, the "Road Code" passed into Law on 22 July 1998 (Law No. 8378) and promulgated in April 2001. The Road Code defines six classes of road in terms of their construction, technical design standards, and functional characteristics: Highways, Main inter-urban roads, Second inter-urban roads, main urban roads, Second urban roads, and local Roads. The roads thus defined are then divided according to ownership into State roads, District roads, Inner roads (road under the jurisdiction of some special enterprises such as mining and forestry companies) and Communal roads (all roads within a commune or municipality). The Consultant finds the definitions and designations within the Coda Rrugore sufficient, but is seriously concerned about the way designs of new or improved roads actually conform to the standards specified in the Code.

The Albanian network is a very small national network (total road length of 18,000 km) when compared to many other countries both in the region and worldwide (117,000km in neighbouring Greece for instance). However its density (0.62 km/km^2) compares well with this of Albania main neighbours, while the proportion of paved roads does not (12.4% of paved national roads while the proportion is equal to 63% in Serbia-Montenegro or Macedonia). The present condition of the road network is poor with only 32% of national roads in fair to good condition as shown by Table ES-2 below. Furthermore it is deteriorating because of lack of an efficient maintenance system.

Table ES-2: General condition of all the networks in year 2000

Road Network	Good (%)	Fair (%)	Poor (%)
National	10	22	68
Rural	20	25	55
Urban	10	30	60
Other	0	0	100

11.2 The development of the road network

During the past ten to twelve years several major programmes have been carried out, and are still on going, to improve some of the major sections within the Albania national road network. These major programmes have largely been funded by the major international funding agencies and through bi-lateral financing schemes or grants. The roads that have been or are being improved through these programmes are mainly the international links to the surrounding countries such as the 262 km-long East – West Corridor (Tirana – Elbasan – Macedonia border) that is part of Pan-European Corridor VIII, the 405 km-long North – South Corridor (Han I Hotit – Tirana – Durres – Vlora – Kakavije/Urat – Greece border), and the 180 km-long Durres – Kukes – Morine road – Kossovo border. This process of harmonisation of the road networks within the region is also in line with the desire of Albania to eventually join the European Union as a member state.

The country is also embarking on improving many more localised feeder and secondary road links that either directly or indirectly led to the main corridors. At the time of preparing this report, the Consultant, along with his counterparts in GRD, have identified some 85 projects, which are either already completed, or are in the process of being built, or have been designed for early implementation.

11.3 Traffic volumes and vehicles fleet

The traffic surveys and the development of a road network model using the TransCAD software carried out by the Consultant as part of the ANTP study provided data to represent the year 2003 traffic volumes on the main national road in the country as shown on Map ES-4 above.

The North-South Corridor between Shkoder, Tirana, Durres and Vlora bears the highest traffic volumes which peak at 22,000 vehicles a day on the Tirana – Durres motorway to fall to 2,600 vehicles a day at both ends. There is much less traffic on the East – West roads with volumes in the range of 1,100 to 3,200 vehicles a day.

11.4 Road sector management

Two major players share the overall road management within the country: the Ministry of Transport and Telecommunications (**MoTT**) responsible for the national roads, and the Ministry of Local Government and Decentralisation (**MLGD**) responsible for the rural roads and the local road network. The departments responsible for day to day management of the national and rural road networks are quite separate and distinct organisations. Unfortunately this separation of roles also means a loss of economy of scale in terms of technical expertise and cooperation.

MoTT commissioned its executing agency the General Roads Directorate (**GRD**) for the management of the national roads. There are several MoTT other directorates also involved, either directly or indirectly, in the road sector (Land Transport, Road Transport, and Traffic and Road Safety) each having its own Mission Statement. The Directorate of Road Transport has the direct responsibility for budgetary investments on the national road network. According to the Consultant, the main problem, at the GRD level but also at the Ministry level, lies with the total lack of identifiable management goals which should be enshrined in management statements. Interlinked management systems seem to be missing. The ministry does not have a road maintenance policy, nor does request GRD to prepare a road budget and programme according to this policy. The budget seems to be routinely prepared as for the previous year, without consideration of the actual needs of the road network, not mentioning the needs of the road users, nor of the other sectors of the Albania economy.

As a consequence of the Government decentralisation policy, **MLGD** was given the responsibility of the Local Roads which represent a network almost four times larger than the National Roads network. There was not at the same time however, the creation of a specific road unit within MLGD to formulate and implement a policy and a strategy for this network. The principle of decentralisation, quite commendable from an operation perspective, seems to have negated the need for a central coordination and support. MLGD leaves the management function of the rural road network to the 36 administrative districts. The MLGD Department of Economics is responsible for road sector matters. For the road sector, the prime responsibility of the department is the provision of budget funds to the districts, which include a contribution earmarked for rural road maintenance.

11.5 Sector operation and maintenance

The current situation on the road networks in Albania is such that there is a notable absence on the majority of routes of visible, well planned and executed maintenance, both on the national and the rural road networks. Both networks generally show serious signs of localised failures and defects throughout. A further pointer to the lack of systematic planning and programming of maintenance activities is that neither of the ministries concerned, MoTT or MLGD, can point to a system of set decisive performance targets, in terms of amounts or purposes of periodic treatments or lengths of roads annually rehabilitated. There is a worrisome lack of planned periodic maintenance notably due to paucity of funding, but also a lack of coordinated effort from the regional road offices and district road organisations, and poor policy formulation and strategic decision making at the centre. Furthermore, in the case

of rural roads, it is compounded by the uncertainty in the decentralisation process and by the lack of finance.

Most maintenance works are presently done by central or local governments' direct labour. As part of the IDA financed Road Maintenance Programme an experiment of the utilisation of private contractors for routine maintenance under pluri-annual contracts is being initiated. This method is used in numerous western countries at the present time. If successful, it would definitely constitute a good alternative to the methods presently used in Albania.

11.6 Road sector financing

For national roads, in 2003, the GRD investment budget represented 92 % of the total budget, foreign financing included, or 87 % of the total budget financed from national resources, leaving only a small part of the funds for maintenance. It is also worth noting that foreign investments in roads decreased by 52 % between 2000 and 2003, while the nationally funded investments increased by 10% during the same period. The maintenance budget increased from 2000 to 2002, but decreased to 743 m Lek (€ 5.6 m) in 2003 or €1,689 per km. This is a substantial amount, but it is impossible to determine the distribution of these funds between routine, periodic maintenance and rehabilitation. Finally, it seems to the Consultant that maintenance budgets that are currently available for the national road network, although not adequate, do not appear to be used as effectively as they might be on actual works.

For rural roads MLGD received from the Ministry of Finance a budget of 554 m Lek (€4.2m) in 2003 and of 200 m Lek (€ 1.5 m) in 2004. MLGD presently estimates however that a 2,100m Lek (€ 15.8 m) or ten times more than presently available, would be required to carry out suitable maintenance on the rural roads network. The rural road maintenance budget's distribution between the 36 districts by MLGD follows rules that are quite comparable to these used in other countries and seem reasonable to the Consultant, even if they could be improved in the future, for instance by taking into account the level of poverty in the districts or the actual condition of the rural roads.

12. ROAD TRANSPORT SECTOR

12.1 Sector institutional and regulatory framework

12.1.1 Policy direction and legislative environment

Transport is and will be dominated by road in the foreseeable future. However, the Albanian Government is fully aware that a better equilibrium between the various transport modes is necessary to optimize development. Combined transport could represent a first step towards the development of a more integrated transport system in the country.

The Road Transport Law (Law No. 8308) issued in 1998 addresses such issues as: (i) designating the powers of the Ministry of Local Government and Decentralisation (MLGD) after the decentralization takes effect; (ii) laying the rules covering the passenger transport companies; (iii) laying the legal foundations of the Road Transport Commission; (iv) the licenses to foreign owned transport companies; (v) Ministry of Transport and Telecommunications (MoTT) procedures and criteria applying to road transport companies; (vi) transport of hazardous materials; (vii) driver licenses; (viii) technical inspections of vehicles; (ix) oversized vehicles; and (x) road safety and road traffic.

12.1.2 Organizational structure of the road transport sector

The main stakeholders involved in the road transport sector are:

- **The Ministry of Transport and Telecommunications (MoTT)** is responsible for the policy and regulation functions (operating licenses and vehicle certifications) of international and intercity passenger transport in general, and of international freight transport through its *General Directorate of Land Transport.* The Ministry, in cooperation with the **Ministry of Public Order**, is also responsible for traffic safety through its *Directorate for Traffic and*

Safety, which falls under the General Directorate of Land Transport. Finally, MoTT is ultimately responsible for the enforcement of vehicle standards, although inspection and control tasks are delegated to the *General Directorate of Road Transport Services*.

- **The executing agencies:**

The *General Directorate of Road Transport Services* is an executing agency which means that it "provides road transport related services to the Government and private entities". GDRTS does not receive any budget support from the State and it generates its own revenues from the services it provides (mostly vehicle registration and inspections, driving licenses, sale of vehicle plates, vehicle circulation taxes, etc). GDRTS cooperates with the Ministry of Public Order to perform road control and inspections of transport operations, documents, economic usage of vehicles, etc. GDRTS is also working towards harmonising the Albanian legislation in the field of transport with those of the EU "Acquis Communautaire". In this respect, it is trying to obtain technical assistance from the French Aid.

The *Institute of Transport Studies* undertakes studies in the field of transport, especially policy and regulation papers for the MoTT. It is competent for all modes of transport. It also develops medium and long-term transport strategies. The Institute of Transport Studies also participates in the development of future road legislation through specific studies.

- **The Ministry of Local Government and Decentralisation** (MLGD) plays only a minor role in road transport. Through its District Offices, it delivers the licenses and vehicle registrations for national freight and passenger transport. These licenses and registrations apply only for transport within the limits of the District. Through the Municipalities, it is ultimately responsible for urban transport services, although the Municipalities act independently.

- **The Ministry of Finance** (MoF) collects most of the taxes, duties and fees paid by transporters, but not all. During the past few years, this collection system shifted towards autonomous or semi autonomous executing agencies by devolving some responsibilities to the agencies. Thus, they provide transportation related services against a fee and keep a part of the revenues generated to pay for their operation expenditures. Only a share of total revenues is remitted to MoF.

- **The other – non institutional – stakeholders:**

The **passenger transport** companies: they are either inter-urban operators (mostly private) or urban operators (state-owned in the process to be privatized). These companies do not have any type of organized representation or lobby.

The **trucking** companies (transport of goods): they are represented at the national and international levels by the Albanian Association for International Road Transporters (**ANALTIR**).

12.1.3 Main legal and regulatory issues

- Effective enforcement will be one of the key issues in the integration of the Albanian legislation with that of the European Union, because the process involves not only enacting legislation, but all institutional and financial mechanisms for their application and enforcement. Moreover, Albania has developed or is developing transit traffic bilateral agreements with its neighbouring countries (especially Greece and Italy, but also Spain or Germany), but does not presently have any specific market-sharing agreement system with them, since most sharing agreements are done on an individual basis by the operators with their partners in these countries.

- There is no real enforcement of the law in terms of weight controls and axle load control systems. Indeed, the surveys carried out by GRD show a serious overloading problem in Albania: about 75% of all trucks on the Albanian road network being overloaded.

- The World Bank financed – Road Maintenance Project states that after being asked to draw up a list of dangerous sites (black spots), the traffic police came up with 109 sites and the Consultant's Safety Expert with an additional 20. Therefore, the Government of Albania has launched a priority program aimed at reducing the number of serious and fatal accidents occurring on the national road networks, especially on the above black spots.

- There are no particular obstacles to enter the road transport services market in Albania and anybody owning an adequate vehicle and willing to go through the administrative procedures can enter the market making it quite competitive. Tariffs are theoretically regulated for passenger transport services, both at the national and the international levels. However, the tariffs seem to have become more flexible at the international level over time, as some operators have had to reduce their prices in light of (unfair) competition. Tariffs are totally free for freight transport services.

12.1.4 Main weaknesses of the institutional framework

- MoTT is too much involved in the day to day running of the business of the executive agencies.

- Stakeholders independent from Government are not sufficiently involved in the planning and management of the road transport sector. The need is for more dialogue with private transporters and other road users on the ways to improve the road assets, in terms of quantity (new constructions and network rehabilitation programs) and quality (maintenance, safer roads, etc.).

- The existing road transport system lacks reliable information and data that would allow the Government to properly apprehend, plan and improve the existing situation which is aggravated by secretive behaviors, particularly regarding the financial standing of the private transport companies.

12.2 Operation of the road transport sector

12.2.1 Vehicle fleet

The vehicle fleet in Albania mainly includes used vehicles. It is estimated that in 2003, only 600 new vehicles were sold in the country, although the growth rate for new vehicle sales is high. Furthermore, only cars and some pickups, vans and other four-wheel-drives are bought new and the new car market is regulated. Heavier vehicles such as buses and trucks are all bought second-hand. This market is mostly unregulated with a large number of small operators importing and selling cars, and usually managing to avoid being taxed.

The vehicle fleet has grown tremendously in the past few years. From 2000 to 2003, the overall vehicle fleet, including motorcycles, went from 185,000 to 264,000. This represents an average yearly growth rate of 13% over a three-year period. This growth was especially strong for cars, with an average growth rate of 15% per year over the same period.

In 2003, the Tirana municipality has the greatest number of vehicles (about a third of the total national vehicle fleet), followed by the Durres municipality. Together, the Tirana – Durres area represents almost half of the vehicle fleet in the country.

12.2.2 Inter-urban passenger transport

On the one hand, the number of passengers increased by 7% a year over the period 1994 – 2003 and by 3% over the last five years, showing a levelling down of the growth of passenger travel. On the other hand, in terms of passenger-km, the growth was steady over the past nine years, at roughly 3% a year. According to MoTT 2003 data, there were 111 companies licensed for national inter-urban transport of passengers (representing a total of about 400 buses) and 19 companies licensed for international transport of passengers (representing a total of about 50 buses). These companies operate on 270 national routes and 15 international routes. Furthermore, some agencies are licensed to sell tickets for

passenger transport: 38 for national transport and 17 for international transport. Besides fixed lines, the latter include tourism travel packages.

The main issues raised by the passenger operators are:

- The lack of terminals;
- The illegal competition from minibuses, especially on the national routes and the less developed international routes, such as the ones to and from Kossovo, which are not yet properly regulated by international agreements;
- The condition of the roads, especially in the mountainous areas and the least developed parts of the country. According to the passenger transporters, this is one reason why the bus fleet is usually older and not sophisticated: they are the only ones that can stand the condition of the roads.
- The lack of access, at a reasonable rate, to financial markets to develop the business;
- The lack of flexibility to fix the tariffs, especially on the national market, which for instance, prevents them to cover the higher cost of gas; and

12.2.3 Freight transport

On the one hand, the number of tons transported has increased in average by 2% over the period 1994 – 2003 and by 4% over the last five years, showing an acceleration of the growth of freight transport. On the other hand, in terms of ton-km, the growth was steady over the past nine years, at roughly 3% a year. Note that according to Ministry's officials themselves, the data regarding freight transport is subject to serious statistical weaknesses, and also that the data applies only to "Albanian subjects". According to MoTT's 2003 data, freight transport is undertaken by some 400 licensed companies for the domestic market and 53 for the international market, all of which are based either in Tirana or in Durres. The data also includes 8 forwarding agencies, all based at the Port of Durres.

The main issues raised by the freight transporters are:

- Heavy, lengthy and unreliable clearance procedures at the borders.
- A heavy technical inspection system, as the trucks have to be inspected twice a year (against once every two years in Greece, for example), inducing a lot of time-consuming paper work, and a significant cost. Paradoxically, this cumbersome system does not prevent Albania to have a lot of old and dangerous trucks on the roads.
- The overall poor condition of the roads in Albania.

12.2.4 Urban transport

- **In Tirana**: the Municipality of Tirana is responsible for urban transport, which it also organises and manages (it centrally fixes the fares). Aside of the unique remaining public operator (Urban Park), four others private companies (that are not subsidized) have been authorized to enter the market after 2000. From expert's opinion, the actual number of passengers seems to be at least 120,000 a month, or some 1.5 million passengers per year.

The Municipality of Tirana is also in charge of licensing taxis. There are no fixed tariffs and it is up to each passenger to negotiate the fares, which leads to occasional abuses, especially with the minibuses. For this reason, the Municipality is looking about the possibility of fixing the taxi and minibus fares. It is also planning to decrease the number of licenses it distributes, because part of the demand is fulfilled by the new bus organization.

The need for more lines is acknowledged by the Municipality, but one of the main problems preventing a densification of the network is the poor state of the urban road infrastructure. In spite of these shortcomings and some complains about the low frequency of service and the tendency to fill the buses up, there is a general feeling that urban transport has greatly

improved since the beginning of the decade and the opening of the market to private companies.

- **In the other major cities:** Urban transport systems also exist in Durres, Shkoder, Vlora, Elbasan and Korçe. Except for Shkoder, these cities still rely on one single public operator, but are bound to follow Tirana example in the short term. One of the ways in which privatisation of the urban transport operations is being considered is to concession the local Urban Park operators to the private sector.

13. RAIL SUB-SECTOR

13.1 Organisation and Physical Infrastructure

13.1.1 Organisation

The Albanian Railways (a.k.a HSH), is a wholly state owned public company. Its role is being redefined by the new Railway Code of the Republic of Albania which has been recently approved by Parliament. It states that HSH should be managed and operated on a commercial basis. The new code clearly specifies that the State owns all railway infrastructure, superstructure and equipment. HSH is managing, maintaining and operating these.

HSH is closely supervised by the Ministry of Transport and Telecommunications, which has a Railway Transport Directorate under the General Directorate of Land Transport. In practice the railway's autonomy in management terms seems low and its structure appears to be under-managed at the top level. There may be two reasons for this: first the historic weight of the Government in the management of this strategic means of transport, and second the fact that HSH is operating at a large loss makes it very dependant of the Government financial support.

There is no separate management of the passenger and freight businesses, though this change is under consideration in order to harmonise the organisation with EU principles. This change is in any case desirable, in order to allocate costs against revenue, as the passenger business is government supported. The system's organisation is a traditional operations-based structure, working through seven local regional offices located in Shkoder, Lac, Tirana, Durres, Elbasan, Fier and Ballsh

13.1.2 Physical Infrastructure

The Albanian rail system is a comparatively modern development: the opening of the first line took place in 1947 and the current network was completed in August 1986 with the opening of the line through the Albanian / Montenegrin border to Podgorica. The Albanian Rail system is built to the European standard gauge of 1,435 mm. All routes are single track with passing loops, and consist of 447 km, of which 424 km is currently operated. The system was built primarily for freight traffic and, apart from the Tirana – Durres line, has only ever carried a very basic passenger service. There is little rail operation after dark, due to lack of passenger demand, but the system is capable of operation on a 24 hr basis.

The physical infrastructure of the railways is in very poor condition aggravated mostly in the mountainous areas by soil instability: train crossing points out of use, major crossings without communication links, derelict condition of the permanent way across the whole system, continuous safety hazard**,** severe lack of maintenance and bad drainage of bridges or viaducts, ineffectual track drainage systems, etc. This has lead to the imposition of system - wide speed restrictions, causing extended journey times and reducing the attraction of rail travel. Plans, currently awaiting for finance, exist for track rehabilitation on the Pogradec and Shkoder routes,. The sections most requiring early attention are between Plaza and Rrogozhine, and between Elbasan and Pogradec.

13.1.3 Train Services and traffic

- **Passenger traffic:** Passenger traffic on rail has plummeted since the collapse of the communist regime in 1990 and the subsequent lifting of the ban on private car ownership. The decrease is continuous and in 2003, HSH recorded 2,068,000 passenger trips corresponding to 105 million passenger-km compared with 3,389,000 passenger trips and 168 million passenger-km in 1996. The average journey length is about 50 km.

- **Passenger Services:** Passenger services on each main route have always been at a very basic level. Moreover, transit times are slow due to poor track conditions and do not, in many cases, allow passengers from the main locations to make an effective visit and return on the same day. Bus journey times on all routes are now more frequent and faster than rail though rail fares are government-subsidised and remain cheaper. Passenger train loading has declined over the years and passenger vehicles, though they are basically good vehicles, have not been well maintained and their comfort standard is very poor. The net result of the present operation is that a poor quality and unattractive service is being operated on an expensive basis. In July 2004, a daily service was opened between Tirana and Pogorica (Montenegro). There is no other international service.

- **Freight Traffic:** The total quantity of freight transported by HSH is small (517,000 tons a year, or 31.2 million ton-km in 2003) and the average haul is extremely short (60.1 km in 2003). It would be useful to recall that it is generally considered that a railroad generally breaks even financially if it transports one million of tons a year and that rail transport is generally cheaper than road transport for distances exceeding 500 km.

- **Freight Services:** Freight activity is currently at a low level, and only some five daily services are being operated regularly. Last year's tonnage figures showed a 40% increase on 2002, albeit from a low base, and, according to HSH, the next two years show prospective increases of the order of 30%. Unit trains are operated from origin to destination, the major traffics being Cement Clinker, Phosphate/Fertiliser, Chrome and Ferro Chrome, Fuel Oil and Coal/Coke. International traffic via the Montenegro link from Podgorica is developing rapidly and is forecast this year to quintuple last years tonnage of 16 000, and to double again in 2005. This traffic consists of general consumer goods from Central Europe to Tirana.

13.2 Rolling stock, operations and performance

- **Rolling stock:** There is sufficient motive power to cover the present traffic and anticipated increases. The aging fleet has been maintained by a process of cannibalisation, aided by traffic reduction. Trains frequently carry a technician when in service to attend to problems en route, and the locos appear to achieve a reasonable availability commensurate with their age.

Passenger rolling stock has all been acquired second hand over the years from the Italian, French, Polish and Austrian state systems. Not only does it seem that there have been no attempt to keep these vehicles in reasonable internal condition and comfort levels are very low, but also they do not satisfy safety requirements. Technically these vehicles are quite adequate for the task, but simply suffer from neglect. There are 82 % of these wagons presently available for service, the others being under repair or scrapped. The German railways offered in 2004 36 passenger coaches to HSH. Thus whole rolling stock is sufficient for present and anticipated future traffic levels and significant scrap value could be realised.

The main freight marshalling yard, locomotive depot, and rolling stock maintenance facilities are also all located at Durres. With the sharp reduction in traffic levels, the rail system now has much surplus rolling stock stabled at various points throughout the system and in varying condition: a considerable amount however is in scrap condition and needs to be disposed of.

- **Passenger services:** Despite system rationalisation in recent years, there remains considerable spare capacity in the system. A more frequent service could be operated at

reduced cost. Furthermore, train service times seem to have remained largely unchanged over the years and are not attractive for stimulating the business.

- **Safety:** All lines are generally unfenced, and are regularly used as pedestrian walking routes and frequently for the movement of livestock. If train speeds are significantly increased, measures will have to be taken to attenuate these practices. There are many level crossings, official and unofficial. Those on public roads are generally attended and equipped with barriers. This situation raises serious safety concerns, and the situation will require addressing if train speeds and frequencies increase. However, the low number of accidents and other incidents is most probably the result of the speed restrictions on the network.

- **Radio-telecommunication:** The radio signalling over the majority of the routes is adequate for the low service frequency, and is backed up by the issue of paper train movement orders to train crew. There is a duplicate radio system in the event of radio failure, and back-up telephone service to train crossing points.

13.3 HSH financial situation

All together HSH revenue from transport services represented only 35.1 % of the total revenues, subsidies and grants included, in 2001 and 29.3 % in 2002.

Moreover, excluding depreciation, the HSH Operating Expenses in 2002 were 1, 020.4 m Lek which represented almost 3.5 times the revenues generated by transport services that year. In addition, all subsidies and grants included, HSH reported a loss of 157.1 m Lek (€1.19 m), or 18.2% of total revenues, in 2001 and of 128.6 m Lek (€ 0.93 m) or 12.8% of total revenues in 2002. Eventually, according to the HSH balance sheet the total liabilities are 2,176 m Lek (€15.8 m) in 2002, which makes the company net worth negative of 1,364.8m Lek (€ 9.9 m) that same year.

This financial situation is clearly dramatic and urgent decisions and actions are required to stop the tremendous burden HSH imposes on the Government limited resources.

14. AIRPORT AND CIVIL AVIATION SUB-SECTOR

14.1 The existing infrastructure and facilities

The only civil airport currently operating in Albania is Tirana Rinas International Airport (TIA), “Mother Teresa” and is operated by a state owned company : SH. A. Albtransport. The airport is located about 25 km by road (16 km by air) North-west of the city of Tirana. The latest Master Plan for the airport was updated in the year 2000, following a major rehabilitation which used a credit of DM 48 million provided by the German Government in 1996-1999. These works consisted of reconstruction of the runway and taxiways, expansion of the apron, installation of a new runway lighting system, approach and navigation aids and meteorological equipment. A second phase of investment is now under way, financed by Albtransport. Some investments for fencing and maintenance of taxiways have also been more recently undertaken under a NATO program. Finally the airport itself is now undertaking an expansion of the terminal building and the reconstruction of the oldest part of the apron. In 2003, Albtransport recorded a total of passengers 561,446 passengers (arrivals and departures) compared to 87,165 in 1992; 1,874 freight tons were imported or exported through the Tirana Airport in 2003 that is more than four times the 1992 figure. This continuous uptrend leads to a tripling of the total number of flights in less than 10 years (5,319 flights recorded in 2003).

There are eight other civil or military/civil airfields, two of which under construction, in Albania, most of them having no paved runways. Thus, the construction of a domestic airport in Kukes funded by the United Arab Emirates began in 2002 and is expected to be completed in late 2004 for an estimated cost of US $10 million. The project includes a paved runway 1,950 m long and 30 m wide with two shoulders 7.5 m wide each, an apron 170 x

60m and a terminal building. It is built at an altitude of 473 m and, according to the ICAO standards for this type of international airport has the capacity to receive Boeing 737's.

There are no regular air services within the country at the moment. This is partly due to the limited market with relatively short distances, but also to the airfields condition. There is however some potential for domestic services mostly in Saranda – Delvina, Korça, Vlora-Fier and Kukes. This would most likely be a long-term development since the purchasing power of most Albanians is still far from adequate to sustain this expensive mode of travel. Another limiting factor is also the travel distance from Tirana downtown to Rinas airport for these short flights.

14.2 Ongoing development projects

14.2.1 Airports

The Government adopted in 2000 the updated Master Plan and feasibility for a new passenger terminal at Tirana-Rinas Airport, to be operated as a concession. The intention at that time was to call for tenders for the construction of a US $ 25 million terminal with an annual capacity of 1.5 million passengers. Total developments under the 15-year Airport Master Plan would cost over US $ 100 million. The Government expected traffic to rise by 13% annually until 2005 and between 7% and 8% during the following ten years. The Consultant reviewed the passenger traffic growth in relation to GDP and found that the number of airport passengers would reach 1.3 million in 2015 and 1.5 million in 2017. This essentially confirms the realism of the Master Plan traffic projections and objective of some 1.5 million annual passenger capacity at the end of this plan period.

Some improvements under Phase I of the Airport Master Plan are already under way: reconstruction of the oldest part of the apron is now undertaken, an extension of the passenger terminal is under construction and, with two new fire trucks, the airport will now be able to be classified as an ICAO category 7 for fire fighting, when the fire house is completed.

The Consultant also reviewed the viability of a direct rail access to TIA[1]. He considers that, even with very high growth rates, TIA would not generate sufficient passenger traffic to justify a rail based transport system in the foreseeable future.

Finally, in February 2002, the Government invited expressions of interest for the privatisation of the operation of the TIA terminals, as well as of some of the proposed investments mentioned above. At the time of writing this report the concession agreement is still not signed by the two parties. If eventually successful, the agreement will sent to the Parliament for approval, followed by a transfer of the airport facilities management from Albtransport late in 2004. It is likely that the terms of the agreement would consist of two parts: first, a down payment to compensate the Government for the loss of airport net income and, second, investments in the airport to meet the needs of future traffic during the 20-year concession period. The Consultant was however confirmed that, under this agreement, the concessionaire will build a new access road to the airport with an estimated construction cost of €7.2 million and a construction period of two years.

14.2.2 Air Traffic Management (ATM)

In June 2000 an innovative Albania Master Air Traffic Management Plan (MATMP) for the years 2001-2010 was concluded. It includes many aspects of the management of air traffic, which best represent also the current situation for air traffic control and related issues. The MATMP implementation is now carried out under the Albania National Airspace Modernization Project (NAMP) with support from the Lockheed/Martin Consulting Group and ANAT/ANTA. It includes all air navigation systems, a new control tower and air traffic control

[1] Tirana – Durres Railway Modernisation project with connection link to Rinas International Airport, report by the Albanian State Railway and General Electric, July 2003

building. In the MATMP the estimated costs for the institutional and legal framework were a relatively modest US $ 300,000 and for human resources US $ 270,000, while the financial needs for operational and technical aspects were much larger. Once the staffing and training plans have been completed, very large staff training needs will require resources for financing. For ATM both Eurocontrol and ICAO may provide expertise, but additional funding would certainly be required. It is also essential that such resources are provided not only for ANTA and TIA airport staff but also categories like fire fighters at the airport and for the human resource development at the Directorate General of Civil Aviation (DGAC).

Of particular urgency for the TIA airport is new Air Traffic Control tower. On the other hand the need for a new Primary Surveillance Radar may require more review at the time of implementation, since radar control for the majority of traffic is done by the MSSR already. Improved navigation aids for TIA should also take into account the planning for ADS/GNSS (Automatic Dependent Surveillance/Global Navigation Satellite System) in the future and the timing of a runway extension.

14.3 Airlines

There are two commercial airlines in Albania with six aircraft and regular international flights: Albanian Airlines and ADA Air. In addition 10 international airlines are operating to Rinas airport, serving a total of 13 foreign airports. These airports are Athens, Belgrade, Sofia, Vienna, Budapest, Frankfurt am Main, Istanbul, Pristina, Ljubljana and four airports in Italy: Bari, Bologna, Milan and Rome. Another airline is just beginning a service from Munich. The two Albanian airlines are possible candidates for new domestic air traffic, should it be considered financially viable. In total, civil aviation in Albania employs at least about 800, of which the largest are TIA airport with about 480, NATA/ANTA with a technical staff of over 100, Albanian Airlines with 140 and DGCA about 20 employees.

14.4 Institutional setup and sector management

- **Institutional regulations:** The Ministry of Transport and Telecommunications is responsible for civil aviation in Albania. Its *Directorate of Air Transport* (DAT) is in charge of the ministry's policy functions in the field of air transport as established in Regulation 441 of 2003 of MoTT. An important part of the work for this Directorate is the ratification of several legal instruments on international civil aviation and signing bilateral air agreements with 22 foreign states. Under the Ministry DGCA (created in 1997) is in charge of overseeing air transport and managing the day-to-day oversight of civil aviation including tasks such as an Aeronautical Inspectorate for Airlines and Airports inspection, Technical Standards, Air Traffic Services and Airports, Statistics, Charges and other economical aspects. Albtransport created in 1959 as a state enterprise of international air transport, was transformed in 1999 into a joint stock company. Furthermore, before 1999, Albtransport had already separated air traffic control and vested it in an independent agency, ANTA (the National Air Traffic Agency) responsible for Air Traffic Management (ATM) under DGCA.

- **Membership of International Institutions:** Albania is a member of *ICAO* and, since 1998, of the European Civil Aviation Conference (*ECAC*). It also has recently become a member of *Eurocontrol* (The European Organisation for the Safety of Air Navigation). The Joint Aviation Authorities (JAA) is an ECAC associated body representing the civil aviation regulatory authorities of a number of European states which have agreed to co-operate in developing and implementing common high and consistent safety regulatory standards and procedures. While Albania is not a member of JAA, it is a candidate for membership since it is a medium level objective of the MATMP for DGCA. If it materializes, Albania would be required to meet JAA standards. The MATMP has been therefore developed to respect these standards.

- **Sector operation and maintenance:** All operations and maintenance of international airports are controlled by European and international aviation authorities, to ensure safety.

Another very important part of civil aviation is the provision of air traffic management by NATA/ANTA. Since Albania is now a member of Eurocontrol these services are now further integrated by the European air traffic management system. This is important since the number of over-flights has also grown rapidly, though longer term estimated growth of over-flights is limited at around 4% per year. Therefore, in order to cope with this traffic level, two upper vertical ATC sectors will be implemented instead of one (i.e. dividing airspace further to be able to meet the demand for more overflights with additional air traffic controllers), in addition to a lower and a terminal airspace sector. Improved coordination with neighbouring Skopje, Brindisi and Kerkyra (Korfu) centres is also planned.

In other respects, for safety purposes, civil military co-ordination is one of the most urgent civil aviation regulatory issues needing to be addressed in Albania. In particular this relates to air traffic control, the use of airspace and joint use of certain airfields. Indeed, military operations are currently carried out with complete autonomy from civil considerations, including operations from Tirana Rinas Airport.

- **Sector financing:** On the one hand, the Tirana International airport is economically viable, providing the foundations for its proposed privatization and the National Air Traffic Agency (NATA/ANTA) expected net revenues are well covering operating and maintenance costs, allowing under the proposed Albania National Airspace Modernization Project (NAMP) to well support international commercial bank financing to be negotiated later in 2004. On the other hand, the financial situation of the remaining Government support for the sector, and in particular DGCA's, is much more problematic. With a small staff and a very limited Government budget this entity has to perform an essential oversight for the rapidly growing and changing civil aviation sector. Some mechanism of transfer of more resources from TIA/ANTA ought to be considered to redress the imbalance between the privatized part and the governmental official responsibilities of civil aviation.

15. PORT SUB-SECTOR

Albania is situated on the eastern littoral of the Adriatic Sea and is served by two primary deep-sea ports at Durres and Vlora, and two secondary ports at Shengjin and Saranda used mainly by cabotage (coastal) shipping.

Table ES-3: Tonnage throughput at principal ports

	1999	2000	2001	2002	2003
Port of Durres					
Imports	1.448.677	1.614.337	1.809.300	2.041.216	2.427.708
Exports	108.540	131.500	149.713	136.908	243.413
TOTAL	1.557.217	1.745.917	1.959.013	2.178.124	2.671.121
Port of Vlora					
Imports	366.826	526.700	591.800	496.400	331.100
Exports	0	0	0	7.000	21.400
TOTAL	366.826	526.700	591.800	503.470	352.300
Port of Shengjin					
Imports	175.400	227.700	255.500	344.230	306.900
Exports	7.700	4.500	6.900	2.600	9.900
TOTAL	183.100	232.200	362.400	346.830	316.800
Port of Saranda					
Imports	47.200	60.400	51.600	60.630	82.100
Exports	0	0	0	0	0
TOTAL	47.200	60.400	51.600	60.630	82.100

The Albania port sub-sector is under the authority of the *Department of Maritime Transport* in the Ministry of Transport and Telecommunications. Annual cargo throughputs for the four ports for the period 1999-2003 are summarized in Table ES-3 above.

An increasing share, although small in size, of the total traffic is shipped in containers. Containerized traffic represented 12,253 tons in 1999 and grew to 48,157 tons in 2003. Figures for the first quarter of 2004 indicate that the growth rate of container shipping is continuing to accelerate. Out of the total 2,822 ship calls in 2003, 1,662 or 59% were ferries carrying some 683,000 passengers a year, and 1,160 or 41% were commercial ships.

15.1 Port of Durres

15.1.1 General

The port of Durres is 42 km from Tirana, adjacent to the town of Durres and in the northern part of the Bay of Durres that has a length of 18 km. Access by road is by a modern East-West 4-lane dual carriageway highway from Tirana. This highway connects with the TEN Corridor VIII to FYR of Macedonia, and to the eastern Balkans. There is also access to the north south highway that in turn goes to Montenegro and Greece as well as to the planned road which will link with Kossovo.

Durres is Albania's principal port with 77% of the country's imports and 89% of country's export tonnage passing through the port, totalizing 78% of Albania's traffic. Over the last 5 years total exports have increased by 124% and imports by 68% giving an overall increase in cargo throughput of 71%. Cargo traffic is quite unbalanced between imports, over 91% of total throughput, and exports, less than 9% of total throughputs. An increasing share, although small in size, of the total traffic is shipped in containers.

The Port of Durres Director reports directly to the Supervisory Board composed of representatives from several Ministries. Although the number of employees has been reduced, the port still seems to be overstaffed. The main surplus is in the mechanical sector and bulk cargo handling operations. Two private companies provide Stevedoring services.

The port has a total quay length of approximately 2,205 meters including 11 berths with the design depth of water varying from 7.35 m to 11.5 m and a quay length varying from 30 m to 292 m. Most of the berths are used for general and bulk cargo with the exception of Quay 6, which is used as a start-up container facility. Quay 9 is used by the Ferry Terminal. The eastern Quays 10 & 11 are currently used for handling imported cement and liquid bulk products. The deck elevation is at + 2.0 above MSL (Mean Sea Level). The entrance channel was originally dredged to 11 m deep, 100 m wide and 4.6 km long. The port land area covers approximately 80 hectares of land and a basin of 70 hectares. The 80 hectares of land, of which about 12,500 m², are covered storage area. The Ferry Terminal covers 36,300 m². (4.6%), berth aprons and usable back areas respectively 66,685 m². (8.46%), and 213,565 m². (27.08%) are used for roads, rail, parking, general open storage, etc. There are still 152,960 m² of undeveloped land available for future expansion.

Within the port land area, adjacent to the Ferry Terminal, there is also a ship repair yard with a floating dry dock and a small fishing port. On the East Side there is a tank farm for the storage of fuel oil, diesel and aviation gas, and NATO logistics storage facilities. The western side of Quay 1 and its back-up area is used as moorings and barracks by the Italian Military/Naval Forces as well as the Port Maintenance/ Administration facilities. Facilities for handling bulk cargoes include grain storage for up to 15,000 tons, bulk cement handling and open storage hard standings for minerals and scrap.

15.1.2 Institutional setup and sector management

Under the new law, the Port of Durres Authority (PDA) should be considered as autonomous and to have more flexibility in taking steps, measures and decisions. In fact the reverse is true, due to the maintenance of its former strong dependence to several ministries, lack of change of mentality and public motivation, etc.

15.1.3 Ongoing development projects

Currently, there are various projects being implemented in the Port of Durres, financed by donors including the World Bank and European Investment Bank. They include:

- paving, draining and lighting the East Quay upland areas of some 5 ha and construction of the access road to the East Quay
- detailed design for the rehabilitation/reconstruction of Quays 10/11 and back-up areas,
- construction of paving, drainage, lighting, engineering to the western quays of about 22 ha is to start in September 2004 and will continue for about 18 months.
- detailed designed of the Ferry Terminal and associated on-land facilities is programmed for completion by June 2004
- construction of Ferry Terminal and associated on-land facilities, financing by EIB/EBRD under negotiation with implementation for beginning of next year,
- study for installation of a new electrical cabling system that will contribute to overcoming power outages in the port.

Procurement of a 45 ton Kranbau Electric Crane and the two new 10-ton Ansaldo electric cranes for general cargo and dry bulk handling, equipment for the start-up container terminal, and spare parts for repairs of three to four cranes.

Maintenance dredging of the access channel and basin is scheduled to start in the very near future to allow larger ships to enter the port and tend to economies of scale. Included in this project is the removal and disposal of the ship's graveyard that developed on the east side of the basin and precludes efficient use of the East Quays.

15.1.4 Port operation and maintenance

The port of Durres is currently involved in four main cargo-handling activities: General and bulk cargo operations, Start-up Container Terminal, Ferry Terminal and Oil Terminal. Over the last 5 years investment has been made in the planning, development and construction of some of the port facilities, others are part of on-going planning. Maintenance of equipment, facilities, structures, infrastructure and dredging of the port is a sector that is neglected, if not forgotten, and poorly funded in the Port of Durres as in many other ports. Port and cargo handling equipment generally is in need of a high degree of maintenance if not replacement. Indeed, any further investment in existing equipment that has by far exceeded its normal service life cannot be considered as having a positive cost/benefit to the port. However, maintenance dredging of the access channel and basin is scheduled to start. The Congestion factor for the port has been significantly reduced over the years (from 1.00 six years ago to 0.39 in 2003), but this has not all been achieved by increases in efficiency and productivity, but by the practice of mooring up to three vessels alongside each other at a berth.

15.1.5 Port tariffs

The merchant fleet calling Port of Durres is generally made of small-ungeared ships. Most of these small vessels are Albanian flag registered and are very old. The preferential tariff allowed to Albanian flagged ships by offering them a 50% reduction on berthing rates, thereby subsidizing them, has resulted in the maintaining an increasingly aged fleet of inefficient ships with no incentive for a fast turn around. This preferential structure has lead to non-commercial usage of berths such as for lay-by and the mooring for impounded vessels.

Inefficiency coupled with high berth occupancy caused by ships remaining at the berth long after cargo has been loaded or unloaded have an impact on the overall delay, which in turn means higher costs for the shippers. These higher costs are in turn passed onto the consumer. There is a high risk that if the present situation continues, costs for using the Port

of Durres will be high in comparison with alternate ports and shippers will go to such alternate ports where the cost is more competitive.

15.1.6 Financial analysis

The port revenues from its own services reached to 1 401 m Lek (€ 10.5 m) in 2003. It is an increase of 21.2 % over the previous year which is however slightly less than the increase in traffic during the same period of 22.6 %. Furthermore, the 2003 operating profit fell to 200 m Lek (€ 1.50 m) or 14.3 % of the total revenues, from 215 m Lek (€ 1.62 m) or 18.7 % of the total revenues in 2002. This reduction is due to very high currency losses and to the increase in sale of fixed assets that year. Nevertheless this operating profit remains substantial and it is wise to use part of it to offset fully depreciated assets which were still recorded in the books.

According to the new Port Law, the Port of Durres Authority should have comprehensive financial management autonomy. The Ministry of Finance on behalf of the Government of Albania, has signed sub-loans with the PDA under which, it shall payback all current and future loans received for the Port of Durres. On the other hand, channel dues go directly to the Government and not to the Port. As the port have no control on the channel dues this could result in another risk that will either influence negatively on the Albanian economy by an increase of prices as a result of an artificial increase of tariffs, or will discourage the shippers to call at the Port of Durres. It is strongly recommended to correct this situation and to give a full financial autonomy to the PDA. This autonomy would grant PDA the possibility to borrow for its investments and, as a consequence, to repay them directly without going through the Treasury. On the other hand, there would be nothing wrong in having PDA paying to the Treasury dividends or for the rental of the land it use in Durres.

15.2 Port of Vlora

15.2.1 General

The Port of Vlora is Albania's second port with some 8% of the country's import and 11% of country's export tonnage passing through the port, a total of 10% of Albania's traffic. Over the last 5 years total exports through the port have increased considerably, but imports have decreased by 10% resulting in an overall decrease in cargo throughput of 4%. Similarly to the Port of Durres cargo traffic is quite unbalanced between imports equal to 94% of total throughput and exports at 6% of total throughputs. Moreover, Vlora has recently been declared a Free Trade Zone.

Access to the port from the sea is open. Access by road is by an improved existing road, which links the port with the planned highway connecting Vlora with Rrogozhina (TEN Corridor VIII to FYR of Macedonia, and to the eastern Balkans), and with the North-South Corridor. There is no rail operation from the quay aprons to the inland rail system and there are no plans to connect the port with the railway system.

The "Old" Port of Vlora (in sequence to be called Port of Vlora) is located about 90 km south of Durres. Through Sazani isle and Karaburun Peninsula, it has a direct access the Adriatic Sea. Land access is by\a dual carriageway (called Adriatiku) through the town ending up in a narrow road that connects the port with the national highway and transport corridors.

Finally, the Port of Vlora is entirely owned by the Ministry of Economy on behalf of Government of Albania and operated by the Port of Vlora SH.A (JSC). Some of the operations and services such as pilotage, tallying, towage, water supply to ships, agency functions, trucking, cleaning, food services, stevedoring are already privatized. By the New Port Authority Law the port is given authority to grant long-term leases within the port boundaries as well as to receive loans and use them for the port development. As for the Port of Durres, the law has not defined the detailed operational, economic and managerial framework for achieving this objective, nor does it explicitly define what the new organization's powers are and how they may be applied.

Before 1990 several small ports and port facilities were built along the coast (most of them not used) such as the “Old” Port of Vlora (a West Quay used for discharge of general cargo and bagged cement and for handling commercial vessels; a ferry berth handling one ferry at a time, an East Pier used on both sides for handling general and bulk cargo discharge generally of construction materials),the “New” Port of Vlora, the “Oil” berth(though severely damaged, can handle 30,000 DWT tankers with a length of up to 185 m and beam of 25.8 m), or the “Construction” harbour. Moreover, the Narta Oil Station made up of 4 oil tanks in the north of the New Port has been used for import/export of gas oil with a 20,000 cu.m tank farm capacity. In addition to this facility, a new one has been built with a 20,000 cu.m tank farm capacity and has been used both for export of Ballsh refinery’s raw gas oil and export/import of gas oil and gasoline. These oil terminals can accommodate tankers of up to 20.000 DWT and are supplied with fire fighting systems.

15.2.2 On- going development projects

Several projects and studies on the Port of Vlora are currently en route to favour the development, improvement and modernisation of the Port of Vlora, especially the Master Plan and Feasibility Study for the existing Port of Vlora completed in March 1999 that recommended the staged development of the existing port with the primary objective to develop the Ferry Terminal, to facilitate the movements passengers and cargo between Vlora and the whole country in general, and with Italy and Greece. It has not yet been fully implemented. Likewise, the utilization of the Port of Vlora is linked with the *Rehabilitation of the Lushnje-Fier and Fier-Vlora Highway*, which links Vlora with Durres and Rrogozhina. However, these projects are not yet finalized.

AMBO has undertaken a study for the construction of an oil pipeline from Black Sea ports along Corridor 8 to the Port of Vlora into Adriatic Sea. The project would include a single mooring terminal at Vlora, connected to the shore by a 7 km long 46” pipeline to allow for 50 m terminal depth, allowing 300,000 ton tankers.

Under the Albanian Power Sector Generation and Restructuring Project a Feasibility Study has been carried out and Tender Documents prepared for the construction of a *combined cycle power station* fuelled by distillate oil and located at a six hectares green field site about 6 km north of Vlora . The plant has been designed to allow conversion of the natural gas when imported gas is brought to Albania, is funded by EBRD, EIB, IDA and KESH is scheduled to start by end 2004 and be completed beginning 2006.

15.3 Port of Shengjin

The port is situated 85km north of Durres, some 41 km to the south of Shkoder and 7 km by road from Lezha. The condition of the road is poor. There is no railway access to the port. Access from the sea is through a buoyed access channel which had a design depth of 7.5m, now reduced to 4.5m. Some of the buoys are now missing. The port serves its local hinterland with the major towns of Shkoder, Lezha and Kukes as well as being the nearest port to Kossovo.

Shengjin is considered as a secondary port, but in terms of tonnage throughput it is only marginally less active than the Port of Vlora. Some 10% of the country’s import and 4% of country’s export tonnage pass through the port, a total of 9% of Albania’s traffic. Over the last 5 years total exports have increased by 29% and imports by 75% giving an overall increase in cargo throughput of 73%. Cargo traffic is quite unbalanced between imports equal to over 97% of total throughput and exports at 3% of total throughputs.

Construction materials have formed a large proportion of the volume of imports of which cement has been a large component. With the increase of Albanian manufactured cement it is probable that this particular import will be reduced. Other volume imports are foodstuffs. Major exports include fish and fish products.

With a relative high number of small vessel calls as well as the poor condition of structures and cargo handling equipment, port performance indicators are not very good. The average ship's time in port is in the order of 6.5 days of which 2 to 3 days (36%) are spent waiting for a berth. Other delays account for about 7% of the ship's time with the result that only some 36% of the ship's time is used for cargo handling.

The development of the Port of Shengjin is constrained by the limitations of the bay and relatively shallow access. With the growth of industries in the Shkoder region, such as the export of 25% copper concentrate from Munella and the formation of closer ties with Kosovo, the demand for facilities to handle both exports and imports has some potential to increase.

15.4 Port of Saranda

The secondary Port of Saranda has a total throughput of only 2% of the national cargo, notwithstanding an increase over the last 5 years in the import cargo passing through the port of 74%. No export cargoes are recorded. The port also handles a small amount of passenger traffic, principally tourists from the Island of Corfu visiting Saranda and the Roman remains at Butrinti, plus the cruise ships that make this a port of call.

The port facilities are not in a good state of repair. The facilities comprise a 52 m long and 4m wide jetty in 4 m of water and a quay 58 m long with an alongside water depth of 4.5m. The design of this quay allowed for a depth of 6 to 7m. The structural condition of the quay is not good and suffers from lack of repairs and maintenance over the years. The access to the berth is along a channel 800 m long by 50 m wide with depths in the range of 6.0 to 7.0m. There is approximately 800 m open storage and 3,050 m² warehousing available.

The port principally serves its local hinterland with the import of building materials and small amounts of foodstuffs. The throughput of cement and construction materials are the only cargo type showing any increase during the period 1998 through 2003, other cargoes appear to be sporadic and can not be considered a reliable cargo for the port. The port does not experience much congestion, most ships being able to berth on demand on arrival. On average, excluding passenger vessels, there are six cargo vessel calls a month. Berth occupancy was in the region of 82%. This high occupancy is due to lack of mechanical equipment and also due to the bad state of repair of the facilities. The high occupancy does not interfere with the movements of the smaller passenger ships as they use the jetty. Berth occupancy by passenger ships is 25%.

16. INLAND WATERWAYS

16.1 Inland waterways transport

The lakes and rivers generally cross Albania from east to west, flowing into the Adriatic Sea, they are for the most part quite shallow. For this reason they are not well suited for inland waterway transport. Lake Shkodres and Lake Ohrid do not serve the National Transport Network. These lakes, as well as Lake Brutrinti near Saranda, could be developed for recreational use. Development of Lake Shkodres and Ohrid for uses other than recreational could present problems of inter-country agreements as both these lakes form part of the international border with respectively Montenegro and the FYR of Macedonia. After making the Buna river navigable in 1960, three hydroelectric plants were built on the Drini River, resulting in the creation of three reservoirs called Vau i Dejes Lake, Komani Lake and Fierza Lake. Originally developed for freight and passenger transport between the main Northeast Cities of Albania and the rest of the country, these three artificial lakes effectively cut off the far north region from the rest of the country and created the necessity to have ferries to cross these lakes to reduce long, arduous or non-existent detours to reach isolated rural communities. In 1993 the freight traffic was only 7,000 tons and the passenger traffic 24,000. All of the vessels were sold to private operators. Nowadays, the Buna River is not navigable any more due to siltation problems. The situation is similar for the Vau Dejes Lake which is becoming too shallow. The only navigable lakes remain Koman and Fierza, with Fierza

having very small traffic and the infrastructure is generally in poor condition on the three lakes.

The Ministry of Transport and Telecommunications through its Maritime Department is in charge of inland waterways transport, but it does not carry out any safety control, nor any monitoring of day to day operations. The private operators do not pay regularly the taxes and operation fees. Currently the investments made by the Ministry are minimal and only focus on rehabilitation and maintenance of the existing infrastructure and facilities. They represented some 18 m. Lek (€140,000) in 1999, 12 m Lek (€ 90,000) in 2000 and 4 m Lek (€ 30,000) in 2001.

It is the Consultant's opinion that with the improvement of the national and rural road networks, the importance of these ferry services will be gradually reduced. This does not imply, however, that issues and problems related to this transport should be ignored. The best way to address safety and technical standards is to require that private operators transporting freight and passengers as a business, apply and have a valid commercial license which specifies the conditions and standards to be followed. Equally important would be the efficient verification that these services actually only operate with a valid license. Only minimum investments for the rehabilitation of the Koman Lake infrastructures would make sense in the short term. However these should be conditioned by the acceptance of the recommended safety standards by the private operators.

16.2 Country coastal waterways

With the continuing improvement in the national highway system, land travel times are very much shorter and road traffic allows for greater convenience. Indeed, a shipment by sea has to be transported to the nearest port where it is off-loaded and then loaded onto a ship which may take up to a day, and then on arrival it has to be off-loaded from the ship and onto ground transportation, which again can take some time, before travelling onto its destination.

Moreover, concerning passenger transportation, coastal waterways seems to be less attractive than road infrastructure for two main reasons: average speeds by road are higher as the condition of roads improves whereas unless a large investment is made in vessels, only a once-a-day service can be provided, and road permits provide a higher flexibility. Therefore, unless one looking at the traffic generated by the local port population, which is insufficient to allow recovery of the investment, it is doubtful whether enough traffic could be generated by the individual port's hinterland. According to the Consultant, it thus appears that there is very little benefit, economically or in time, to encourage national coastal services for transport of goods or passengers.

17. PIPELINES

17.1 Existing petro-chemical industry and pipeline system

Albania has active oil and natural gas fields in the Patoz-Marinez and Cakran-Ballsh areas of Fier Prefecture in Central Albania. There has however been a continuous decrease in production of oil and gas since transition due to lack of maintenance of equipment, lack of new exploration technology for extracting new oil reserves, and shortage of funding from private companies after the restructuring of the oil sector and dissolution of the former state monopoly "Albpetrol" into three companies "ARMO", "Servcom" and "Albpetrol": as a result, the production of crude oils has shifted from 845,000 tons in 1991 to 350,000 tons in 2002 and the production of natural gas has been divided by 10 during the same period of time.

Moreover, out of the four refineries in Fier Prefecture, only two (in Fier and Ballsh) have been operational recently, with a production capacity of 1.5 million tons, but processing recently only about 300 000 tons. There was also an ammonia nitrite plant in Fier using natural gas as feedstock and producing chemical fertilizers for the agricultural sector but it closed in 1992. Yet, the petrochemical industry employs over 9,000 people in the area and is thus an

important employer. In addition, all the pipelines and supporting pumping systems are corroded and represent an environmental hazard as do the oil and gas field pumps and storage facilities.

17.2 AMBO pipeline project

The AMBO Pipeline is a project promoted by AMBO Company, a special purpose U.S. company. Brown & Root (UK) was commissioned to undertake a feasibility study of this 913km, 36" diameter pipeline, with 5 pumping stations, running from the port of Burgos on the Black Sea to the port of Vlora. The crude oil would originate in Russia, Azerbaijan and Kazakhstan and be transported by tankers across the Black Sea to the port of Burgos. The main markets for the crude oil would be Western Europe, United States and Canada, but Bulgaria, FYR Macedonia and Albania would have off-takes for their domestic consumption. There would be at least one off-take point in Albania at the Ballsh refinery. According to the Brown & Root feasibility study[2], the Trans-Balkan Pipeline would be competitive with other, alternative pipeline projects and as it would be with direct tanker shipments from the Black Sea to Holland (Rotterdam) and United States.

There is no information about the cost and timing of the completion AMBO pipeline project, nor does the Consultant have information about the environmental assessment, nor of the financial terms for Albania.

18. TRANSPORT SUB-SECTORS DEVELOPMENT AND INVESTMENT PLANS

It is important to remind that the objective of the present study is to prepare a National **Transport** Plan and not an **economic development** plan for Albania. Transport is an essential service to the national economy, but, although it could contribute to economic development, it cannot generate development if it is not complemented by investments in other sectors.

The Albania National Transport Plan does not represent either a feasibility study of all investment projects envisaged in the transport sector. It rather considers projects within a sub-sector, then sector perspectives and aims to define a global framework and priorities between them. The global framework means that trade-offs between projects are made with the objective to optimise the utilisation of the scarce financial resources available for investments in Albania. The framework also consists of selecting only economically feasible investments and of identifying and eliminating duplicate investments and "white elephants". The priorities are not function of the accuracy of the economic forecasts made to define them : if the forecasts happened to be too optimistic, the implementation of the projects should be delayed, but the priorities between them will remain the same.

The prioritisation of investment projects is done exclusively on the basis of economic criteria, namely the net present value from the discounting of the economic cash flows of engineering costs and net users benefits. No additional benefits were considered such as regional development, administrative or military communications considerations. These are questions which lie in the realm of political decisions, as well as the availability, or the priorities, of donor funding which may alter the economic project ordering in the implementation stage, and are thus beyond the scope of the present study.

A transport plan does not only consist of a plan to improve physical infrastructure, but of a transport policy and strategy as well as of an institutional and regulatory framework to achieve the desired objectives, which include maintenance of assets and improvement of their efficient utilisation. This is logical, considering that the application of appropriate policy

[2] The Consultant has not been able to have access to, but only reviewed a summary report received from the Government.

and efficient utilisation of assets can have a major, if not critical impact on the need for investment in physical infrastructure.

The Government decision, which the Consultant supports, to involve the private sector in the operation of ports and airports in Albania, which could in the future be extended to other sub-sectors such as pipelines or railways, poses the problem of deciding how the distribution of the investments recommended by the National Transport Plan between the Government and these private operators should be made.

For the transport systems which could be operated by the private sector in the future, the National Transport Plan recommends two main types of infrastructure investments :

- **Short term rehabilitation investments which are required to maintain for each of these transport systems a reasonable level of service**. These investments are also necessary to make the operation of the transport systems reasonably attractive and profitable for a private operator. Clearly these investments should be borne by the Government before a contract is negotiated for the operation of the concerned transport system with the private sector.

- **Investments which are required to increase the capacity of the transport system.** In this case, the type of investments required may significantly influence the selection of the entity responsible for the investment. Construction of new infrastructure should be, in most cases, borne by the Government, upgrading or re-planning of an existing infrastructure may be borne either by the Government or the private operator, and acquisition of more efficient operations control systems should be borne by the private operator. For these types of investments the Consultant used his best judgement to assign them to either the Government, or the private operator.

18.1 The road sub-sector

The present section gives an overview of the methodology used to prepare a prioritisation plan for the maintenance, rehabilitation, and upgrading of the national road network. This process is based on the utilisation of the TransCAD database by the HDM4 road strategy assessment model.

18.1.1 The road network

The road network utilised for the HDM4 analysis is the same as the one defined for the TransCAD analysis. It is to recall that this road network already includes all ongoing projects which are either under implementation, or to be completed by 2008. The ANTP road development programme coming out of the HDM4 analysis will therefore only include <u>new</u> projects, taking the projects mentioned above for granted.

18.1.2 Rehabilitation and upgrading options

The Consultant defined three main road upgrading levels as follows:

- ***Dualisation*** consisting in upgrading a two lane road to motorway standards.

- ***Strengthening*** consisting in upgrading a bituminised road by reconstructing its pavement.

- ***Paving*** consisting in upgrading unsealed roads to bituminous standards.

18.1.3 Road investment plan

The HDM4 input data relates to a 20 year road prioritisation program. The HDM4 Program analysis deals primarily with the prioritisation of a defined long list of candidate road projects into a one-year or multi-year work program under defined budget constraints.

The Consultant broke the investment plan into three successive periods as shown in Table ES- 4below. The Consultant considered the following budgetary constraints for each period: €20 million per year in the short term, €15 million per year in the medium term and eventually, €10 million per year in the long term. The Consultant indeed forecasts a continuous decrease in the budget allocated to road improvement works because: 1) the more the rehabilitation of the network progresses, the smaller the budget available for this type of works will be; 2) the GDP growth rate is forecasted to pace down.

Table ES-4: National Road programme

	Short term (2004-2008)	Medium term (2009-2013)	Long term (2014-2023)
Rehabilitation and upgrading works (total length in km)	672	546	120
Dualisation works (total length in km)	39	-	-
Paving works (total length in km)	59*	-	-
Total Cost (€)	**82,000,000**	**57,000,000**	**19,000,000**

It is of importance to note that the "total costs" presented in the table above do not include the costs of rehabilitation works for roads included in the short term or the medium term programme, as it was assumed that routine maintenance will be well performed on the road network in general and on the rehabilitated sections in particular. By 2023 almost every section of importance of the national road network (all the primary roads and the major parts of secondary roads) is recommended by the ANTP for rehabilitation.

The following Maps ES-7, ES-8, and ES-9 show respectively the locations of the road improvement works recommended by the Consultant in the short, medium and long terms.

At the present time only 25 % of the local road network is in a "maintainable" condition, which means that about 8,000 km of local roads needs to be rehabilitated. This effort represents a cost of several hundred millions of Euros which needs to be spread over a minimum period of 10 years. Such a programme needs to be carefully planned and prioritised. The Consultant recommends that a study be commissioned for this purpose. This study could extend to the urban road network as well.

The Consultant furthermore suggests including the feasibility studies dealing with the rehabilitation and upgrading of the secondary roads that are not part of the road improvement programme (coloured in grey in Map ES-9) into the Master Plan for local roads, which will set up priorities and annual investment requirements on local and rural road rehabilitation and improvement.

18.2 The road transport sub-sector

The Consultant recommends that an inter-city/international bus terminal be built in the short term near the railway station and outside of the Ring Road as proposed in the Tirana Master Plan. Not counting the cost of expropriation and other compensation, the cost of such a bus terminal varies between € 1.5 and 3.0 million depending on its size and on the facilities and services provided.

An inland depot to process and clear the containers and bulk cargo after their delivery at the Port of Durres is needed, as the port should not be used as a storage and handling area for containers. This inland depot could be implemented at the site of the present inland custom yard located between Tirana and Durres. The cost of such an inland container depot varies between € 1.0 and 1.5 million depending on its size and on the type and quantity of handling equipment provided.

Map ES-7: 2004-2008 Road development programme

Map ES-8: 2009-2013 Road development programme

Map ES-9: 2014-2023 Road development programme

18.3 The rail sub-sector

18.3.1 Potential market for the Albania Railroads

After the transition in 1990, the old system of modal allocation of transport flows was discarded and the railways went into a tailspin. The modal choice has therefore been very clear since 1990: road transport has been the overwhelming choice.

The Consultant prepared his forecasts of the passenger and freight transport demand in Albania at the year 2023 horizon. In order to visualise what they could mean for the Albania Railways, the assignment of the **whole** 2023 Origin-Destination matrices for freight and for passengers to the **existing rail network** was made as shown in Maps ES-10 and ES-11 below.

Map ES-10 shows that the maximum freight transport demand at the 2023 horizon is on the Fushe Kruje – Tirana – Durres – Elbasan route (total length 130 km). It further shows that long haul international transport demand to Montenegro does not seem to be an option for Albania rail.

Map ES-11 shows that the only location where there would be a potential demand for passenger transport by rail is the Tirana – Durres Metropolitan area. This transport demand is so high that there is no way to satisfy it by the extension of the present motorway capacity. The development of such a service was the subject of a proposal by General Electric, with an extension to serve the Mother Theresa International (Rinas) Airport. The Consultant reviewed the feasibility study of this project and considers that it is based on extremely optimistic traffic forecasts which, among others, assume that virtually all passengers flying out of the Rinas airport would ride on these new trains. The level of the proposed investments also seems excessive.

18.3.2 Recommended Plan for the Albanian Railways

On the basis of the market analysis above, the Consultant recommends the following main actions for the Albanian Railways:

1. <u>On passenger services :</u>
    - Interrupt in the short term all services except, between Tirana, Durres and Kavaje ;
    - Develop commuter type services between Tirana, Durres and Kavaje.

2. <u>On freight services :</u>
    - Interrupt all domestic services except on the Elbasan – Durres – Tirana line ; Develop services on the Elbasan – Durres – Tirana route adapted to the specific needs of shippers identified by a thorough market study ;
    - Develop collaboration with the Montenegro, Serbia and other European railroads in order to improve the international freight services on the northern line (Vore - Bajze).

3. <u>On infrastructures :</u>
    - Close as soon as the parallel road is completed (in 2011 as per the road plan discussed in section 1 above) , the Southern line (Vlora – Rrogozhina with the branch to Ballash)
    - Carry out minimal maintenance to ensure the usability of the line between Elbasan and Lin, on the Eastern line.
    - Close the section between Lin and Pogradec on the Eastern line.

Maps ES-10

Map ES-11

The analysis carried out by Scott Wilson (ongoing study of *Modernisation of Albanian Railways*) showed that HSH has the locomotive and rolling stock resources to immediately begin an hourly service between Tirana and Durres. The Consultant therefore strongly recommends initiating this service in the short term as it perfectly fits in the recommendations made above. The development of the HSH Business Plan will provide in a second stage indications on the way to better adapt this service to the commuter needs.

18.4 The port sub-sector

18.4.1 General recommendations on the port sector in Albania

On a 320km long shore line, Albania has four general cargo sea ports. International experience suggests that countries of the size of Albania can only afford one main general cargo sea port. A more detailed analysis of the activity of these general cargo sea ports shows they present some specificities and it would then seem logical to focus in the future the activities of these ports as follows:

- Shengjin : fishing port
- Durres : containers, general cargo and main ferry terminal
- Vlora : oil port and related industries
- Saranda: tourism port for ferries and cruise ships.

This specialisation would also eliminate the risk of duplicating large investments such as the construction of a new oil terminal for the port of Durres at Porto Romano while the same type of facility is considered at the port of Vlora as part of the AMBO project.

Moreover, the decision made by the Government of Albania to concede to the private sector the operation of the country ports has major consequences on the conditions within which the extension or rehabilitation of the four ports infrastructures and equipment should be financed. Generally the Consultant recommends that:

- The rehabilitation investments which are required to maintain for a reasonable level of service in the port or to maintain the safety conditions set up by international regulations should be borne by the Government before, or during the time the contract is negotiated for the operation of the concerned port terminal.
- Investments with are required to increase the capacity of the ports after their operation have been conceded to the private sector should generally be borne by the private operator.

18.4.2 The port of Durres

The Consultant foresees that the traffic at the port of Durres would reach 8.5 million tons by 2023. To reach such a traffic volume major efforts are required to improve productivity of the port operations and significant infrastructure and equipment investments would be needed. The Consultant recommends therefore first:

- The development of a new port master plan in the shortest possible time
- The definition of a strategy and action plan for inviting and selecting private operator(s) for operation of terminals

And then,

- The negotiation with the operator(s) of the rehabilitation and development investments which will be required in the medium and long terms to allow the port to reach the traffic level forecasted for 2023.

18.4.3 The port of Vlora

The Consultant believes the AMBO project represents a major opportunity for the port of Vlora and its region. It will strengthen one of the present vocation of the port : the handling of oil products traffic. This would very well integrate with the new power station project and,

together with the Free Trade Zone status granted to the port area, it could constitute the base for the development of an industrial development centre in Southern Albania.

The Consultant recommends therefore that the ongoing Integrated Infrastructure and Economic Development Study integrates the requirements of the AMBO project and develops a comprehensive master plan for the development of the infrastructure and other economic activities in the region. The study should determine the need for rehabilitation of the two existing piers and how the present cargo and ferry traffic should be handled. The Consultant believes that the cargo traffic (mainly cement, steel and food products) should be diverted to Durres and then transported to their final destination by road. He also recommends that the ferry traffic be diverted to Saranda.It is the Consultant understanding that the AMBO project will finance all port infrastructure works related to the petroleum products traffic as a private investment.

18.4.4 The port of Saranda

If Saranda is to become a port to receive the tourists coming by ferry or cruise ships to visit the southern region of Albania, significant rehabilitation works should be undertaken on the existing port facilities. Even if the operation of the port is privatised, it is unlikely that the concessionaire will accept to finance these initial works since the traffic will remain at a low level in the short term. The Consultant estimates that about € 2 millions will be required to carry these rehabilitation works. However their scope and their financing should be negotiated as part of the recruitment of the private operator for the port facilities.

18.4.5 The port of Shengjin

If the port is going to be dedicated to fishing boats, the main problem of the port of Shengjin facilities will be the sedimentation of its access channel which reduced its depth to 4.5 m. This may not be a problem for the present fishing boats which are all of small size, but it may prevent the acquisition of larger boats in the future. The Consultant recommends that the situation be reviewed in the next five years to decide whether to dredge the access channel closer to its 7.5 m original design depth.

18.5 The airport and civil aviation sub-sector

18.5.1 Updating the existing development plans

The Consultant first recommends that the existing plans (the Tirana international airport master plan and the Albania air traffic management plan) be updated no later than in 2010, or as specified in the Tirana Airport concession agreement. This update should be financed by the concessionaire, as it is in his interest to continue the development of the facilities he manages.

The Consultant believes that the involvement of the private sector in the development of the Tirana International Airport should be progressively extended beyond the management of the passenger terminal to cover all other airport facilities, including infrastructures. It means that if the traffic develops as expected, the investments required to handle it, will naturally be financed by the concessionaire, after appropriate feasibility analysis.

The development of the air traffic management systems could be financed either by the concessionaire, as part of the development of the Tirana airport facilities, or by a loan raised by the Government and paid back using the over flight fees it will generate.

18.5.2 Development of other airports and of domestic air transport services in Albania

Given the size of the country, the average income of its population and the development of the road network, the Consultant does not believe that domestic air transport could develop in Albania, except for taxi or chartered types of services which could be provided by specialised private companies. Furthermore, the concession agreement for the Tirana Airport passenger terminal includes a commitment by the Government that the airport will be

the only international airport in the country. All this means that the prospects for the development of the other airports in Albania are quite limited.

The new Kukes airport constitutes however a special case because it was offered by a foreign country to Albania which may feel insulted if the facility is not properly used. The Government also confirmed to the Tirana Airport Concessionaire that the Kukes airport will only be a domestic airport. Given the low level of activity in the region and its proximity from Tirana, the potential passenger traffic for this airport is almost nil. Furthermore, the climatic conditions in the Kukes region are less favourable than in Tirana. The new airport cannot therefore be used as a back up for the Tirana airport in case of bad weather conditions. In such a situation, the risk that the airport be used for smuggling goods into or from Albania, or for other illegal activities, would become quite real. As the northern part of Albania is one of the poorest in the country, it would be appropriate to try to take advantage of this infrastructure to boost regional economic development. An idea would be to study the possibility to create near the airport a high-tech industrial zone in which electronic equipment could be assembled, or other high value goods could be manufactured using the raw materials coming from the region (e.g. leather goods), by cheap local labour. Parts and finished products would be imported and exported by air. Such activities would make of Kukes a freight airport which should not contradict the commitment made by the Government in the Tirana airport concession agreement.

18.6 Inland waterway sub-sector

It is the Consultant's opinion that with the improvement of the national and rural road networks, the importance of these ferry services will be gradually reduced. The Consultant recommends therefore that minimum investments be made on the Koman Lake infrastructure in order to ensure the safety of this transport system until road transport could replace it. An amount of € 250,000 is considered sufficient for this purpose. However, this should be included in a package deal with the operators which would also include having them:

- undertake minimum works on their vessels to ensure safety,
- accept to enforce the security and safety regulations specified by MoTT,
- and pay for their license fee.

18.7 Investments required by the transport sector at the 2023 horizon

Although the investments to be borne by the Government to implement all the above recommended rehabilitation/development projects represents a total cost of €420 million.

19. INSTITUTIONAL ACTION PLAN

The establishment of a new institutional system for the Albania transport sector should be guided by the following general principles:

- Facilitation of the development of the sector
- Efficient use of scarce resource
- Fair business practices
- Long-term economic viability of transport service providers
- Adequacy of the Government involvement

In broad terms, the Consultant recommends the following institutional development strategy for the Albania transport sector:

- Limit the Government's role to policy making, sector regulation and performance monitoring ;
- Pursue regulatory, institutional and incentive mechanisms, which promote maximum private sector participation ;
- Develop and apply regulatory functions that ensure minimum safety and environmental standards, while allowing free market entry in general ;

- Limit the Government interventions to situations where market failure exists and cannot be solved by free market forces alone, provided the costs of such interventions are outweighed by their benefits ; and
- Promote the participation of all stakeholders in the transport planning and regulation process.

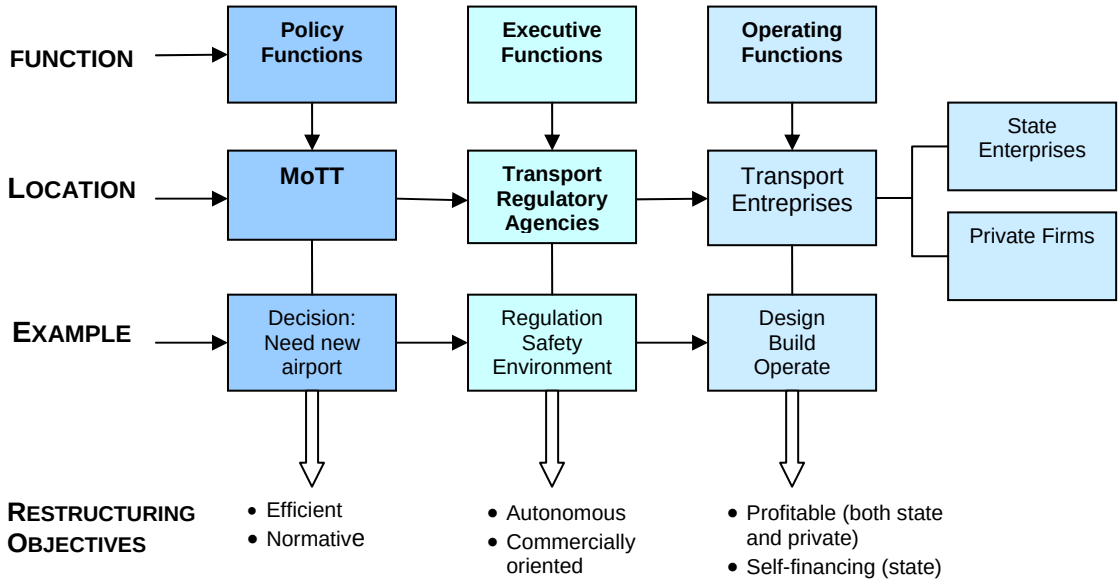
19.1 The organisation of the Ministry of Transport and Telecommunications

The Consultant recommends the following redistribution (figure ES-2 below) of the basic management responsibilities within the transport sector. In such an organisation MoTT would be responsible for policy formulation and transport sector oversight, balancing the interests of involved stakeholders as well as the economic, environmental, and social needs of the people and the country.

The MoTT recommended mission statement would therefore become to "*develop a transport policy and a framework which ensure that the transport sector is efficient, safe, accessible, sustainable and meets the needs of the country's economic development objectives and the social needs of the people.*"

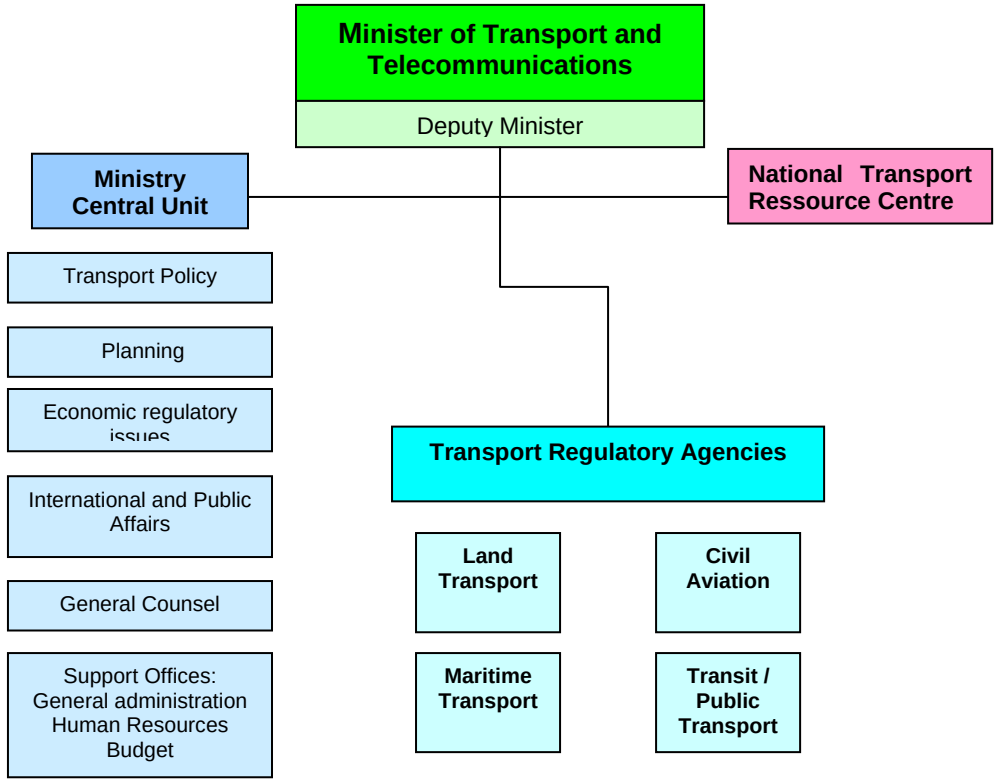
Moreover, each mode of transportation is different and requires mode-specific expertise which would be provided by each modal agency. Their mission statement would be to "*provide transportation systems and services within their respective mode that meet the needs of the people and country development objectives in accordance with MoTT policy and legislation*."

Figure ES-2: Basic Organisation of the Transport Sector



The general organisation recommended for MoTT by the Consultant is shown on Figure ES-3 below.

Figure ES-3: Recommended Organisation for MoTT



19.2 National Transport Resource Centre (NTRC)

The Consultant recommends that a specific executing agency within MoTT, as shown on Figure ES-3 above, and called the National Transport Resource Centre (NTRC), be put in charge of providing MoTT with the data and analytic tools to develop policies and strategies for the transport sector, including the monitoring and updating of the ANTP. It is therefore envisaged that the NTRC work program will be derived by end of 2004 from the completed ANTP.

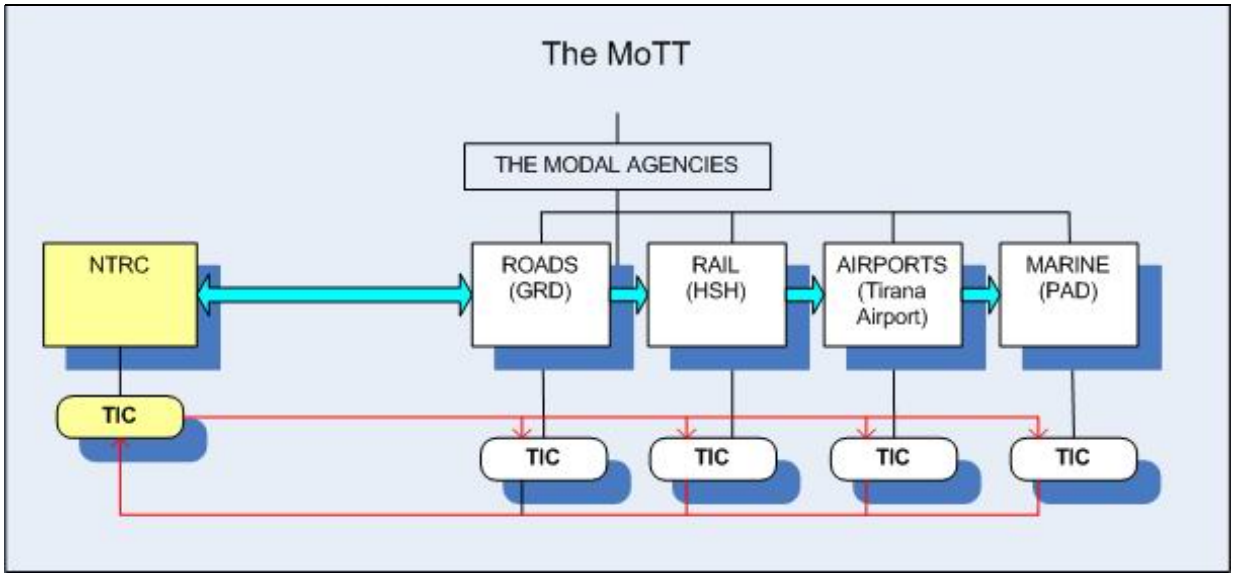
The Consultant generally proposes to assign NTRC the four following primary functions:

1) to maintain and update the transport sector data base for each mode of transport and data which would be common for all transport sector activities;
2) to function as a central repository of transport sector data and information, it would make the data available for Government agencies without charge and for private sector users on a fee basis;
3) to maintain and update the ANTP and associated investment programs;
4) and to make recommendations and assist the MoTT in revising and updating transport sector policies, regulations and institutional reforms.

19.3 Development of a National Transport Database

In addition to setting up NTRC, the Consultant also proposes the establishment of TICs (Transport Information Centres) at the central level within NTRC and in each of the main transport modal agencies/operators as shown on the figure below. Their organisation and the methods they use will be the same, but at a lower scale, as the ones used by the central TIC.

Figure ES-4 : Central TIC and modal TIC's



Their mission aims at:

- The establishment of a competent group of staff with the required skills, facilities, data, networking and funding, capable of maintaining a quality-controlled, spatial information system.
- The establishment of useful, map-based transport information for the main transport modes in Albania.
- The establishment of a national centre of competence for GIS in the transport sector.

TIC's main policies and methodologies:

- based on GIS
- simple to use ("easy in"), simple to access ("easy out")
- use appropriate technology
- use a "bottom up" approach (start simple, improve with experience)
- minimise costs

19.4 Reforms in the management of the road network

Four main reforms are recommended in the management of the road network:

1) The development and the maintenance of national and of local road networks should be under a single ministry; this means reversing an earlier decision ;

The Consultant indeed considers that the reconcentration of the management of the whole Albania road network under a single organisation would bring the following benefits:

- It will allow the development of consistent policy and programmes for all the roads in the country ;
- The same standards, contract documents and working methods will apply to all types of roads and will be perfectly adapted to the country socio-economic development objectives ;
- The co-ordination of rehabilitation programmes of local roads with national roads will avoid discontinuities in route improvements ;
- The reconcentration will minimise the per km overhead cost for the management of the road network ;

- As a single ministry will be in charge of the whole network, it will guarantee a fair distribution of the Government budget between the national and local roads ; and finally

There is little doubt that all these will result in a general increase of the quality of the country road networks.

2) Enhancing road maintenance by implementation of a Road Asset Management System (RAMS);

RAMS includes the five following basic components:

- Comprehensive information on the road network and its utilisation with :
  i. identification of all roads and of their as built main characteristics (location, length, typical cross section, type of pavement, main structures)
  ii. up to date information on the condition of roads, collected by at least one specific survey every year ;
  iii. up to date information on traffic volumes and proportion of heavy vehicles, measured by at least one counting campaign every year.
- The definition of basic road quality standards for each main category/ traffic volume class of road.
- The definition of standard routine and periodic road maintenance activities with adequate technical specifications and standard cost estimates.
- The selection of optimum implementation methods: procurement of works and supervision services from the private sector, utilisation of small contractors using labour intensive methods for routine maintenance, utilisation of larger contractors for periodic maintenance works… For each of these, standard contract documents should be developed.
- The Implementation of a quality control and evaluation system which provides feed back on all the above, in order to take into account all improvements suggested by experience.

The Consultant is convinced that without such a road maintenance system in place, donors will reduce their support to the rehabilitation of the Albanian roads.

3) Reorganising GRD and increasing its autonomy ;

Figure ES-5 here-after represents the organisation of GRD as recommended by the Consultant. The main functions and duties of each position in the organisation are shown on this figure.

This reorganisation aims at splitting the functions of “client” and of “service provider” which are presently merged and create confusion within the present organisation. The “client” function will be materialized by a Board in which road users and private road transport companies will be represented.

It is anticipated that most services (design, supervision, project management, etc.) and works (construction, maintenance, etc.) will be outsourced to the private sector.

4) Developing road maintenance funding policies and practices.

At the present time only 50 % of the 3,200 km of national roads and 25 % of the 11,000 km of local roads are in a “maintainable” state. The Consultant estimated the cost of proper maintenance of these roads at €45.2 million which represents 1.2 % of the country’s GDP or 4.0 % of the national budget. This is high, but not excessive. This amount could be generated by an increase of the retail fuel price by 10 Lek per litre or 10% of the current price.

Figure ES-5 (Figure 3-5)

In the long term, when all roads will have reached a maintainable state, an amount of about €90 millions would be necessary for the maintenance of these roads. However, the projected increase in taxes in line with the fuel consumption uptrend is estimated by the Consultant to be more than sufficient to provide the resources needed to cover the long term financial needs of road maintenance.

Finally, in Albania, where the Government budget is unable to secure the funds required to do proper road maintenance and where there is a need to explain to the road users that they have to pay a special levy for this specific purpose, it seems appropriatet to reserve the amount of money generated that way for the funding of road maintenance. It is therefore recommended that the Government of Albania approves the creation of a Road Fund and undertakes the necessary legal steps to establish it in the short term.

Some additional recommendations are also made for the improvement of the management of the road sector, including:

- Preparation of an updated Road Map
- Enforcement and control of the regulations axle load limits
- Revision of the classification of some roads

19.5 Road transport sub-sector

The Consultant's institutional recommendations for the road transport sub-sector are as follows.

- **Improve safety** by:
  - Enhancing the enforcement capacity of Ministry of Public Order and Ministry of Transport and Telecommunications on safety and traffic management issues;
  - Ensuring the quality and certification standards;
  - Ensuring that new transport infrastructure is built to meet safety standards; and
  - Launching periodically public awareness campaigns on safety issues.
- **Enhance transport stakeholders involvement** by:
  - first, including private sector representatives to the Road Council,
  - and, then, helping operators to structure themselves into professional associations in order to fight against the "atomisation" of the sector, and its negative consequences in terms of management of the system.
- **Charge trucks transiting through Albania:** with a reasonable road usage charging system and fully costed port and railway tariffs, transit traffic could be a valuable market for Albania's transport sector.
- **Privatise urban transport** by privatizing the last public bus line in Tirana and proceeding with concessioning the urban transport systems in secondary cities.

19.6 The rail sub-sector

The Consultant makes the following recommendations for the rail sub-sector:

- Finalising and approving the **Railway Code**
- Conditioning the award of subsidies to HSH to the preparation and careful implementation of a **detailed business and action plan**. The implementation of the pluri-annual plan and the achievement of the targets should be closely monitored by the HSH General Manager and by the Ministry. Periodic reviews of progress and problems

should take place and corrective actions should be decided on when differences between targets and achievements begin to emerge.

A key aspect of the recommended business plan is the development of a marketing strategy to capture the potential passenger and freight traffic identified by ANTP (see 18.3.1 above). The impact of this strategy on HSH financial situation should be properly estimated. The plan should also include other actions to streamline the organisation and minimise the cost of rail transport in the country.

19.7 The port sub-sector

The Consultant will make the following recommendations:

- As the institutional context of the port sub sector has drastically changed after the approval in 2003 of the **law on the port authorities**, the Consultant recommends drawing all the consequences of this law and take some other actions that are required to fully benefit from its impact concerning:
    - concessioning of the port operations,
    - staff training, financial management and revision of tariffs,
    - and development of port security.
- To develop the management systems for the maintenance of infrastructure and equipment. Maintenance should be indeed properly addressed in the concession agreements while the port authority should supervise the enforcement of the corresponding clauses.

19.8 Inland waterway sub-sector

The Consultant recommends, as a minimum, that the safety standards applied to all ports in Albania be immediately applied to all private operators on the lakes. This should be associated with some training of the personnel and maintenance of the vessels, all of this being made a condition for the renewal of their operation license.

Moreover, some clear rule on the granting of licenses by the Maritime Department of MoTT should be set in order to ensure that the safety standards are met by the operators and that the fees for the licenses are actually paid. The private operators should also be required to pay the operation fees which are used to fund the maintenance of the facilities done by the Water Equipment Service & Maintenance Enterprise. Some power should be given to this enterprise for the collection of these fees as well as for the verification of the validity of the licenses.

19.9 Environmental action plan

The implementation of the ANTP is likely to give rise to negative environmental impacts relating to:

- Construction/upgrade of fixed infrastructures, notably roads, and port facilities. These impacts should be properly addressed by:
    - conducting an Environmental Impact Assessment (**EIA)**, even if not required by law,
    - implementing mitigation measures and/or environmental procedures during construction and operating phases.
- Induced development of the transport sub-sectors, which will entail an increase of number and movements of means of transport such as road vehicles, ships and airplanes. The impacts arising from that source should be managed through regulations and non physical measures, such as setting up standards for fuel quality, promoting public transport, fuel pricing, etc.

The MoTT capacity in environmental management should be therefore reinforced by:

- Establishing an **Environmental Coordination Unit** (ECU) under the responsibility of the General Directorate of Land Transport in order to ease the management, the supervision and follow up of environmental evaluation processes of multidisciplinary issues.
- Developing **procedures for environmental impact assessment** of transport projects
- Incorporating environmental issues into **concession contracts**
- Elaborating an **Environmental Operational Manual** for road projects issued and used by MoTT, the road operators (contractors, supervisors and consulting firms), the NGOs and the public.
- Drawing up the **Action plan for Development of Sustainable Transport** (the terms of reference will be prepared by ECU).

20. NATIONAL TRANSPORT PLAN

20.1 Contents of the proposed National Transport Plan

Table ES-5 here-after summarises the Consultant recommendations for short, medium and long term actions. It is understandable that the Consultant's work on the ANTP identified and defined more precisely immediate, short term actions, while longer term actions consist mainly of continuation of the investments and institutional development programmes started during the short and medium term periods.

The Consultant's findings and recommendations have been prioritised on the basis of the following key considerations:

1) As the first priority, it is important for the Government to approve the ANTP as early as possible.
2) As a second priority, action needs to be taken on high priority issues, which are constraining and holding back development within individual modes of transport.
3) Thirdly, focus is put on urgent issues within individual modes of transport and then on institutional factors impacting the transport sector as a whole. Roads represent by far the most important mode and is discussed first;
4) Fourth, Albania needs to redraft its transport policy, reorganise its sector wide institutions and finalise ratification of international conventions and agreements, necessary for dealing with its neighbouring countries in cross-border and international trade, as well as required for the European Union accession process.

As it is now, the total cost for the Government of implementing the actions recommended by ANTP is about **€ 420 millions**. Investments and costs of the private sector come in addition to this total.

20.2 Institutionalisation of the National Transport Plan

The recommendations of the Consultant are twofold:

1) Updating of the ANTP

ANTP is a dynamic document which needs to be continually updated to respond, not only to changes in transport demand, but to supply side responses in meeting performance targets of operating licenses and/or action plans through management and operational improvements. An annual review needs to be undertaken of these changes. This review does not constitute a full updating of ANTP, but rather an assessment of progress to determine to what extent a more comprehensive updating is needed. It might be reasonable to assume that the physical part of the ANTP, the transport infrastructure development and

investment plan, would need to be updated every five years, in the absence of different recommendations from the annual performance reviews calling for an earlier action.

It is to be noted that policy, regulatory, institutional and management development actions cannot wait for the updating of the physical plan every five years, but needs to be undertaken on a continuous basis as a result of the annual performance reviews. The policy, regulatory and institutional framework would of course stay largely the same, but adjustments would be undertaken as warranted by these reviews.

2) Legal/Institutional Framework for the ANTP

It would not be advisable to enact the transport sector infrastructure development/ investment plan into a law by the Parliament, as the plan is a dynamic document, which will need continuous changes, and major revisions every five years. Rather, it would be advisable to have a more general law, which would require the Government to maintain a physical ANTP with associated investment programs and have them regularly updated. This law would be supplemented with directives by the Council of Ministers, which would specify in greater detail, how and by what agencies the updating of the ANTP would be undertaken.
Moreover, it will probably be necessary for the Government to review the legislation after the preparation of the ANTP has been completed to ensure consistency with the transport policy to be enacted, including coordination with the European Union transport policy and legislation. There will be a whole set of laws and regulations which will govern the transport sector. These are likely to be more important than the physical infrastructure development plan itself, as they will outline the basis for development, management and operations in the transport sector, whether private or public.

Table ES-5