

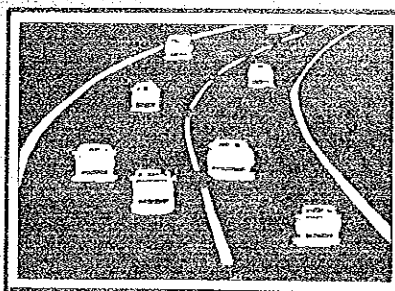
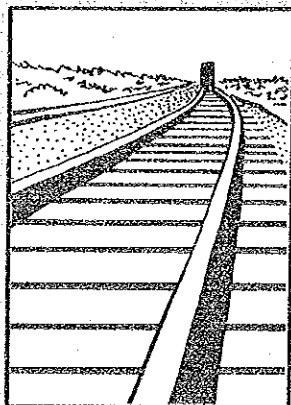
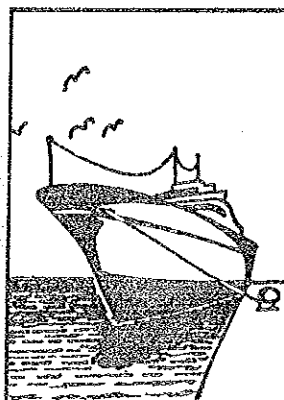
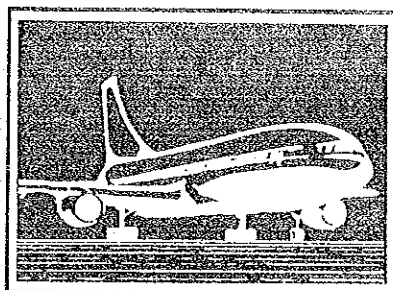
THE REPUBLIC OF POLAND
MINISTRY OF TRANSPORT AND MARITIME ECONOMY

STUDY
ON
THE NATIONAL TRANSPORT PLAN
IN THE REPUBLIC OF POLAND

FINAL REPORT

VOLUME 1

POLICY GUIDELINES FOR THE TRANSPORT SECTOR



DECEMBER 1992

JAPAN INTERNATIONAL COOPERATION AGENCY

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The following foreign exchange rates are applied in the study:

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1991		11,100
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国際協力事業団

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PREFACE

In response to a request from the Government of the Republic of Poland, the Government of Japan decided to conduct a master plan study on the National Transport Plan and entrusted the study to the Japan International Cooperation Agency (JICA).

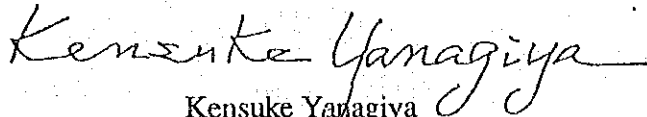
JICA sent to Poland a study team headed by Mr. MINORU SHIBUYA, Executive Vice President of Pacific Consultants International, four times between May 1991 and October 1992.

The team held discussions with the officials concerned of the Government of Poland, and conducted field surveys at the study area. After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to the promotion of the projects and programs and to the enhancement of friendly relations between our two countries.

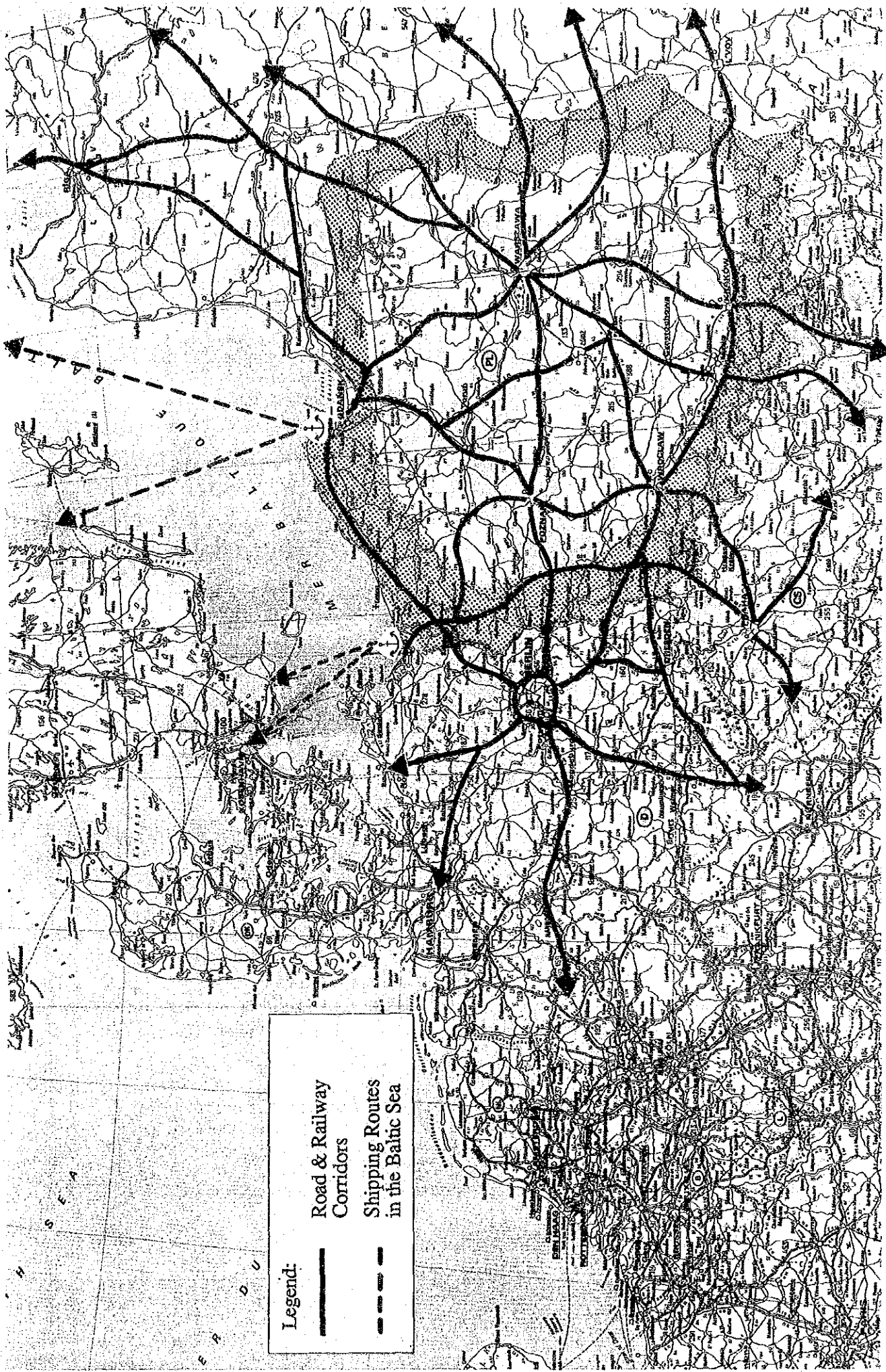
I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Poland for their close cooperation extended to the team.

December 1992



Kensuke Yamagiya
President

Japan International Cooperation Agency



Legend:

— Road & Railway Corridors

- - - Shipping Routes in the Baltic Sea

INTERNATIONAL TRANSPORTATION CORRIDORS CROSSING POLAND

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List of Abbreviations

AGR	European Agreement on Main International Traffic Arteries
ATS	Air Traffic Service System
BAA	Polish Border Authority
BO	Build and Operate
BOO	Build, Operate and Own
BOT	Build, Operate and Transfer
CIQ	Customs, Inspection, and Quarantine
CIS	Commonwealth of Independent States
CMEA	Council for Mutual Economic Assistance
CMK	Central Trunk Line
CSFR	Czechoslovakia
EATCHP	European Air Traffic Control Harmonization Program
EC	European Community
EEA	European Economic Area
GICA	General Inspectorate of Civil Aviation
GDDP	General Directorate of Public Roads
GUS	Central Statistical Office
ICAO	International Civil Aviation Organization
ITS	Institute of Automotive Transport
JICA	Japan International Cooperation Agency
LOT	Polish Airlines LOT
MIME	Ministry of Transport and Maritime Economy
PATA	Polish Air Traffic Agency
PCAB	Polish Civil Aviation Bureau
PKP	Polish National Railways
PKS	Transport Proper Enterprises
PMS	Pavement Management System
PPL	Polish Airports State Enterprises
SOE	State-Owned Enterprise
TEM	Trans European North-South Motorway
TMS	Traffic Management System
UIC	International Union of Railways

CHAPTER 1 INTRODUCTION

CHAPTER 1 INTRODUCTION

1.1 Outline of the Study

The overall objectives of the study are defined by the Scope of Work agreed upon in November 1990 between the Ministry of Transport and Maritime Economy (MTME) and the Japan International Cooperation Agency (JICA) as follows:

- (1) Prepare a Master Plan for the National Transport Plan which will effectively encourage the economic restructuring toward a free market economy and the integration of the Polish transport system into European and world systems from long term viewpoints (Chapter 2-7).
- (2) Propose Priority Implementation Projects and Programs in the short and medium terms based on the above Master Plan, bearing in mind the importance of efficient and effective management and operation in the transport of Poland (Chapter 8).

The study had been carried out under a close cooperation between the Polish and Japanese sides for the period of twenty months from May 1991 to December 1992: (1) analyses of the present situations from May to September 1991; (2) formulation of basic strategies and preparation of the national transport plan from October 1991 to March 1992; (3) further study on projects and programs from April to October 1992; and (4) finalization of the study from November to December 1992.

The Polish Steering Committee, headed by Mr. T. Kulikowski (MTME), and the Japanese Advisory Committee, headed by Prof. H. Nakamura (The University of Tokyo), guided the general directions of the study, under which the JICA Study Team and its Polish counterpart groups worked to fulfill the above objectives. The study results could form a base for the "Transport Polish Paper" which the MTME will prepare in the future on a revolving basis.

The Final Report comprises four volumes:

- Volume 1: Policy Guidelines for the Transport Sector
- Volume 2: The National Transport Plan (Main Text)
- Volume 3: Present Situations
- Volume 4: Projects and Programs

1.2 Roles Expected of the Transport Administration

Poland and its international environment have been in the process of dramatic changes. Under the Economic Transformation Program, Poland has been restructuring its economic system from the centrally controlled system to a market economy. The process threads a thorny path under the legacies inherited from the former regime, various views for the future and financial constraints on various policy measures.

Similar type of restructuring has been taking place in other Eastern and Central European countries as well as the Baltic countries and the newly emerged Commonwealth of Independent States (CIS). To the west, a huge single market of the European Community (EC) or European Economic Area (EEA) is scheduled to emerge immediately. Poland needs to reorganize its international economic ties from the former Council for Mutual Economic Assistance (CMEA) countries to the EC countries where market competition is keen. Poland has become an associate member of the EC with an

aim to become a full membership within ten years. Toward this end, existing economic systems need to be reformed for higher level of internationalization, liberalization and modernization.

The transport sector, as a part of the total economic system, needs to be restructured internally toward a market oriented economy through privatization, demonopolization and deregulation and also needs to be restructured externally toward international integration through legal, institutional and technical adjustment. Restructuring and modernization of the transport sector are vitally important for Poland to invite foreign direct investments and curb the continuing economic downswing by providing efficient transport infrastructure and services.

In this context, transport administration should play an important role. There is a great gap between the confused existing transport systems and future desirable transport systems. The accumulated financial constraints and inherited legacies make it extremely difficult to fill up the gap, coupled with the inexperienced transport administration to tackle this unprecedented event toward a market economy. The Ministry of Transport and Maritime Economy (MTME), therefore, should steer the transport sector step by step in a desirable direction.

The issues that the MTME faces are of multifaceted and sometimes contradictory nature: efficiency and unemployment, growth and environment, liberty and equality, and regulation and deregulation. The attainment of any one of these objectives necessarily involve a partial sacrifice of another. The emphasis placed on these various objectives has differed among societies, and for each society the emphasis has changed over time ("Comparative Economic Systems" by Prof. David W. Conklin). The MTME needs to monitor the market, formulate policies and programs based on comparative analyses, and introduce policy measures to the market with a view to approaching to desirable goals set from time to time. The expected roles of the MTME in the new regime, thus, differ from those expected in the old regime to a great extent. They are more complicated, sensitive and contradictory.

**CHAPTER 2 ESSENTIALS FOR NATIONAL
TRANSPORT PLANNING**

CHAPTER 2 ESSENTIALS FOR NATIONAL TRANSPORT PLANNING

2.1 Toward a Market Economy

The transport sector is important in providing transport services to every branch of the national economy as well as people of the country. The transport market has different characteristics with other economic sectors mainly due to its public nature and inclusion of such factors of market failure as monopoly, economy of scale, and external diseconomies. Because of these characteristics, governments of many countries in the market system have been involved in guiding and controlling the transport market, particularly in terms of railways.

Poland has introduced a number of new laws and amendments since the beginning of 1990 for restructuring the transport sector adaptable to a market oriented economy. Most of these legislative measures emphasizes privatization, demonopolization and deregulation aiming to expedite the transformation. However, it is also true that sudden introduction of drastic changes has caused confusion across the transport market, sometimes causing even chaotic situations, for example, in the inter-city bus system and air transport markets. A general problem structure is illustrated in Fig. 2.1.

The MTME needs to develop a long term transport policy toward the 21st century with a focus on the transition to a market economy and the Polish integration with the EC. A stepwise approach would be essential to this end by taking account of possible realization of policy objectives, development of transport demand and financial constraints.

Rationalization of the transport sector would come first for streamlining the redundancies and improving inefficiencies inherited from the past. For rationalization, a prime emphasis should be placed on clarification of ownership, establishment of cost accounting system and reduction of employment. Clarification of ownership coupled with asset evaluation is indispensable for accurate cost calculation. Cost accounting system should be reformed for identifying the exact sources of profit and loss. Redundant employment should be curtailed, while necessary retraining should be given to the remaining labor force.

Selective modernization needs to be introduced simultaneously with or following the rationalization. Modernization programs and projects of primary importance need to be identified and screened by taking account of Polish integration with the EC, economic and financial effectiveness, and availability of financial resources. Attention should be paid to the maximum utilization of existing assets. It is envisaged that government support is needed to foster international competitiveness of transport industries as well as to meet environmental requirements depending on the circumstances.

Under the circumstances, institutional as well as managerial settings should be reformed to assure maximum possible return on investments before new transport investments are implemented. Meanwhile, efforts should be made to establish a system to raise funds for new transport investments. This is because economic development could not be realized without adequate transport investments, international transport development in particular.

A long term national transport policy needs to be established to ensure gradual but uninterrupted progress toward a highly efficient and effective transport system which is compatible with that of the EC.

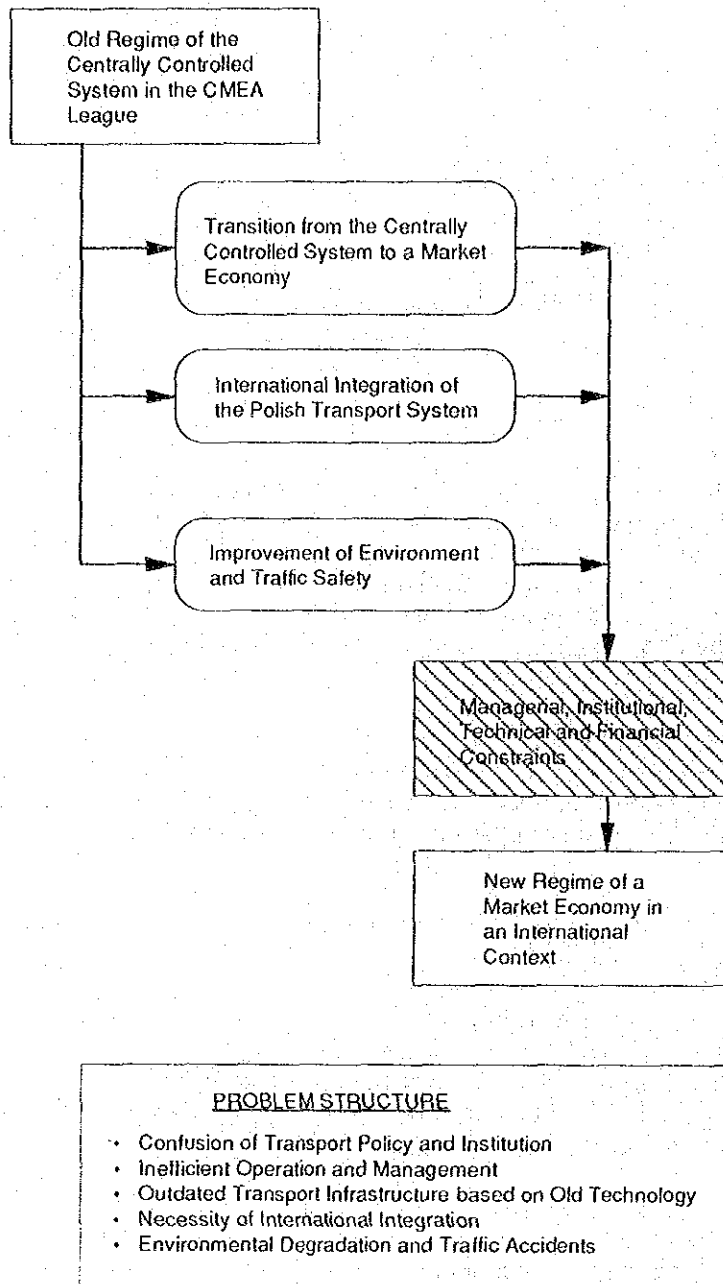


Fig. 2.1 Problem Structure in the Transition from Centrally Planned to Free Market Economic Structure

2.2 Return to the International Community

Poland is located at the international crossroads of the east-west and north-south transport corridors (Fig. 2.2). These corridors are important not only for Poland but also for the European region as a whole. International transport demand to transit the Polish territory is expected to increase in the long run in keeping pace with the progress of economic restructuring of CISs as well as the East and Central European countries. To take this locational advantage, Poland needs to improve border crossings in every direction although transport corridors to various directions should be developed selectively by stages through careful observation of traffic demand.

The transport policy needs to be developed with a focus on the country's program to join the EC and the resultant requirements for the transport sector. Transition period from the associate member status to full membership is expected to be ten years, during which the Polish transport sector is required to comply with:

- (1) issuance of license based on professionalism, reputation and reliability;
- (2) licensing in place of quotas for international transport services;
- (3) permission of cabotage transport to member countries;
- (4) liberalization of pricing;
- (5) unification of cost sharing system of transport infrastructure;
- (6) unification of social (working) conditions;
- (7) unification of vehicle standards;
- (8) unification of environmental regulations; and
- (9) improvement/development of transport infrastructure.

Most of these conditions apparently coincide with those for Poland's restructuring to a market economy and social needs including environmental protection. Based on the transport policy supporting the Polish integration with the EC, programs for achieving the target needs to be developed by taking account of phased removal of the likely constraints from time to time. Immediate actions should be taken to rationalize existing systems and remove obvious bottlenecks with internationalization, facilities and procedures for border crossing in particular. Permission of cabotage transport needs to be carefully programmed by taking account of the competitiveness of the Polish carriers.

"Unification of environmental regulations" and "improvement/development of transport infrastructure" should be programmed in the medium/long term perspective because a huge amount of capital is required. Most of the environment cost is to be borne by the private sector mainly due to the replacement of aged vehicles or installation of anti-pollution equipment in accordance with the regulations. Financial assistance and taxational privilege would be required for accelerating the attainment of higher standard of environmental protection.

Role of air transport should be emphasized for encouraging the international integration. The existing regulations which distinguish "domestic" with "international" air transport services need to be revised so as to provide convenient communication to main cities of other countries from Polish regional airports.

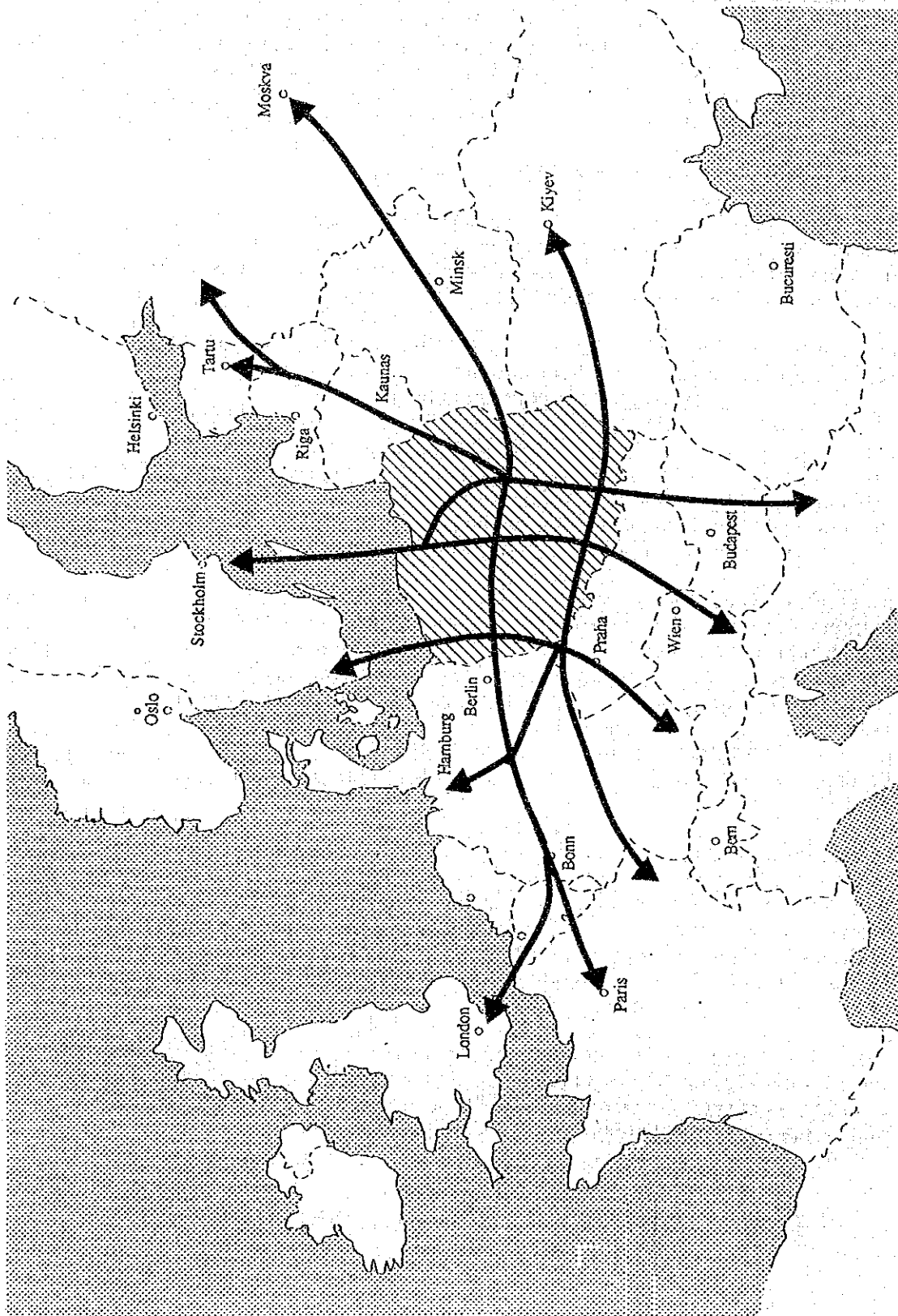


Fig. 2.2 East-West and North-South Transport Corridors

2.3 National Development based on Regional Characteristics and Potentials

Poland had a population of 38.2 million in 1990 and they were distributed over the land of 312,683 square kilometers with a relatively low population density of 122 persons per square kilometer. Katowice urban agglomeration had the largest population of 2,267 thousand (6.0% of total population), followed by Warsaw of 1,655 thousand (4.3%), Lodz of 852 thousand (2.2%), Krakow of 748 thousand (2.0%), Gdansk agglomeration of 716 thousand (1.9%), Wroclaw of 642 thousand (1.7%) and Poznan of 589 thousand (1.5%) in 1989. These figures show that population was relatively evenly distributed across the country (Fig. 2.3).

It is expected that this pattern of population distribution will not be greatly changed for the future due to the low rate of population growth and high rate of urbanization already achieved in the past, although Warsaw will attract more population in the future depending on the increasing industrial location and diversification of services sector.

In improving inter-regional linkage, first priority should be given to improvement and development of highway network because road traffic dominates short/medium distance trips and is most efficient to serve the areas of relative small population and density. Domestic railway and air transport services need to be developed in conjunction with international services.

In intra-regional transport, maintenance and upgrading of secondary and tertiary roads should not be neglected. Due to lack of funds of local governments, conditions of local roads have rapidly been deteriorating, not to mention the low rate of paved surface. To cope with the growing motorization, pavement rate should steadily be improved, particularly in the regions along the national border where pavement rate is extremely low.

2.4 Environment and Traffic Safety

Motorization of Poland has steadily been growing. Total number of vehicles increased to 9,845 thousand in 1991 from 5,496 thousand in 1980 with an average annual rate of growth of 5.4%. Passenger car has shown the highest rate of growth of 8.9% to 6,112 thousand in 1991 from 2,383 thousand in 1980. In 1991, car ownership rate per thousand population reached 159 for the nation as a whole and almost 300 in Warsaw. Major cities of Poland have higher car ownership rate than the national average. Rapid growth of motorization contributes to the deterioration of the environment. Traffic safety belongs to main problems as well; accident ratios place Poland at the bottom of the list of European countries.

In terms of environmental protection, primary attention should be paid to the adjustment of existing Polish conditions and regulatory framework to the standards adopted in the EC. The adjustment will take many years because of a large number of vehicles with lower environmental standards. A well prepared adjustment program will be essential for fulfilling the goal, including the following actions:

- (a) developing a basic policy to improve the environment including environmental regulations of domestically manufactured and imported vehicles;
- (b) establishing a staged program for adjusting the Polish level of exhaust gas and noise to the EC standards through collaboration of related agencies;
- (c) improving and strengthening inspection, enforcement and monitoring system to assure compliance with the adjustment program; and
- (d) introducing traffic management system in major urban centers, Warsaw city in particular.

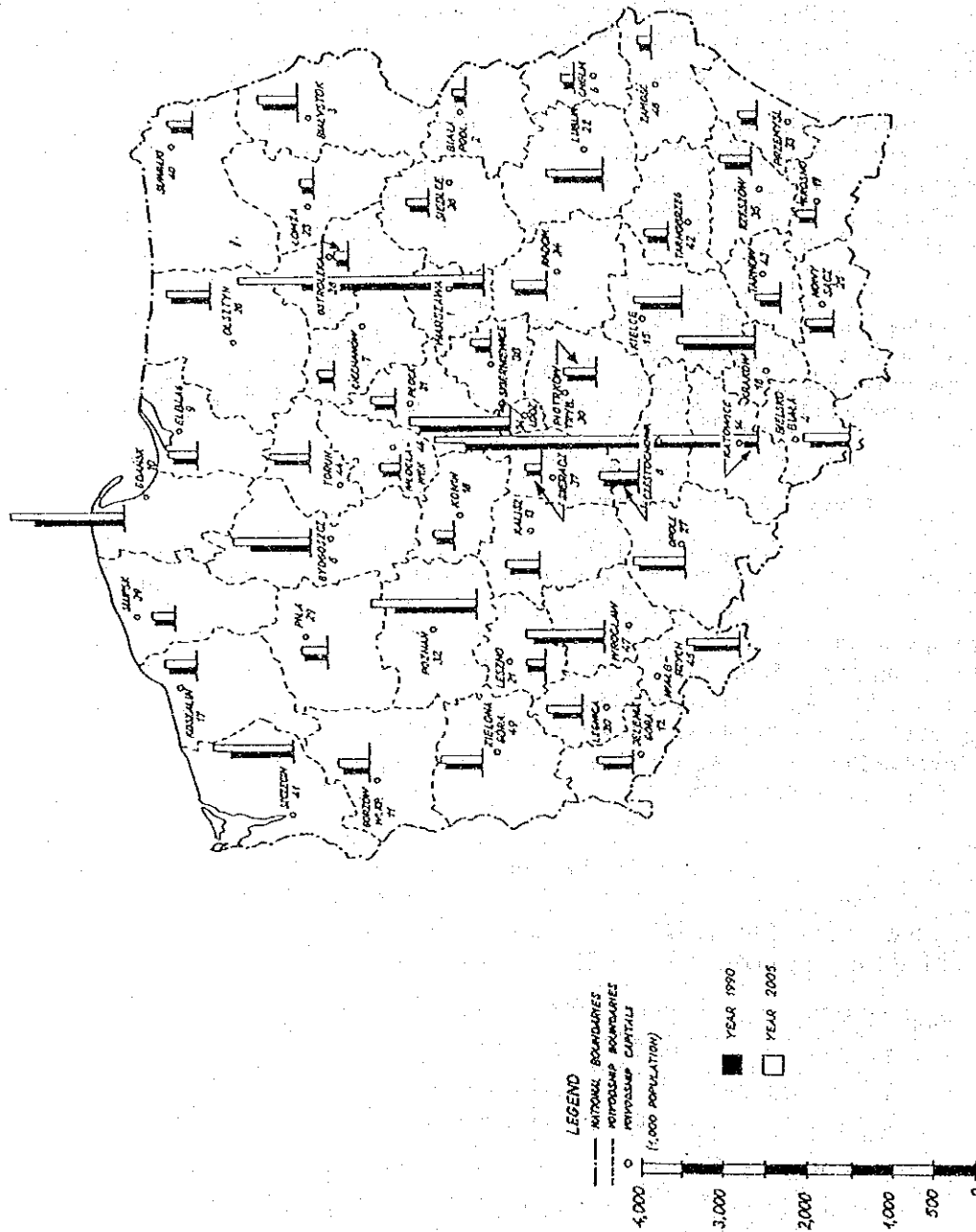


Fig. 2.3 Urban Population Change: 1990 - 2005

Traffic safety measures should also be improved from a view point to conforming with the EC practices so as to ensure continuity of safety regulations and practices across the border. This is especially true for standards of roads, traffic signs and road markings. Safety standards of vehicles should also be improved particularly for aged vehicles by introducing stricter inspection and conditions for road worthiness.

However, attention should be paid to the fact that traffic safety can not be improved merely through harmonization of standards, better roads and traffic engineering measures, but, among other things, through education and enforcement under the concerted efforts of the related agencies. Fragmented responsibilities among government agencies including MTME, Ministry of Education, Police and local governments should be coordinated and integrated to best achieve the safety target. As in the case of environmental protection, basic policy and staged program for improving traffic safety need to be developed, coupled with the establishment of reliable and useful accident statistics.

For the purpose of improving environment and traffic safety, roles and functions of the Institute of Automotive Transport (ITS) should be augmented.

**CHAPTER 3 IMPORTANT ROLE OF THE
MINISTRY OF TRANSPORT AND
MARITIME ECONOMY (MTME)**

CHAPTER 3 IMPORTANT ROLE OF THE MINISTRY OF TRANSPORT AND MARITIME ECONOMY (MTME)

3.1 Importance of an Integrated Approach

The MTME is expected to play a central role in restructuring the Polish transport sector from the present confused transitional situation to the integration with the EC in about ten years. The restructuring, however, needs to be achieved under a number of constraints: (1) lack of adequate information system to monitor the transport market; (2) insufficient number and competence of staff; (3) various legacies obstructing the restructuring; (4) shortage of funds; and (5) absence of consensus on policy measures to be introduced.

The MTME needs to develop the restructuring program toward the market economy by taking account of all modes of transport. Integrated transport approach, instead of a modal approach, is very important in this regard to attain the maximum effectiveness under the various constraints. Limited financial resources need to be allocated to each mode of transport by taking account of relative importance of each mode in terms of compliance with the market demand and effectiveness for international integration.

Polish transport demand indicates that road transport has rapidly been growing in recent years while railway transport has been declining. Increasing role of road transport is evident in the EC as well particularly for international transport in the Community: road cargo transport showed an annual average growth rate of 10.5% during 1986-1989, and in 1989, road transport had the highest market share of 58.6% in cargo transport. This implies that more importance should be given to road transport in place of railways to which the government has been giving greatest support. Modernization and quality improvement of roads and road transport should be a prime concern for the progress of motorization and internationalization.

The government has introduced a series of policy measures for restructuring the Polish National Railways (PKP) including separation of non-transport enterprises which used to be attached to PKP, rationalization of employment and investigation on the closure of unprofitable lines. These measures are highly appraised because pressing issues to be addressed are streamlining the enlarged railway systems so as to make them more responsive to market demand. Regarding internationalization of railway systems, there seems to be a number of issues to be coordinated among countries. Most of the railways in every country has concentrated their efforts especially on the domestic market. Due to the lack of coordination between railways in neighboring countries, it will take several years to make international railway services competitive with international road haulage. The government and PKP need to make efforts to strengthen the international coordination with neighboring countries, Germany in particular.

Polish ports mainly handle bulky commodities with little handling capacity of general cargoes in the form of containers and ro-ros. Polish ports need modernization of facilities if they wish to be included in the international logistic network. It is very likely that if port facilities and systems are not modernized, a large part of the international container transport will move to land transport which connects major international ports along the North Sea with Poland. The MTME needs to develop a policy on the Polish port development by taking account of the roles of Polish ports expected to play in the Baltic League and international transit services to inland countries and CISs under market principles.

The MTME also needs to prepare basic policies for air and inland water transport by taking account of their advantages and disadvantages in comparison with other modes of transport.

3.2 Improvement Directions of Transport Sectors

Based on the relative comparison of the roles of each mode of transport, a long term policy for the transport sector needs to be developed with a focus on the optimum national resource utilization. Rationalization, selective modernization and the maximum use of existing assets should be the primary concern for every mode of transport. Improvement directions of each mode of transport could be summarized as follows:

- (1) General Policy:
 - (a) enhancement of the total effectiveness of resource uses in the transport sector based on market principles
 - (b) encouragement of Polish internationalization especially in relation with the EC
 - (c) improvement of environment protection and traffic safety measures.
- (2) Railway Transport Policy:
 - (a) steamlining of the enlarged railway systems to make them adaptable in a market economy
 - (b) preparation for market oriented economy through vesting more economic autonomy
 - (c) improvement of competitiveness with other modes of transport in selective market segments.
- (3) Roads and Road Transport Policy:
 - (a) modernization and quality improvement of roads and road transport
 - (b) development of road financing system based on user charges
 - (c) liberalization of road transport market in accordance with the EC policy
 - (d) improvement of environment protection and traffic safety measures.
- (4) Ports and Maritime Transport Policy:
 - (a) development of basic government policy for ports and maritime transport, particularly in relation with competition with land transport
 - (b) rationalization and modernization of ports and maritime transport to attract more ship calls
 - (c) encouragement of international transit transport through Polish ports.
- (5) Airports and Air Transport Policy:
 - (a) development of basic government policy for airports, particularly for major commercial airports
 - (b) development of basic government policy for domestic and international air transport services
 - (c) encouragement of business alliance with international airlines.
- (6) Inland Water Transport:
 - (a) careful observation on the development trend of inland water transport with a focus on environment and capacities of land transport from the long term perspective.

3.3 Various Roles expected in a Transition Period

The phrase "enhancement of the total effectiveness of resource use in the transport sector" under the general policy includes various policy measures to cope with the characteristics specific to the transport sector as well as to each mode of transport.

"Effectiveness of resource use" can generally be best achieved through market mechanism where prices are determined by demand and supply. This rule is generally accepted by international financial institutions and western countries. However, this rule might not necessarily be applied to the transport sector, particularly of the countries now under a restructuring process from the centrally controlled system to a market economy. This is mainly because these restructuring countries have not established clear distinction of ownership between the state and enterprises on which market principle is based. Lack of supporting facilities for privatized companies is another reason from the economic point of view and continued subsidization for public services during the old regime is another reason from the social point of view.

First, the MTME needs to remove legacies which disturbed the "effectiveness of resource use" in the old regime:

- (1) obscure distinction of ownership between the state and enterprises;
- (2) lack of a reliable cost accounting system;
- (3) lack of reliable data and information system of the transport market; and
- (4) lack of scientific project evaluation systems.

The MTME, then, needs to develop the framework to encourage fair competition in a market economy. Some policy measures introduced for liberalization until now seem to have gone ahead of the capability of enterprises while shortage of funds seem to have delayed development of the schemes to support privatized enterprises. Major roles of the MTME in a transition period to a market economy are required in:

- (1) monitoring and guiding the transport market for encouraging fair competition;
- (2) promoting liberalization (privatization and deregulation) by way of providing proper supporting facilities;
- (3) modernization and quality improvement of urgently needed transport infrastructure; and
- (4) establishment of special funds earmarked for the transport sector.

3.4 Policy Measures adaptable in the Transport Market

Policy measures should be well prepared to guide the transition from the centrally controlled system to a market economy. Due to the introduction of sudden liberalization in 1990 and lack of accompanied policy measures, some of the transport markets are in a chaotic situation where government guidance seems obscure.

Government intervention in the transport market is unavoidable even in the countries of market economy because there are several critical factors for "market failure" which include the existence of monopoly, economy of scale, and external diseconomies. In view of the abundant legacies inherited from the old regime, government intervention into the transport market is needed to a greater extent in Poland for the purpose of creating a fair competitive market.

However, it should be reminded that there is no guarantee that government intervention will solve every problem because any policy measures are always accompanied by trade-offs and might cause distorted resource allocation in the society. Consequently, government intervention into the transport market should be closely linked with thorough monitoring of the market.

Policy measures adaptable in the transport sector can be summarized as follows:

- (1) Policy measures to cultivate the ground of market economy:
 - (a) ownership change and privatization
 - (b) demonopolization.

Most of the Polish legislation has been amended toward this direction. However, contrary to the expectation, demonopolization has not taken place, for example, in maritime and air transport markets. Privatized companies are in a danger of bankruptcy as can be seen in the road and maritime transport sectors. Policy measures to effectuate free and fair competition are needed including promoting rationalization of the target enterprises, rescheduling of privatization programs and encouraging new entry to markets.

- (2) Policy measures to meet demand and supply
 - (a) entry and exit regulations
 - (b) price regulations
 - (c) service regulations

Most of these regulations are still valid in railway and bus passenger transport markets although most of them have been lifted in other transport markets. Regulated public transport is apt to be damaged by cream skimming behavior of non-regulated transporters in a free competition market. Economic deregulation needs to be accelerated in railways and unfair behavior should be regulated in bus and taxi passenger transport as well as trucking industry.

- (3) Policy measures to relieve financial burdens
 - (a) subsidies
 - (b) tax privileges
 - (c) government guarantee for borrowing

In principle, these policy measures are preferable to be eliminated because they sometimes tend to distort optimum resource allocation. However, they should be well programmed in Poland with a view to facilitating structural reform and modernization of transport enterprises to be adaptable to a market economy as well as prepared for the Polish integration with the EC. Establishment of special funds for the transport sector and introduction of concession financing are important in this regard.

(4) Policy measures to protect social needs

- (a) regulations on environment
- (b) regulations on safety

A staged program to strengthen these regulations should be developed by taking account of both the timetable for the integration with the EC and the possibility of its fulfillment. Monitoring system is indispensable for understanding the exact situations of these matters to formulate policies and plans.

3.5 Refurbishment of the Ministry's Administration

In order to fulfill the expected roles in a market economy, the MTME needs to strengthen its functions in terms of: (1) policy formulation and planning; (2) budgeting and introduction of policy measures to the transport market; and (3) monitoring of the transport market (Fig. 3.1). These three key functions constitute a management cycle of the MTME by closely linking this year's monitoring to the following years' policy formulation and planning.

Policy formulation and planning should include both medium/long term transport policy guidelines on a revolving basis and short term action program which is derived from the medium/long term policy guidelines as well as the results of continuous market monitoring. Main objective of the policy guideline is to create a framework under which transport operators can provide efficient and effective services in a market economy and to adjust the existing transport system to one compatible with the EC's basic policy. It is recommended to organize a "Transport Policy Council", an advisory body to the MTME, for formulating the policy guidelines.

Budget is a means of the MTME to translate the action program into actual implementation while policy measures are direct involvement of the MTME into the transport market for fine tuning. Monitoring and information system is a prerequisite machinery for preparation of effective budget and introduction of relevant policy measures. Detailed proposals for budget and policy measures should be drafted by modal units and their finalization should be realized by functional units through repeated coordination and adjustment.

Monitoring and information system of the transport market is far more important in a market economy than in a centrally controlled system. However, most of the data and information of the transport sector are currently reported to the Central Statistical Office (GUS) as it used to be in the former regime. In addition, some of the statistics were canceled due to the shortage of GUS budget. Transport information system needs to be developed, coupled with monitoring system which enables market investigation from time to time.

Current organization of the MTME needs to be reorganized to fulfill the above roles. It is recommended that the new organization be a mixed type of modal and functional departments (Fig. 3.2). Modal departments should be a basic management unit which follows a yearly management cycle of "plan, do and see" phases of each mode of transport. Functional departments should be responsible for coordination and integration across the modal departments from respective functional point of view. Introduction of modal units will necessarily increase the required number of staff in the MTME. Staff increase could be made possible by incorporating General Directorate of Public Roads (GDDP) and General Inspectorate of Civil Aviation (GICA) as well as some staff from PKP and port authorities.

[For details, refer to Main Text, Chapter 3, Section 3.8]

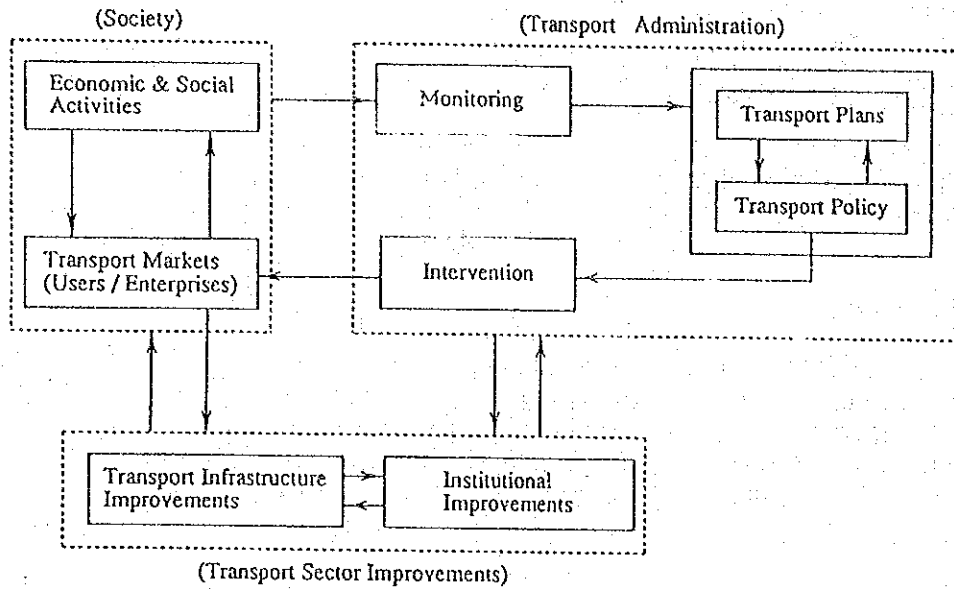


Fig. 3.1 Markets and Transport Administration

Transport Issues	Mode	Railway	Road Infrastructure	Road Transport	Sea Transport	Inland Waterway Transport	Air Transport	Urban Transport	(Functional Departments)
Policy Formulation and Planning Matters									Dept. of Transport Policy and Planning
Financial and Economic Matters									Dept. of Economy and Finance
Technical Matters									Dept. of Technology
International Matters									Dept. of International Cooperation
Legal Matters									Dept. of Legal Matters
Personnel Matters									Dept. of Personnel and Training
Internal Administration									Office of Administration

(Modal Departments)

Dept. of Rail Transport GDDP Dept. of Road Traffic Administration Dept. of Sea Transport Dept. of Air Transport Dept. of Urban Transport

Fig. 3.2 Reorganization of the MTME

**CHAPTER 4 POLICY GUIDELINES FOR
DEVELOPING INTERNATIONAL
TRANSPORT**

CHAPTER 4 POLICY GUIDELINES FOR DEVELOPING INTERNATIONAL TRANSPORT

4.1 Improvement of Border Crossings

The number of international road traffic which crossed the Polish border has shown a tremendous increase during 1988 - 1991 (Table 4.1). The western border achieved almost a doubling growth rate during the period, sharing 62.8% of total border crossings in 1991. The rapid growth of border crossing traffic caused longer waiting time at border crossings. Time consuming border crossings are greatly hindering the efficiency of international haulage of cargo and passengers.

Table 4.1 International Vehicle Traffic

Border	unit: 1,000 vehicles/year					1988-91
	1988	1989	1990	1991	(%)	growth
East	580.3	1,056.7	1,355.9	2,008.8	(8.4)	51.3
South	1,639.4	3,363.0	4,079.6	6,646.9	(28.0)	59.4
West	1,938.3	3,593.7	7,205.1	14,913.8	(62.8)	97.4
North	109.7	156.1	177.6	192.6	(0.8)	20.6
Total	4,267.7	8,169.5	12,818.1	23,762.1	(100.0)	77.2

Source: Polish Border Authority (BAA)

Main issues at border crossings (Fig. 4.1) are: (1) capacity shortage of roads, parking lots and customs offices; (2) shortage of staff; (3) complicated and duplicated documentation practices; and (4) inefficient inspection and customs clearance. These bottlenecks need to be immediately removed.

Possible measures to improve these issues would be: (1) simplification of bilateral border crossing agreements; (2) development of efficient combined transport by railways to avoid road border crossings; (3) transfer of customs declaration duties from border stations to inland destination stations; and (4) improvement of existing facilities and procedures. At the moment, however, it is still uncertain of the timing when the first and the second solutions mentioned above could be viable. Realistic solutions would be a combination of the second and third solutions. It should be reminded that when Poland becomes a full member of the EC in ten years, most of the customs clearance on the western border will become unnecessary. This implies that capital intensive measures on the western border should be avoided as much as possible.

Measures for improving border crossings include:

- (a) establishing a staged improvement program of border crossings with the cooperation of MTME, Voivods, Ministry of Finance and Polish Border Authority
- (b) initiation of first stage improvement program with an emphasis on improving most serious bottlenecks of border crossings
- (c) extension of the improvement program for every direction depending on the careful monitoring of traffic situations

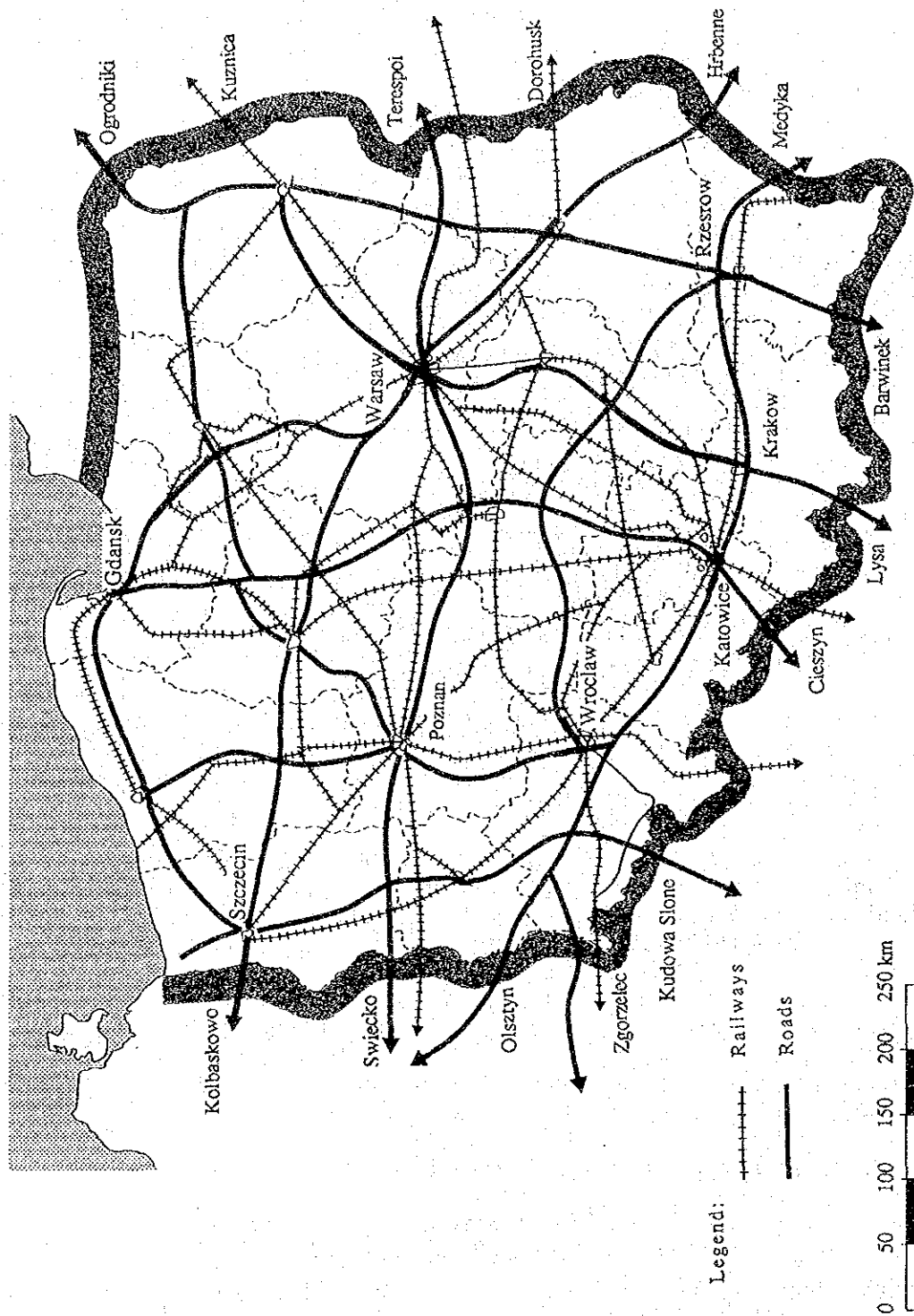


Fig. 4.1 Major Transport Corridors and Border Crossing Stations

4.2 Efficiency Improvement of International Cargo Transport

In the former regime, almost all international cargo consisted of bulky cargo and heavy industrial products which were carried mainly by railway and maritime transport between Poland and the CMEA countries. Although bulky cargo still share a large part of the Polish international freight, Poland has been facing a diversifying international cargo transport, particularly general cargo with the western countries, since the economic transformation in 1990.

Poland needs to improve and develop the general cargo transport system, namely containers, which are efficient and compatible with the prevailing western logistic practices. Because of the relative high value, container cargo requires quick, flexible and reliable transport services. A large part of international containers to and from Poland is currently carried by trucks mainly due to the under-development of container transport by sea and rail.

PKP has started combined transport services between railways and trucks on a weekly basis between Hamburg and Warsaw/Gliwice in cooperation with Hamburg Port Authority and German forwarder. The container service has a potential to attract more containers if bottlenecks at border crossing stations by road are improved and container handling systems at ports are changed.

In a short term perspective, container transport should be improved with a focus on: (1) improvement of road border crossing facilities and procedures; (2) improvement of access roads to container terminals in port areas; (3) improvement of container handling systems at ports, Szczecin Port in particular including the port ferry terminals; and (4) growing international forwarders based on rail transport as planned by PKP.

In the medium/long term perspective, combined transport system between different modes of transport should be developed by taking account of not only Polish international transport but also international transit transport through Poland. Absorbing international transit transport is deemed vital for the future development of Polish ports.

These measures will greatly contribute to integrate the Polish transport system into global logistic systems.

Free competition among transport means should be encouraged to force every mode of transport to improve their services and international competitiveness through rationalization and modernization. However, government support will be needed at least in the initial stage for replacing outmoded facilities by adopting the latest technologies of international standards. International cooperation including joint venture operation should also be encouraged to facilitate the introduction of new technologies and management in the international logistic system.

4.3 Development of International Passenger Transport

Passenger transport demand is estimated to increase from 3.82 billion trips in 1990 to 5.35 billion trips (1.4 times that of 1990) in 2005. Although domestic demand shares the majority of the demand, international passenger transport demand is expected to grow remarkably toward 2005: from 79 million trips in 1990 to 395 million trips in 2005 (5.0 times that of 1990).

To cope with this rapid increase of international passenger transport demand, road, railways and air transport need to be improved and developed in terms of both quantitative and qualitative terms.

International motorways need to be developed in the east-west and north-south directions through the provision of international standards, coupled with the improvement of border crossings. International bus service would be a promising business in the future for attracting more international tourists to Poland as well as for encouraging Polish people to visit foreign countries. Polish international bus services need to improve their competitiveness with foreign competitors.

International railways, Berlin-Warsaw connection in particular, need to be improved to offer better services to potential passengers by way of raising average train speed. The improvement measures include elimination of such bottlenecks as old bridges and sharp curvature. Also needed are improvements of seat reservation and information systems for the convenience of international passengers.

Air transport services need to be improved as well through the provision of easy access to international flight services at major airports. Combined domestic and international services need to be introduced, coupled with convenient Customs, Inspection and Quarantine (CIQ) services at these airports.

4.4 Staged Harmonization toward Integration with the European Community (EC)

Liberalization and harmonization are the basic policies of the EC transport system toward the integration. Special attention is given to:

- (1) uniformity of international transport systems;
- (2) uniformity of traffic safety;
- (3) uniformity of infrastructure;
- (4) uniformity of working conditions and practices; and
- (5) strengthening of environment protection.

Poland has adopted "liberalization" as a basic policy for its economic transformation and has declared "international cooperation" as an associate member of the EC. Every efforts to this end should be pursued in the Polish transport sector as well.

However, there are a variety of constraints that disturb the immediate implementation of these policies and policy measures, for example, existence of traditional systems and shortage of funds. It is indispensable to develop a staged implementation program by taking priorities and constraints into account. Short term priorities should be given to elimination or improvement of bottlenecks with less capital requirements. Medium term priorities should be given to improvement or development of strategic measures to encourage harmonization. During the preparation period for the integration, attention should be given to the government support to rationalize and modernize the transport industries in terms of accelerated replacement of aged transport fleet and facilities so as to enhance the competitiveness of the Polish transport industries.

Measures for promoting the international harmonization include:

- (a) improvement of road and railway border crossings in terms of procedures and facilities;
- (b) encouragement of internationalization of airports by facilitating CIQ.
- (c) rationalization and modernization of PKP management for future division of responsibilities with the state;

- (d) development of efficient combined transport services between railways/ports and roads;
- (e) development of internationally important motorways;
- (f) modernization of selected railway lines and introduction of high speed train operation;
- (g) replacement of aged fleet of trucks, vessels and aircraft with an emphasis on energy efficiency and environmental protection;
- (h) introduction of user pay principle in accordance with the practices in the EC countries; and
- (i) compliance with the EC regulations on environment protection and traffic safety.

**CHAPTER 5 POLICY GUIDELINES
FOR IMPROVING
DOMESTIC TRANSPORT**

CHAPTER 5 POLICY GUIDELINES FOR IMPROVING DOMESTIC TRANSPORT

5.1 Reforming Cargo Transport to New Demands

Railway and road transport are two major cargo transport means in the domestic market. Railways mainly carry bulky cargo for long distances while road transport carries a variety of cargo for short distances. Railway has been suffering a sharp decline of cargo, achievement in 1991 being 47-48% of that of 1980. Road transport has also suffered a decline but is less significant compared with railways. In 1989-1991, railway transport decreased by 41% while road transport showed a slight increase by 4%.

Annual cargo transport demand is estimated to increase from 1,821 million tons in 1990 to 2,544.5 million tons in 2005 with an annual growth rate of 2.5 %. During the period, the share of road transport is estimated to increase from 82.4 % to 86.9 % while that of railway will decrease from 15.3 % to 10.8 %. Internal demand will constitute 94 % of all the cargo transport in 2006.

The world tendency indicates that, in accordance with the diversification of industrial activities, truck transport has been playing a more important role while railway's importance is declining. Railways' superiority over trucks is usually confined only to bulky cargo transport, long haul transport and, in some exceptional cases, container transport between large urban agglomerations. In Poland, railways would likely have a very limited scope for domestic container transport due to its geographic shape and dispersed urban accumulations. Traditional railway cargo transport system needs immediate streamlining while truck transport needs further efficiency improvement to cope with the emerging requirements for quality services.

Poland has about 1,000 of medium and large truckers and 60,000 of small truckers for hire, coupled with about 39,000 of own account truckers. Trucking industry is characterized by a large number of small owner operators and labor intensiveness. Although the similar characteristics apply to the EC countries, a major drawback of the Polish trucking industry is the absence of large scale truckers or forwarders who have international as well as nationwide transport service network.

Restructuring of the trucking industry should be pursued through:

- (1) growing larger scale truckers who consolidate domestic and international cargo transport services;
- (2) encouraging joint cooperation of small owner operators to modernize and improve their competitiveness;
- (3) introducing truckers information system to modernize their management and improve loading factors;
- (4) training management and work forces to make them ready for the emerging quality services;
- (5) giving support for replacing the aged fleet of trucks and acquiring various types of trucks designed for specific cargoes; and
- (6) developing public truck terminals in the vicinity of large urban centers for cargo distribution and collection.

The complete deregulation of the trucking industry since 1990 will surely contribute to rationalize and modernize the industry through competition. However, the government needs to introduce policy measures to encourage their modernization and comply with the requirements for environment and traffic safety.

5.2 Coping with Diversifying Inter-City Passenger Transport

Railways, buses, airlines and private cars are competing in the inter-city passenger transport market. General characteristics observed in western countries are that a share of railways has decreased because passengers have shifted partly to private cars and buses as motorways are developed and partly to airlines as time value increases. In the inter-city passenger transport market, market forces generally dominate over artificial policy guidance.

Annual passenger transport demand is estimated to increase from 3,816 million trips in 1990 to 5,345 million trips in 2005 (1.4 times of 1990). During the period, the share of international transport demand is estimated to increase from 2.1% to 7.4% of the total passenger transport although further increase will be likely depending on the development of international high speed passenger trains. It is estimated that road transport will play an increasingly important role in passenger transport by raising its share from 79.3% to 86.7%.

In the future, motorization will further progress, accompanied by increasing average travel distances. Improvement of highways and development of motorways will encourage inter-city bus services. Polish Airlines LOT (LOT) has resumed domestic air services by adopting new aircraft. These factors infer that railways will face further decline of passengers unless services are improved. Market share of railways will largely depend on modernization and introduction of higher train operations on the lines between major urban centers. In order to compete with other modes of transport on these routes, fares need to be further deregulated, coupled with thorough rationalization of PKP management and local lines.

Inter-city bus services are provided by regional Transport Proper Enterprises (PKS) bus companies. They have an extensive service network connecting their regional terminals with other major cities and/or local towns. Currently, their inter-city services do not necessarily concentrate on trunk lines but include local lines. This type of operation needs to be divided into express buses on trunk lines and local buses on feeder lines so as to improve operation efficiency. Improvement of highways and development of motorways will improve the competitiveness of inter-city bus services. According to the Japanese experience, motorway lengthening of 2.46 times during 14 years increased inter-city bus passengers by 4.51 times, most of which shifted from railways. In the medium/long term perspective, capacity of bus terminals needs to be increased.

LOT has resumed domestic air services in 1992 by providing new aircraft. It is likely, however, that LOT's business performance will become better if the domestic services are extended to cities in other countries. Domestic air services, excluding some exceptional routes, seem to be less competitive with other competing modes because of medium distance of 300 - 400 kilometers, additional time and costs at airport and for access/egress, and costly new aircraft. Small aircraft by private airlines would result in better business performance on the air routes of limited number of passengers.

As stated in the beginning, free competition should prevail in this market segment. Experiences of western countries and Japan suggest that any policy measures to protect railways from competition in this segment have ended with progressive financial deterioration of railways.

5.3 Improvement of Rural Transport Services

According to the Japanese experience, modal share of rural transport has dramatically changed in 18 years from 1970 to 1988: (1) share of bus decreased from 47.1% to 12.4%; (2) marginal share of railways decreased from 10.8% to 5.9%; and (3) share of private cars increased from 20.7% to 71.0%. This tendency corresponds with experiences of the western countries in that the share of private cars steadily increased in rural transport market while the share of public transport deteriorated in accordance with the progress of motorization.

Public transport in rural transport market is generally characterized by "inconvenience" from users' viewpoint and "unprofitability" from suppliers' viewpoint. Decrease of passengers forces public transport to lower their service levels by reducing service network and operation frequencies while users' requirement for quality improvement rises as their income increases. This accelerates the shift from public to private transport means. However, it is obvious that there remains a group of people who have no other transport means than public transport. The role of the government is very important in this market.

Among other things, government initiative is required either to establish clear distinction of responsibilities between the government and PKP for train operations on unprofitable local lines or to provide alternative public transport services in place of railways when they are suspended.

Rural bus services are also making losses. Rationalization of public transport enterprises and revision of bus fares would be the first step toward financial improvement of rural bus services. However, it is likely that losses will continue and that the situation will be worsened as motorization progresses.

It will be necessary to introduce new type of public or semi-public transport services as applied in other countries. They include: purpose oriented public services like school and hospital buses; shared taxis and public use of private cars; and membership services based on the Theory of Clubs. The existing laws likely contradict with these types of new services. The government needs to revise them to be adaptable to these requirements, coupled with full support for their implementation.

5.4 Improvement of Urban Transport Services

Urban transport in major Polish cities are suffering various issues:

- (1) rapidly increasing car ownership in recent years, that of Warsaw reaching 300 cars per 1,000 population in 1991;
- (2) worsening traffic congestion in the center of cities as well as main corridors leading to the city centers;
- (3) severe shortage of parking lots in the center of cities;
- (4) deteriorating living environment due to exhaust gas and noise, and increasing traffic accidents;
- (5) inefficient urban transport enterprises in terms of services and recovery of costs; and
- (6) existence of uncompleted investments which need additional capital to complete.

Traffic Management System (TMS), which in effect switches emphasis from "capital" to "management" solutions, should be introduced to promote the efficient and safe flow of passengers, vehicles and pedestrians. The system principally concerned with minor road works, traffic control equipment and introduction of regulations and their enforcement. Traffic control includes: (1) channelization, signage and road markings at intersections; (2) upgrading of outdated signal systems and signal interconnection; and (3) introduction of priority and/or special bus lanes.

Urban transport enterprises need rationalization through demonopolization and privatization as well as modernization of management and operation. Through these measures, unnecessary expenditures could be saved so as to minimize subsidies from local governments. At the same time, maximum efforts should be made to collect fares from riders by limiting discount privileges. According to the experiences of foreign cities, however, financial self-sustenance of urban transport enterprises is extremely difficult mainly because of competition with private cars and great hourly fluctuation of demand in peak and off-peak hours. New schemes may become necessary for financing urban transport in the future, for example, introduction of area licensing and urban taxes earmarked for urban transport development.

**CHAPTER 6 POLICY GUIDELINES FOR
EACH MODE OF TRANSPORT**

CHAPTER 6 POLICY GUIDELINES FOR EACH MODE OF TRANSPORT

6.1 Restructuring of the Polish National Railways (PKP)

Restructuring of PKP aims at financial self-reliance in a long run under an appropriate demarcation of responsibilities between the government and PKP. Measures to be taken are:

- (a) refurbishment of railway administration;
- (b) rationalization for improving efficiency;
- (c) selective modernization for enhancing competitiveness; and
- (d) integration with the EC railway systems.

The present railway administration needs to be refurbished with a view to making PKP more responsive in a competitive market as well as to reducing state subsidies to PKP under the tight fiscal conditions of the country. First, railway administration function of the MTME needs to be strengthened so as to guide PKP to the desirable status through reforming the existing legal institutions. Second, more autonomy should be vested to PKP in terms of management and operation of railway services including entry to new businesses, tariff setting and exit from unprofitable businesses. Third, responsibilities between the state and PKP need to be clarified in terms of development, improvement and maintenance of railway infrastructures as well as compensation for discounted fares.

Efficiency of PKP needs to be improved through the introduction of rationalization measures. First, redundant employment should be reduced based on a long term rationalization target. Remaining employment especially management should be retrained to be adaptable to a market economy. Second, unprofitable local lines need to be closed or transferred to local operators where such opportunities exist through the careful study of financial structure of each line. Third, reduction of railway stations and yard based operations should be promoted by taking account of advantages and disadvantages of railways vis-a-vis road transport. Fourth, existing organization should be streamlined by privatizing such works that the private sector could attain higher efficiency.

Selective modernization should be launched step by step with an emphasis on less capital involvement in the initial stage. First, existing organization should be restructured with a focus on improving responsiveness to prospective market segments through the decentralization of decision-making. Second, costs accounting system that principally follows the International Union of Railways (UIC) methods need to be established in view of supporting relevant and timely decision-making by each business unit. Third, services should be improved with an aim to reduce the total transport time from clients' origins to destinations so as to effectively compete with road transport which offers flexible door-to-door services: combined transport and direct services in the case of cargo transport; and higher train speed, frequent services and convenient seat reservation in the case of passenger transport.

The MTME and PKP need to prepare for the integration of the Polish railways with the EC railway systems in accordance with the EC requirements toward the end of this century. To this end, cooperation with the railways of other countries needs to be strengthened particularly in terms of traffic control system, border crossing and international combined transport services.

[For details, refer to Main Text, Chapter 4]

6.2 Quality Improvement of Road Network for Supporting Internationalization and Regional Development

Poland is strategically located astride major North-South and East-West European transport corridors. Poland is a signatory to the European Agreement on Main International Traffic Arteries (AGR) and a network of "E" routes is already established throughout the country. In addition, Poland is a founder member of the Trans-European North-South Motorway (TEM) Project.

Although Poland has an extensive road network, quality improvement of major highways is urgently needed to cope with the increasing traffic as well as encourage regional development and international integration. Inter-regional transport corridors with high development potential should be developed to promote economic integration between regions. For this purpose, various bottlenecks on existing roads should be improved and those existing roads should be well maintained to make the best use of the existing facilities. Especially, in case of the corridors which must cater to international traffic, they should be prioritized in the road development program to promote the Polish international integration, particularly with the EC.

This study carried out traffic demand forecasts by the year 2005 by taking account of the prospect of transport characteristics, future growth of regions and future trend of international transport. Road network in 2005 was prepared based on the existing road network as well as by referring to the road network proposed by the GDDP Plan targeting the year 2015 or 2020.

A year 2005 highway network (Motorways and Inter-Regional Highways) is proposed as shown in Fig. 6.1. Total length of international motorways (Route A-1, A-2, A-4 and A-12) is estimated to be 1,236 kilometers, comprising 416 kilometers in the first phase (1993-1996), 425 kilometers in the second phase (1997-2000), and 395 kilometers in the third phase (2001-2005). Sections are from Torun to the Czechoslovak (CSFR) border for A-1, from the German border to east of Warsaw for A-2, and from the German border to east of Krakow for A-4 and A-12. Total construction cost is estimated at US\$ 2,644 million (about 34,400 billion zloty) which is almost equal to 10.2 times of the GDDP budget in 1992. International motorways should be constructed as toll roads preferably with private participation, for example, through Build, Operate and Transfer (BOT) scheme as much as possible with a view to relieving huge financial burdens on the government.

In addition to the above motorways, it is estimated that inter-regional highways need capacity increase from existing 2 lanes to 4 lanes for the total length of 2,037 kilometers by 2005. Implementation of the capacity increase will largely depend on the establishment of a special fund earmarked for roads.

The existing road maintenance system should be improved for better utilization of the existing road infrastructure. The Pavement Management System (PMS) needs to be introduced as soon as possible as programmed by GDDP.

[For details, refer to Main Text, Chapter 5, Section 5.2]

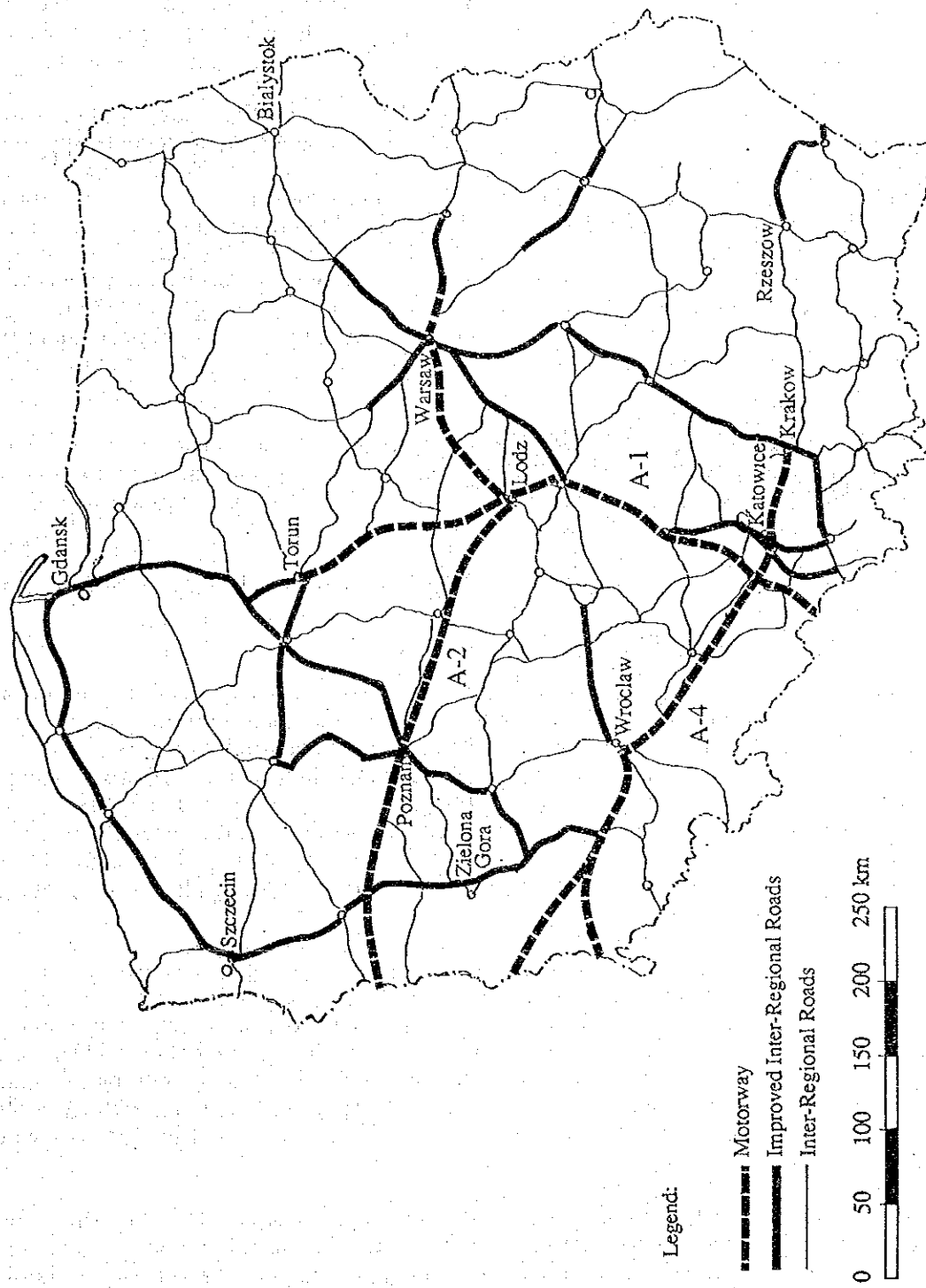


Fig. 6.1 Proposed Year 2005 Highway Network

6.3 Modernization of Trucking Industry

Polish trucking industry (about 100,000 truckers) comprises "for hire" truckers (61,000) including a limited number of internationally competitive truckers, privatized PKS companies and private owner-operator truckers (60,000), and "own account" truckers (39,000). A substantial part of the own account truckers belonging to state enterprises is likely to be separated from these enterprises due to the economic transformation now under way. This implies that the total number of "for hire" truckers will further increase in the future, probably resulting in more severe survival competition.

Polish trucking industry is required to adjust itself to the EC's basic policies for integration: (1) clearance of licensing standards of management, technology and reputation; (2) opening of cabotage transport; (3) unification of vehicle standards; (4) compliance with environmental norms; and (5) unification of working conditions. "Compliance with environmental norms" would be the most difficult conditions to which Polish trucking industry should adjust, followed by "clearance of licensing standards", mainly due to the existence of large number of small sized owner-operators who usually own outmoded and aged trucks. In addition to fulfilling the conditions for the integration, Polish trucking industry should address itself to the improvement of transport efficiency and the reduction of transport costs so as to strengthen its international competitiveness.

Financial and taxational support by the government is important to bridge the gap between the present status of the Polish trucking industry and the future requirements. At the same time, truckers' mutual cooperation is also important to modernize their management and operation.

[For details, refer to Main Text, Chapter 5, Section 5.3]

6.4 Modernization of Maritime Transport

Polish ports are classified as Class IV Port which is the smallest class of port of annual cargo handling volume (10 - 25 million tons) in the European maritime community. Polish ports have less accumulation of port functions and shipping routes than the European ports of higher classes. It is likely that Polish ports will remain as feeder ports to major international ports such as Hamburg and Rotterdam in the foreseeable future. Currently, Polish ports are in danger of a further decline because of keen competition with railways and roads to and from these major ports and less cooperation among shipping companies, port authorities and inland carriers to collect more cargo to ports.

Polish ports need actions to invite more shipping calls (especially liner) by way of: (1) enhancing efficiency of port operations through the introduction of substantial competition; (2) improving inland transport services to Polish cities and inland countries; and (3) improving container handling capacity. Unless these actions are taken, the role of Polish ports in an international scene will considerably be reduced. This is undesirable not only from the aspect of transport economy but also from the aspect of regional economy because port activities have significant interactions with local economies.

In the short term perspective, further efforts should be made to rationalize port management and operation to cope with the declining cargo handling volume as well as to streamline the redundancies cultivated in the old regime. Market forces should prevail in port operation. Simultaneously, government support is indispensable in

same time, MTME should take a leadership in developing a policy guideline to vitalize the ports and maritime sector to compete in an international maritime market through the consultation with shipping companies, port authorities and inland transport operators as illustrated in Fig. 6.2.

Long term perspective is full of uncertainty because cargo handling volume of Polish ports are dependent on the recovery of Polish economy on one hand and on the economic stabilization and development of the surrounding countries including the Baltic countries, CIS and Eastern/Central European countries on the other.

[For details, refer to Main Text, Chapter 6, Sections 6.2 & 6.3]

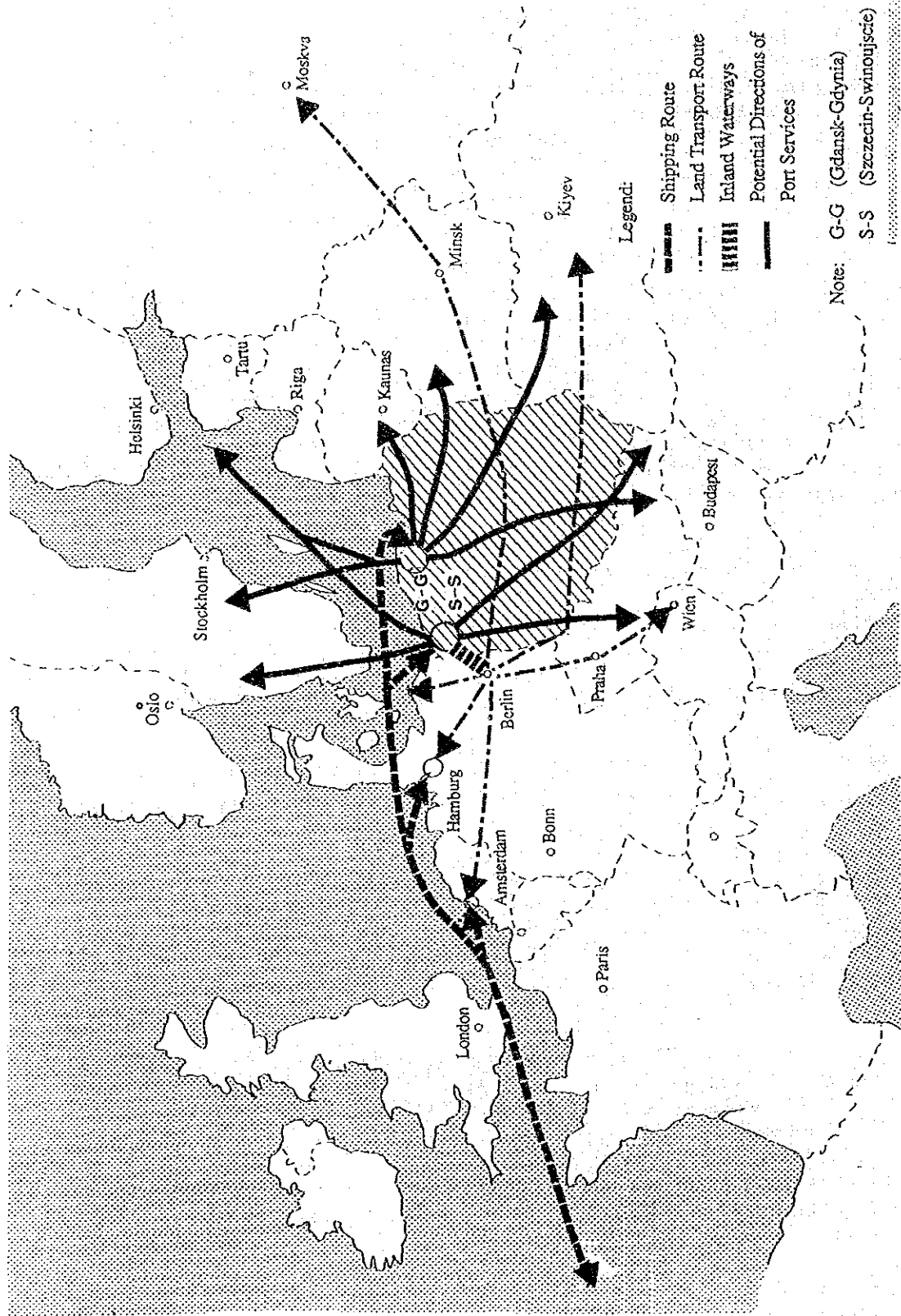


Fig. 6.2 International Competition of Port and Maritime Transport