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INFORMATION CLASSIFICATION MANUAL  
FOR THE TRANSPORT SECTOR

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This Manual is the result of a joint project between the International Bank for Reconstruction and Development and the United Nations Economic Commission for Latin America. The points of view expressed in it do not necessarily reflect the views or policies of the Bank.

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## INTRODUCTION

An efficient transport system is essential for the economic growth of any country. The purpose of transport planning is to promote efficiency through the provision of infrastructure and service capacities sufficient to satisfy demands for the movement of people and goods in given periods of time. On the one hand, the magnitude of these demands in terms of time and space must be estimated; on the other hand, a decision must be made as to how they should be satisfied within constraints of available physical and economic resources. It is then possible to determine where changes in the systems should be made, what form they should take, and what should be their priorities.

### Planning and information

Planning is a process of making medium- and long-range decisions. Like any decision-making process, it must be based on adequate, timely and accurate information. One of the greatest obstacles to effective transport planning in the developing countries is that production, processing, distribution and use of information is frequently unsatisfactory. The United Nations Economic Commission for Latin America (ECLA) and the International Bank for Reconstruction and Development (World Bank) both seek to remove this obstacle. Having recognized:

- (a) the common interest of the World Bank and ECLA in promoting development of effective transport sector planning in Latin America;
- (b) the importance of having up-to-date, reliable, pertinent and readily accessible quantitative and qualitative information on the transport sector as a basis for national planning; and
- (c) the need to assist member Governments in setting up appropriate information systems in order to collect, analyze and preserve such information.

The two organizations agreed in June 1972 to sponsor a joint project to aid in improving access to and flows of information for planning.

/One goal

One goal of the project was to develop a region-wide means of facilitating the communication of information both vertically - between producers, processors and users - and horizontally - among producers, among processors and among users. The need for regional scope precluded an information system, which inevitably must be designed especially to fit an individual country's decision-making environment. Nor could the collection of any particular body of data be specified, since planning data needs also will vary according to the specific planning practices of each country. Rather, the goal was achieved through the development of an instrument for the orderly identification and analysis of all information relevant to the transport sector, not only for planning (medium- and long-term decision making) but also for operations (short-term decision-making).

#### Information Classification Manual

The name given to this instrument is the Information Classification Manual for the Transport Sector. In the pursuit of its objective of facilitating the communication of information, the Manual has three principal applications: (1) as an outline for sectoral diagnoses, (2) as an information classification system and (3) as a guide to requirements for planning data.

Diagnoses. Generally, before formulating a new plan for the future, it is desirable to study the present state of the transport sector to identify its strengths and weaknesses - in other words, to make a diagnosis of the sector. An outline such as the Manual gives such a diagnosis a systematic structure so that it tends not to overlook important items of information. This same structure helps assure that successive diagnoses will cover the same subject-matter, thus making possible a comparison of progress in the sector over a period of time.

The Manual has been applied as an outline for the diagnosis of the Peruvian transport sector made in the course of a technical aid mission sponsored by the World Bank and the United Nations Development Programme. It was found to be of significant assistance in structuring the study and in organizing the subsequent report.

/Classification. For

Classification. For rapid and accurate retrieval, information should be classified and organized systematically. The structure of the Manual permits it to function as a classification system specifically designed for information pertaining to the transport sector. This system can be applied equally well to bibliographic reference files or to data files, whether managed manually or automatically. The Manual also provides a framework for a microthesaurus (controlled vocabulary) of transport terminology for use with key-word-oriented information retrieval systems.

The Manual is being applied to the classification of documents and the formation of bibliographic reference files in Brazil, Colombia and Honduras. In each of these countries, documents are located, reviewed, and their subject matter entered on forms that can be filed according to the Manual's topic codes. Anyone interested in a particular subject first determines what code to look under and then consults the reference file for that code. The forms he finds there refer him to locations where documents containing the desired information are available.

Planning data. The formulation of modal and sectoral development plans is sometimes hindered by difficulties in identifying exactly what kinds of data inputs must be supplied to the planning process. While the Manual does not prescribe specific data items that must be supplied, it does identify virtually all types that are relevant to transport planning. Thus it can be used as a guide to the identification of those data most appropriate to a country's particular planning environment, data generating possibilities and data processing capabilities.

The Manual is being applied in this manner in Colombia. Groups that include transport planners, basic data producers and the National Administrative Department for Statistics are studying data production processes with a view to ensuring that adequate, reliable data are available for each planning need, without gaps or duplications.

/Organization of

### Organization of the Manual

The Manual is divided into two parts: Part I, The transport sector in general, and Part II, The modes of transport. Each part in turn is subdivided into chapters, topics and sub-topics. There is no common structure for the chapters of Part I, because each deals with a totally different subject. In Part II, however, it has been found that each mode of transport lends itself to essentially the same treatment, which permits the structure of all chapters to be identical. For some modes, particular sub-topics are extraneous - "maintenance and repair of infrastructure" in Chapter 05, Road transport services, for example - but the numbering from chapter to chapter or of sub-topics that deal with the same subjects does not vary. This consistency greatly facilitates the use of the Manual, because a different coding system does not have to be learned for each mode of transport.

The first version of the Manual was brought out in August 1972 to coincide with the initiation of the ECLA/World Bank joint project. Although containing basically the same chapter headings and the two-part organization of the present version, Part II lacked a coherent structure. The second version, published as E/CEPAL/1008 on 15 July 1975, incorporated the joint project staff's three years of experience with applications in Brazil, Colombia, Honduras and Peru and the helpful comments of users in those four countries - especially in Colombia. It also adopted a consistent system of numbering sub-topics in Part II, for which a special set of tables was devised to permit conversion of the classification codes from the original version. The present version incorporates only minor modifications to eliminate errors in coding, improve the consistency of the text in Part II, and extend coverage of the Manual in the areas of Distribution chains, Facilitation, Effects on the environment and Multimodal transport.

/Although the

Although the Manual covers a very wide variety of information related to transport, gaps in its coverage continue to appear. In addition, the transport sector itself is constantly evolving and producing new types of information to be classified. Identification of gaps and additions depends to a large degree on experience with actual applications of the Manual. Any user who has difficulty finding a code that adequately classifies a particular subject is therefore requested to describe the problem in writing to the Transport and Communications Division, Economic Commission for Latin America, Casilla 179-D, Santiago, Chile. The Division will try to resolve the problem by indicating what code should be used. It also will file the comment for incorporation in the next revision, so that the experience of all users of the Manual can be shared to their mutual benefit.

P A R T I

THE TRANSPORT SECTOR IN GENERAL

Chapter A

SPATIAL AND GEOGRAPHICAL ASPECTS

1. Physical characteristics

Physical regions, topography, hydrography, climate, geology, soils, etc., and their influence on the development of the transport network.

2. Demographic considerations

Patterns of settlement and population density; migration patterns.

3. Economic considerations

Location and magnitude of natural resources; composition and distribution of production and consumption activities that generate demand for transport services.

4. Regionalization

Political and economic regions into which the country is divided, and regionalization for national and transport planning purposes.

5. Characteristics of the transport network

Summarized inventory of existing national and international transport infrastructure, and changes that would result from projects now programmed or being carried out (details of the inventory are found in Part II of the Manual).

6. Geographical scope of the transport infrastructure

Relation between topic 5 and topics 1, 2, 3 and 4.

Chapter B

HISTORICAL TRENDS

1. Evolution of the system

Evolution of the transport system and its relation to the economic and regional development of the country and to the government's political, administrative, social, economic and defense objectives for the transport sector. Identification of the economic, physical, political or other factors that have limited or promoted the development of the transport system in general or of some mode in particular. Development of traffic (aggregated, details in Part II) and its distribution among modes.

2. Administrative evolution

Evolution within the government administrative organization responsible for the construction, operation and administration of the transport modes. Relation between this evolution, the evolution of transport policies (regulation, rate making, subsidies and other aspects) and the evolution of ownership of the transport modes.

3. Financial evolution

Evolution during recent years of investments in the transport sector and their distribution by regions, modes, purposes, etc. Comparison of programmed investments with those actually made, in both financial and physical terms. Sources of financing, with distinction between the public and private sectors, the central and regional governments, domestic and foreign resources, etc. Transfers (subsidies) to and from transport companies.

4. Evolution of multinational co-operation

Evolution of bilateral or multilateral co-operation and regional integration related to transport.

Chapter C  
TRANSPORT AND THE ECONOMY

1. TRANSPORT AND NATIONAL ACCOUNTS

1.1 Definition of the sector

Definition of the transport sector used in the national accounts.

1.2 Contribution to GNP

Contribution of transport to the gross national product.

1.3 Contribution to capital

Contribution of transport to capital formation.

1.4 Productivity of capital

Capital/product ratio and other indicators of productivity of the capital invested in the transport sector.

2. TRANSPORT AND THE BALANCE OF PAYMENTS

2.1 Income and expenditure

Income and expenditure of foreign exchange in the transport sector, by transport mode, broken down into current and capital accounts.

2.2 Impact of the sector

Overall impact of the transport sector on the balance of payments, broken down into purchases and sales of transport services and inputs.

### 3. TRANSPORT AND EMPLOYMENT

#### 3.1 Labour

Number of workers employed in the transport sector, classified by modes and by main categories of employment, indicating sources of information and the definition of the transport sector used.

#### 3.2 Employment and investment

Relation between employment and investment projects.

#### 3.3 Productivity

Productivity of labour in the various modes.

#### 3.4 Technology and employment

Relation between transport technology and employment.

### 4. ECONOMETRIC RELATIONS

#### 4.1 Relation between transport and GNP

Observed and projected relations between the gross national product and the total volume of transport.

#### 4.2 Input-output matrix

Relations between the transport sector and other sectors of the economy.

#### 4.3 Opportunity costs

Opportunity costs of inputs (labour, capital, value of time and foreign exchange) used in the evaluation of investment projects and in planning.

#### 4.4 Price indexes

Price indexes applicable to the construction of transport infrastructure and equipment.

Chapter D

INSTITUTIONAL FRAMEWORK OF PLANNING 1/

1. OBJECTIVES, POLICIES AND STRATEGIES

1.1 Objectives

Government objectives for the transport sector expressed in laws, decrees, plans and other official policy documents; degree of compliance with these objectives.

1.2 Intersectorial consistency

Consistency of the objectives pursued in the transport sector with those pursued in other sectors and in the economy as a whole.

1.3 Policies

Policies and their degree of fulfilment as regards government intervention and participation in the provision and operation of the transport system.

1.4 Strategies

General lines of the explicit or implicit strategies pursued by the government in the transport sector.

2. NATIONAL AND SECTORIAL PLANS

2.1 Nature of plans

Existence and nature (legal value) of national transport plans and other sectorial and regional plans dealing with transport.

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1/ Each of the topics in this chapter refers to general planning aspects. Any detail connected with the planning of a specific mode of transport is classified under Topic 10 of the appropriate modal chapter.

2.2 Formulation of plans

Procedures for updating plans; participation of the Ministry of Transport and other agencies.

2.3 Complementary programmes

Other documents such as operating plans or modernization programmes used in the preparation of budgets for agencies in the transport sector.

2.4 Fulfilment of plans

Evaluation of the fulfilment of transport plans.

3. REGIONAL PLANNING

3.1 Regional mechanisms

Mechanisms for regional planning; participation of agencies in the transport sector.

3.2 Regional importance

Importance of regional considerations in transport plans, programmes and budgets, and mechanisms for the participation of regional authorities and agencies.

4. BUDGETS AND IMPLEMENTATION OF PLANS

4.1 Formulation of budgets

Procedures followed for the formulation and approval of routine and capital budgets and for the authorization of investments by bodies in the transport sector.

4.2 Control of projects

Procedures for controlling physical progress and monetary payments in respect of investment projects.

4.3 Control of budgets

Procedures for controlling the fulfilment of current budgets and for modifying them.

/4.4 Compliance

4.4 Compliance with budgets

Extent of compliance with operating and capital budgets of agencies in the transport sector, and reasons for any discrepancies.

5. ADMINISTRATIVE ORGANIZATION

5.1 National planning

Organizational diagram of national planning, with identification of participation by agencies in the transport sector.

5.2 Ministry

Administrative organization (and technical dependency when different from administrative dependency) of the ministry or ministries most directly connected with the transport sector; functions of the various departments as regards formulation and implementation of policies, regulation of transport (authorization of routes, fixing of rates, etc.), studies, construction and maintenance of infrastructure, provision of equipment and vehicles, co-ordination between transport modes, co-ordination with other sectors, co-ordination with regional authorities, etc.

5.3 Related agencies

Functions of other ministries or agencies (apart from those indicated in item 5.2) that control or influence aspects of transport, including the office responsible for the supervision of public expenditure (Office of the Comptroller General).

5.4 Public enterprises

Decentralized public enterprises.

6. ADMINISTRATIVE CAPACITY

6.1 Technical personnel

Number and technical qualification of officials having planning or regulatory responsibilities in the central and regional governments.

/6.2 Professional

6.2 Professional posts

Comparison of professional posts provided for with those actually filled.

6.3 Inadequacies

Identification of areas where professionals are inadequate in numbers or in technical preparation.

6.4 Recruitment problems

Problems encountered in recruiting qualified technical personnel (low salaries, lack of professional specialization in the country, etc.) and solutions proposed or adopted.

6.5 Turnover

Rate of personnel turnover in the main administrative, professional and technical posts in government agencies responsible for transport planning and regulation.

7. REGULATION OF TRANSPORT

7.1 Control of rates

Government control of transport rates and criteria used in fixing or approving them; information used for control; recent changes; degree of compliance with rates.

7.2 Control of services

Government control of transport services and capacity; criteria applied and information used for control.

7.3 Control of employment

Government control of employment and wages in the transport sector; information used for control.

7.4 Control of imports

Government control of imports; use of this control as a regulatory instrument.

## 8. CO-ORDINATION OF TRANSPORT

### 8.1 Distribution of traffic

Modal distribution of passenger and freight traffic; evaluation of the modal distribution by the government, transport companies and users; measures proposed for rationalizing modal distribution.

## 9. INFORMATION SYSTEM DEVELOPMENT

### 9.1 Data collection

Distribution of responsibility for the collection and processing of statistical data between ministries, other government agencies and transport companies.

### 9.2 Information flows

Flows of information within the transport sector and its components.

### 9.3 Electronic data processing

Distribution, capacity and use of electronic data processing equipment.

## Chapter E

### PATTERNS OF TRANSPORT

#### 1. MOVEMENTS OF PASSENGERS AND FREIGHT

##### 1.1 Principal flows

Identification of the principal flows of passengers and freight and the most important centres of origin and destination, broken down by distribution chains, main transport corridors and regions of special interest for transport planning.

##### 1.2 Factors of influence

Economic and social factors that influence the generation and distribution of passenger and freight flows.

#### 2. DISTRIBUTION CHAINS 2/

##### 2.1 Product

Description of the product to which the distribution chain corresponds: nomenclature, occurrence, physical characteristics, economic importance, etc.

##### 2.2 Operations

Operations performed on the product along the chain from point of origin to point of destination, such as production (domestic or foreign), transport, storage, packing, transformation (including change of packaging), inspection, quarantine, transshipment and consumption (domestic or foreign), classified according to the sequence in which they are performed and indicating where they take place and how much time they require. Identification of the agent responsible for each operation, such as producer, carrier, warehouse, packer, wholesaler, retailer and consumer, indicating their organization and interrelations; structure of the market.

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2/ The text of this topic deals with the transport of freight. If the chain being described represents the transport of passengers, classification of information by sub-topic can be made by analogy as applicable.

2.3 Infrastructure

Infrastructure and equipment used in each operation of the chain, indicating degree of specialization and joint use by other products.

2.4 Quantities

Quantities of the product associated with each operation of the chain; production, consumption, import and export statistics; volumes transported; utilization of infrastructure in comparison with available capacity; forecasts of future levels.

2.5 Ownership

Ownership of the product during each operation of the chain, such as producer, wholesaler, trading company, bank, retailer and consumer. Terms of shipment when ownership changes, such as price ex-works, free alongside (f.a.s.), free on board (f.o.b.), cost and freight (c. & f.), cost/insurance/freight (c.i.f.) or placed buyers premises.

2.6 Insurance

Type of insurance coverage on the product in each operation of the chain, such as all-risk insurance, insurance free from particular average or with average, policies with Institute War Clauses or Institute Strike Clauses, or self-insurance. Type of liability coverage of the agent responsible for each operation of the chain, indicating the regulations (Hague Rules and Protection and Indemnity Clubs for maritime transport, CMR Convention for road transport, CIM Convention for rail transport, Warsaw Convention for air transport, national legislation, etc.) that govern in each case.

2.7 Financing and payment

Type and source of financing for each operation of the chain, such as commercial credit, government credit or working capital. Terms of payment at each point in the chain where the product changes ownership, such as documents against payment, documents against acceptance, letter of credit or payment on delivery.

2.8 Formalities

Formalities (regulations, standards, etc.) applicable to each operation of the chain, indicating the reason for their

/application, the

application, the agencies responsible for instituting them and the agencies responsible for controlling their compliance.

### 2.9 Documentation

Documentation generated, processed and transferred in each operation of the chain, such as documents related to transport (waybill, bill of lading), ownership (invoice, bill of sale), insurance (policy, certificate), credit (draft, letter of credit), control (export or import permit, sanitary certificate, customs declaration), etc.

### 2.10 Price formation

Costs of the operation itself and attendant services for each operation of the chain. Structures and levels of rates charged for operations; transaction prices when the product changes ownership.

### 2.11 Development

Policies, plans and programmes affecting the chain of distribution: recent and programmed investment projects; benefits expected; sources of financing. Responsibility for the formulation of policies, plans and programmes that affect the chain; legal requirements for cooperation among agencies that plan and execute projects. Past, present and proposed technologies applied in each operation; alternative technologies available.

## 3. MAIN TRANSPORT CORRIDORS 3/

### 3.1 Corridors

Description of each corridor: location, physical, demographic and economic characteristics, important centres of production and consumption, etc.

### 3.2 Flows

Flows of passengers and freight in the corridor, classified by origin and destination and by transport mode, indicating seasonal variations; forecasts for the future.

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3/ Topics 3 and 4 are included here only to indicate how a diagnosis of transport in a corridor or a region could be organized, or how an ad hoc file of information collected during a study of these spatial aspects could be arranged.

### 3.3 Routes

3.3 Routes

Inventory of routes included in the corridor, classified by transport mode, with their infrastructure and facilities.

3.4 Transfer points

Inventory of intermodal transfer points in the corridor, with their facilities; their location with respect to centres of population and routes served.

3.5 Services

Inventory of transport services offered in the corridor, with their capacities; institutional organization; special contractual arrangements.

3.6 Cost and quality of services

Costs (direct and indirect, total and unit) of transport in the corridor, with emphasis on door-to-door services. Rates paid by users. Comparative quality of competing services (frequency, rapidity, safety, etc.) and their influence on costs and rates; observations on the distribution of traffic by transport mode.

3.7 Traffic

Traffic; utilization of infrastructure in the corridor as compared with available capacity, classified by transport mode; forecasts for the future.

3.8 Investments

Investments made and other development measures adopted in the corridor in recent years, and their apparent effects on production, costs, flows, etc.

3.9 Problems

Main problems existing or foreseen for the corridor, such as lack of capacity, inefficiency, monopoly rates, etc.

3.10 Development

Development programmes and investment projects, with their expected effects.

#### 4. REGIONAL TRANSPORT SYSTEMS

##### 4.1 Regions

Description of each region: location, physical, demographic and economic characteristics, important population centres, etc.

##### 4.2 Flows

Flows of passengers and freight in the region, classified by origin and destination and by transport mode, indicating seasonal variations; forecasts for the future.

##### 4.3 Routes

Inventory of routes that serve the region, classified by transport mode, with their infrastructure and facilities.

##### 4.4 Storage facilities

Inventory of infrastructure and equipment in the region for storage and marketing; their location in relation to the routes.

##### 4.5 Services

Inventory of transport services offered in the region and connecting with other regions, with indication of their capacities; institutional organization; contractual arrangements.

##### 4.6 Cost and quality of services

Costs (direct and indirect, total and unit) of inter- and intraregional transport. Rates paid by users. Comparative quality of competing services (frequency, rapidity, safety, etc.) and their influence on costs and rates; observations on the distribution of traffic by transport mode.

##### 4.7 Traffic

Traffic; utilization of infrastructure in the region as compared with available capacity, classified by transport mode; forecasts for the future.

##### /4.8 Investments

4.8 Investments

Investments made and other development measures adopted in the region in recent years, with special attention to penetration roads, and their apparent effects on regional production, costs, flows, social aspects, etc.

4.9 Problems

Main problems existing or foreseen for the region, such as capacity, lack of competition, distance from markets, inefficiency, etc.

4.10 Development

Development programmes and investment projects, with their expected effects.

## Chapter F

### FACILITATION

#### 1. DOCUMENTATION AND DOCUMENTARY PROCEDURES

##### 1.1 Documentation

Trip documents necessary for passengers and crew members, and their simplification. Commercial and transport documents necessary, and their simplification and standardization (aligned documents, layout keys, standard forms such as unique bill of lading or standard cargo manifest, etc.). Benefits from the standardization of documentation.

##### 1.2 Documentary procedures

Documentary procedures that affect passengers and crew members: revision and simplification of the visa system, co-ordination of requirements and rationalization of procedures. Documentary procedures that affect trade and transport: consular intervention and its elimination, non-tariff barriers and their elimination, documentary proof, and co-ordination of requirements (bureaucratic practices, lack of harmonization, standardization, simplification, etc.). Benefits from facilitation of documentary procedures.

#### 2. PROCESSING AND TRANSMISSION OF INFORMATION

##### 2.1 Information exchange

Types of information exchanged; exchange procedures; standardization of messages and items of information. Electronic transmission of information; transmission errors and legal responsibility for them; authentication and its legal specifications; security of information. Codification of transport modes, currencies, freight movements, types of packing, countries, products and ports; commodity classification. Standardization of marking and labelling. Benefits from the standardization of information exchange.

##### 2.2 Automation systems

Policies and proposals about the use of automation for processing and transmitting information; systems used in

/the country,

the country, such as LACES, ATA/IATA, ARINC, SIT, CODE, CARDIS, CARP, SWIFT or ACL. Harmonization of the different systems: INTERFACE project (electronic data processing/data transmission).

### 3. CUSTOMS AND BORDER PROCEDURES

#### 3.1 Passenger accommodations

Accommodations in terminals: standardization of signs and symbols (use of ISO standards).

#### 3.2 Reception and dispatch procedures

Procedures for receiving and dispatching transport vehicles in terminals; congestion caused by inconvenient procedures; administrative capacity for modernizing terminal procedures; co-ordination of requirements. Benefits from facilitation of reception and dispatch procedures.

#### 3.3 Customs control

Inspection of goods; control of cargo and vehicles in transit or admitted temporarily; verification of origin and destination (customs exemptions); rationalization and simplification of procedures. Collection of import duties and taxes; automation of collection and accounting procedures. Benefits from facilitation of customs controls.

#### 3.4 Sanitary control

Sanitary and public health inspection and control standards for passengers, agricultural products and animals, applied both at national borders and at interior control points.

#### 3.5 Control of dimensions, weights and measurements

Control of dimensions, weights and measurements of vehicles, both at borders and at interior control points; harmonization of dimensions, weights and measurements that govern the design of infrastructure and that serve as legal limits for vehicles using the infrastructure.

#### 3.6 Landlocked countries

Special services and facilities offered to cargo in transit to and from landlocked countries: warehousing, transshipment and transport procedures; freight and documentation handling

/systems; rationalization

systems; rationalization and simplification of procedures. Benefits from facilitation of services for landlocked countries.

#### 4. TRADE AND EXCHANGE PROCEDURES

##### 4.1 Foreign trade controls

Regulations that govern foreign trade; procedures for obtaining import and export licenses; co-ordination and simplification of requirements (harmonization and rationalization of procedures). Access to markets and trade; commercial barriers.

##### 4.2 Exchange controls

Regulations that govern the buying and selling of foreign currencies, both for travellers and for commercial transactions.

#### 5. INSURANCE AND BANKING PROCEDURES

##### 5.1 Insurance

Insurance, reinsurance and co-insurance for goods, civil liability and third-party protection. Insurance claims; facilitation of procedures.

##### 5.2 Banking

International credit procedures and their relation to transport and trade; financial arrangements; simplification and standardization of banking requirements and procedures.

#### 6. USERS COUNCILS AND FACILITATION GROUPS

##### 6.1 Users councils

Users councils existing in the country and their participants; activities of the councils; their organization and financing; government support they receive.

##### 6.2 Facilitation groups

Facilitation groups existing in the country and their participants; activities and jurisdiction of the groups.

##### /6.3 International

6.3 International facilitation agencies

International agencies active in facilitation, such as ECLA, ECE/UNCTAD (FALPRO), ISO, IMCO, CCC, ICS, ICC, IATA, LAFTA, etc., that collaborate with national groups, and the type of collaboration they give.

6.4 Intergovernmental conventions

Intergovernmental conventions that promote facilitation of trade and international transport and to which the country is a party, such as the IMCO FAL Convention, Mar del Plata Convention, LAFTA Resolution 254, ITI Convention, TIR Convention, etc.

Chapter G

THE TECHNOLOGICAL AND METHODOLOGICAL BASE

1. EDUCATION AND TRAINING

1.1 Training

Universities and technical schools; programmes of study in the transport field.

1.2 Professional improvement

Improvement programmes and seminars for professionals in the transport field.

1.3 Training of workers

Training programmes and seminars for workers in the transport field.

2. SCIENTIFIC AND TECHNOLOGICAL RESEARCH

2.1 Research institutes

Specialized institutes, centres or departments that carry out transport studies or research, and their personnel; research programmes and their approaches to national transport problems; practical utilization of research results.

2.2 Laboratories

Laboratories for testing transport materials and equipment.

2.3 Research committees

Other working groups or committees that carry out research or studies in connection with transport, such as committees of professional associations; types of studies carried out.

2.4 Standards agencies

Agencies that set and supervise technical standards for transport.

1/3. INTERCHANGE

### 3. INTERCHANGE OF TECHNOLOGY AND INFORMATION

#### 3.1 Exchanges among universities

Relations among national and foreign universities and technical schools. Exchange programmes for professors and technicians and scholarship programmes for study abroad, sponsored by universities, the government or private agencies.

#### 3.2 Exchanges among companies

Relations among domestic and foreign transport companies that contribute to the transfer of technology.

#### 3.3 Meetings and congresses

Participation in national and international transport agencies and congresses.

#### 3.4 International standardization

Relations with international standards organizations, such as the Pan American Committee on Technical Standards, the International Organization for Standardization (ISO), etc.

#### 3.5 Documentation

Transport documentation centres and data banks. Links with international documentation and data networks.

#### 3.6 Technical journals

Technical journals on transport published in the country, with their frequency of appearance. Foreign technical publications received and national organizations that receive them, with their frequency of appearance.

### 4. SELECTION OF APPROPRIATE TECHNOLOGIES

Efforts to seek and apply suitable technologies to:

#### 4.1 Inputs

Achieve appropriate combinations of labour and capital in the construction, maintenance and operation of transport systems.

#### /4.2 Facilities

#### 4.2 Facilities

Use transport infrastructure, equipment and organizations to solve social and economic problems.

### 5. THEORY AND METHODOLOGY 4/

#### 5.1 General aspects

General basic concepts related to transport, such as the role of transport in decisions on the location of economic activities. Theoretical reference works.

#### 5.2 Methodologies

Methodologies for planning and analysis, such as the application of the benefit-cost relationship in the evaluation of projects. Mathematical models and programming systems.

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4/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis of the national transport sector.

PART II

THE TRANSPORT MODES

LOCATION OF TOPICS IN PART II

<u>Topic</u>	<u>Chapter and Page</u>											
	<u>AI</u>	<u>AS</u>	<u>CI</u>	<u>CS</u>	<u>DT</u>	<u>FT</u>	<u>MI</u>	<u>MS</u>	<u>NI</u>	<u>NS</u>	<u>TM</u>	
1. Organization and Administration .....	33	51	67	85	101	119	139	157	173	191	207	
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## Chapter AI

### AIRPORTS

#### 1. ORGANIZATION AND ADMINISTRATION

##### 1.1 Existing airports

List of airports operating in the country. Classification by public and private airports, general and commercial aviation airports, etc. Maps showing the location of airports thus classified. History of the airports.

##### 1.2 Establishment of airports

Laws, statutes and decrees that establish or regulate the establishment of airports and airport authorities. Register of ownership; degree of government participation.

##### 1.3 Institutional framework

Relations of the airports with the government: institutional organization within which the airports operate; government agencies that regulate them, especially in respect to their services, rates and investments. Relations and agreements among airports. Relations with clients: limitations and obligations toward users; liability; contracts with air transport companies.

##### 1.4 Administrative organization

Organization of the agencies responsible for operating, maintaining and constructing airports. Functions, responsibilities and authority of their various departments. Administrative procedures.

##### 1.5 Institutional changes

Institutional or administrative changes in the organization of the airport system in recent years, and their effects.

##### 1.6 International agreements

Intergovernmental bilateral and multilateral agreements and conventions in force, to be ratified and being studied that affect airports, such as those concerning ICAO.

## 2. LABOUR FORCE

### 2.1 Level and qualification

Number of employees of the government or private agencies responsible for the supervision, development and operation of airports, by individual airport and in total, broken down into main categories. Average income in each category. Availability of trained personnel.

### 2.2 Personnel policy

Standards and procedures for hiring, training, promotion, retirement, free life and unemployment insurance, vacations, etc. Welfare services. Medical, health and safety provisions. Current planning of the labour force.

### 2.3 Wage policy

Recent evolution of remunerations; wage scales and increments.

### 2.4 Training

Training facilities and programmes.

### 2.5 Labour relations

Labour laws. Number and type of unions operating in the airports; mechanisms for settling labour disputes; role of the government in labour relations; recent history of labour relations. Personnel turnover.

### 3. INFRASTRUCTURE AND INSTALLATIONS

#### 3.1 Airways

Inventory of airways by location, indicating permissible flight altitudes according to direction of flight, handoff points between air traffic control centres, communications frequencies used, etc.

#### 3.2 Airports

Inventory of airports by location, indicating number, length, orientation, critical conditions, etc., of runways; characteristics and capacity of taxiways, aircraft parking aprons, terminal buildings, warehouses, customs facilities, etc. Present physical condition of the airports; recent construction or reconstruction projects. Connexions with other modes of transport. Responsibility for carrying out inventories of airports; date of last inventory; degree of reliability.

#### 3.3 Telecommunications and navigational aid systems

Inventory by airport of signalling, lighting, telecommunications and navigational aid systems. Air traffic control centres. Recent acquisitions and withdrawals of equipment.

#### 3.4 Auxiliary equipment

Inventory by airport of equipment for servicing aircraft and for passenger and freight handling; firefighting equipment. Recent acquisitions and withdrawals of equipment.

#### 3.5 Useful life

Real economic life of airport infrastructure and equipment, and useful life considered for the calculation of depreciation.

#### Airport maintenance shops and equipment

Classified under 4.5.

#### 4. MAINTENANCE AND REPAIR OF INFRASTRUCTURE AND INSTALLATIONS

##### 4.2 Airports

Maintenance and repair methods and operations for runways, taxiways and parking aprons; periodic repaving and resealing; degree of mechanization. Maintenance of terminal buildings.

##### 4.3 Telecommunications and navigational aid systems

Maintenance and repair methods and operations for lighting systems, runway marking devices, communications equipment, approach systems and other airport navigational aids. Maintenance of air navigation aids and air traffic control equipment.

##### 4.4 Auxiliary equipment

Maintenance and repair methods and operations for freight and baggage handling equipment and installations and other auxiliary equipment.

##### 4.5 Maintenance equipment and shops

Availability and condition of maintenance and repair equipment and shops at airports and air traffic control facilities.

##### 4.6 Standard quantities and costs

Standard quantities of materials, labour and equipment that should be used for each maintenance or repair operation identifiable for airport infrastructure and equipment. Local currency and foreign exchange unit costs of these operations, with and without taxes.

##### 4.7 Independent shops

Maintenance and repair services provided by outside firms, especially for air navigation equipment.

## 5. DESIGN AND CONSTRUCTION OF INFRASTRUCTURE AND INSTALLATIONS

### 5.1 Design standards

Design standards for the construction and improvement of airports and passenger and cargo terminals; main design criteria such as type of aircraft, approach visibility, length and width of runways and taxiways, slopes, drainage, single wheel equivalent load for the design of runway and apron pavement, etc. Standards for the selection and installation of telecommunications, air traffic control and navigational aid equipment according to international standards. Standards for the designation of airways. Bases for specifying standards.

### 5.2 Policies for the execution and supervision of works and studies

Policies regarding the execution and supervision of airport and terminal projects by administration or by domestic or foreign contractors. Procedures for bids and the supervision of contracts. Legal and administrative provisions for the importation of equipment and materials. Policies regarding the execution of studies by administration or by contract.

### 5.3 Capacity for design and construction by administration

Capacity of the agencies responsible for the airports to carry out economic and engineering studies and to execute or supervise construction and improvement projects.

### 5.4 Register of firms

#### 5.4.1 Consultants

Register of domestic and foreign consulting firms that carry out economic or engineering studies or supervise projects; type of work performed; capacity for execution; financial situation; etc.

#### 5.4.2 Construction firms

Register of domestic and foreign construction firms; type of work performed; capacity for execution; financial situation; etc.

#### 5.4.3 Manufacturers

Register of domestic firms that manufacture or assemble airport equipment and materials; production capacity; annual production; financial situation; etc.

#### /5.4.4 Importers

#### 5.4.4 Importers

Register of firms that import airport equipment and materials; financial situation; etc.

#### 5.5 Inputs and costs of construction

Standard or average quantities of materials, labour, equipment and other inputs that serve as a basis for estimating investment costs for the construction or improvement of airport infrastructure and equipment. Local currency and foreign exchange unit costs of these inputs, with and without taxes. Geographic location and availability of inputs.

## 6. TRAFFIC AND SERVICES

### 6.1 Services

Services to aircraft, passengers and freight offered by the airports; shifts and hours of operation; quality of the services. Establishment and government regulation of services.

### 6.2 Passenger traffic

Past and projected traffic: number of passengers arriving, departing and in transit via the airports; origins and destinations; seasonal patterns. International traffic.

### 6.3 Freight traffic

Past and projected traffic: number of tons arriving, departing and in transit via the airports, classified by main products; origins and destinations; movements of unitized freight; seasonal patterns. International traffic.

### 6.4 Operations

Statistics and forecasts of airport operations: number and types of aircraft arriving and departing, etc. Operating procedures other than those related to safety.

### 6.5 Safety and accidents

Airport accident statistics. Causes and consequences. Safety standards and compliance with them.

### 6.6 Delimitation of zone of influence

Delimitation of the zone of influence of each airport; main factors that determine the zone.

## 7. OPERATING EFFICIENCY AND COSTS

### 7.2 Airports

For each airport, indicators of efficiency such as maximum traffic per hour, aircraft arrival patterns, landing delays, operating restrictions due to topography, climate or lack of equipment, delays in processing passengers through terminal buildings, degree of congestion, etc. Forecasts of operating efficiency; bases for calculations.

### 7.3 Handling equipment

For each airport, indicators of efficiency such as degree of utilization of freight handling equipment, extent to which equipment is not operational because of repair or maintenance work, etc. Forecasts of operating efficiency; bases for calculations.

### 7.4 Operating costs

With and without taxes, in local currency and foreign exchange.

#### 7.4.1 By nature

Total costs per airport of wages and salaries (including social welfare contributions), materials, energy, interest, depreciation (of runways, buildings and equipments), etc.

#### 7.4.2 By function

Total costs per airport of air operations, ground services to aircraft, passengers and freight, maintenance of runways, buildings and equipment, general management, etc.

#### 7.4.3 Unit costs

For each airport, average cost per aircraft, passenger and ton handled, etc.

#### 7.4.4 Bases for calculations

Bases for calculating operating costs.

### 7.5 Consumption

Real total and unit consumption of the principle inputs used by airports, by type of input. Productivity per unit of critical inputs such as energy.

## 8. USER CHARGES

### 8.1 Structures and levels

Structures and levels of charges for the use of airports: landing and parking fees, fuel taxes, etc., levied against aircraft; fees for rental of space and provision of services to air transport companies and others that offer service to aircraft, passengers and freight; and direct passenger fees such as departure taxes. Recent and proposed changes in charges.

### 8.2 Government regulation and control

Government regulation and control of airport user charges.

### 8.3 Revenues

Revenues derived from airport user charges, and their relation to the costs of providing the corresponding facilities and services.

### 8.4 Bases for calculations

Bases for calculating airport user charges.

## 9. FINANCIAL SITUATION

### 9.1 Income and expenditures

Statements of income and expenditures, classified by main categories, of the airports and of the governmental agencies responsible for them; details of write-offs for depreciation and of debt servicing; agreements with the government regarding subsidies.

### 9.2 Assets and liabilities

Value of fixed assets, revaluations, accounts receivable, cash on hand and other assets; current liabilities (short- and long-term debts) and deferred liabilities (capital and reserves). Accounts with the government. Bases for depreciation and revaluation.

### 9.3 Profitability indicators

Financial profitability indicators on average net fixed assets, ratio of indebtedness to net assets, operating ratio, etc.

### 9.4 Cash flows

Sources and disposition of funds; financing of investments; changes in working capital.

### 9.5 Audits

Procedures for auditing accounts. Audit reports.

### 9.6 Budgets

Budgetary methods and procedures; requirement for government approval of budgets; degree of compliance with budgets and main reasons for divergences.

### 9.7 Financial projections

Forecasts of income and expenditures, expected rate of return on average net fixed assets and other indicators, debt servicing and cash flows. Bases for calculations.

## 10. PLANNING

### 10.1 Policy guidelines

Policy guidelines for overall or transport sector development contained in official statements by high government authorities, and their implicit or explicit relation to airport development.

### 10.2 Diagnoses, strategies and long-term policies

Diagnoses, strategies and long-term policies for overall or transport sector development, and their relation to airport development.

### 10.3 Medium- and short-term policies, objectives and measures

Medium- and short-term policies, objectives and measures for the improvement and development of airports. Relation and consistency of the objectives of airport policies with those of other modes of transport and of other sectors of the economy.

### 10.4 Plans

Existence and scope of overall or sectorial development plans that affect airports; targets for airport development to meet expected demands for air transport.

### 10.5 Institutional improvement programmes

Programmes for improving the institutional organization or administrative efficiency of agencies responsible for airports and airways; estimates of human and material resources required, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

### 10.6 Investment programmes

Investment programmes of agencies responsible for airports (construction of runways and terminals, acquisition of navigational aids, etc.) and airways; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes (elimination of traffic bottlenecks, facilitation of movements of passengers or freight, reduction of costs, etc.). Relation to previous programmes. Projects included in the programmes; criteria used for their selection (see description of investment projects in Topic 20).

/10.7 Special

10.7 Special maintenance programmes

Special programmes for the maintenance or rehabilitation of airports, apart from normal maintenance programmes; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

10.8 Sources of financing

Sources of financing for programmes (own funds, government contributions, domestic or foreign loans, etc.). Estimates of timeliness of financing with respect to schedules for implementation of programmes and projects; relation between programme financing and airport budgets.

10.9 Responsibility for plans, programmes and projects

Responsibility for the preparation of airport plans and programmes; organization, methodologies and criteria used in their preparation; procedures for their approval. Process of formulation, development and approval of projects; methods used for project evaluation.

10.10 Programme and project control

Mechanisms for control of programme and project implementation. Procedures for modifying priorities of programme elements in light of changes in the circumstances or conditions that originally determined them.

10.11 Past investments

Investments made in airports and airways in recent years and their apparent effects. Relation between investments programmed, budgeted and carried out.

## 11. EFFECTS ON THE ENVIRONMENT

Details of this subject are now being studied, and additional subheadings will be incorporated in the next revision of the Information Classification Manual.

### 11.1 Environmental pollution

Statistics and studies about problems of environmental pollution related to airports.

20. INVENTORY OF INVESTMENT PROJECTS

Description of investment projects for airports, from those still in the conceptual stage to those under construction or completed, indicating for each project information such as: name of the project; physical location; whether national or multinational (or of potential importance to regional integration); existing studies; main technical and economic characteristics, including costs of the project in local currency and foreign exchange, optimum year for placing in service, manpower requirements during construction and economic life; expected economic and social benefits; related projects in the transport sector or in other sectors of the economy; physical and financial programming; sources of financing; information on physical and financial supervision of construction; data on utilization (traffic) of the resulting infrastructure or installations, so as to make possible a post-evaluation of the investment.

### 30. FLOWS AND QUALITY OF INFORMATION

#### 30.1 Flow diagrams

Flow diagrams of procedures for collecting, processing and filing information generated by the airports, indicating the destination (users) of this information at each stage of transformation or level of aggregation of the data. Forms or computer printouts used at the different stages of processing.

#### 30.2 Quality of information

Timeliness, accuracy and relevance of the information collected in relation to needs for planning and administration.

#### 40. TECHNICAL ASSISTANCE

Technical assistance for airports, financed by grants or loans from international organizations or individual governments: aid in the formulation of policies or strategies, preparation of plans or programmes, evaluation or preparation of projects, improvement of organization, administration, operations or maintenance, development of information systems, etc. Types of assistance provided; periods during which provided; reports produced. Degree of government participation in the form of financial or professional counterparts. Evaluation of technical assistance projects.

50. GENERAL AND METHODOLOGICAL ASPECTS 5/

50.1 General aspects

General basic concepts related to airports. Theoretical reference works.

50.2 Methods of planning and operation

Methodologies and models for the planning and operation of airports, such as traffic forecasting methods, simulation models or systems of user charges.

50.3 Technical characteristics

Physical design and construction characteristics for infrastructure and installations, of interest as references for general application. Mathematical models for design calculations.

50.4 Research programmes

Programmes of research related to airports.

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5/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis of the national transport sector.

MEMORANDUM FOR THE RECORD

DATE: 1/15/54

TO: SAC, NEW YORK (100-100000)

FROM: SA [Name], NEW YORK

SUBJECT: [Subject Name], [Address], [City], [State]

RE: [Reference]

[Detailed description of the memorandum's content, including any findings or actions taken.]

Very truly yours,

[Signature]

100-100000-1000

Chapter AS

AIR TRANSPORT SERVICES

1. ORGANIZATION AND ADMINISTRATION

1.1 Existing air transport companies

List of scheduled and non-scheduled domestic and foreign airlines, as well as air taxis and private airfreight companies, that use domestic airports. History of the companies and of the air transport system in general.

1.2 Establishment of air transport companies

Laws, statutes and decrees that establish or regulate the establishment of air transport companies. Register of ownership; degree of government participation.

1.3 Institutional framework

Relations of the air transport companies with the government: institutional organization within which the air transport companies operate; government agencies that regulate them, especially in respect to their services, rates and investments. Relations and agreements among domestic air transport companies. Relations with clients: limitations and obligations toward users; liability; contracts of carriage and their conditions.

1.4 Administrative organization

Organization of the domestic air transport companies. Functions, responsibilities and authority of their various departments. Administrative procedures.

1.5 Institutional changes

Institutional or administrative changes in the organization of air transport in recent years, and their effects.

1.6 International agreements

Bilateral and multilateral agreements and conventions - inter-governmental and among companies - in force, to be ratified and being studied that affect air transport, such as those concerning ICAO, IATA and the interchange of aircraft and flight crews.

## 2. LABOUR FORCE

### 2.1 Level and qualification

Number of employees of domestic air transport companies, by individual company and in total, broken down into main categories. Average income in each category. Availability of trained personnel.

### 2.2 Personnel policy

Standards and procedures for hiring, training, promotion, retirement, free life and unemployment insurance, vacations, etc. Welfare services. Medical, health and safety provisions. Current planning of the labour force.

### 2.3 Wage policy

Recent evolution of remunerations; wage scales and increments.

### 2.4 Training

Training facilities and programmes.

### 2.5 Labour relations

Labour laws. Number and type of unions operating in the air transport companies; mechanisms for settling labour disputes; role of the government in labour relations; recent history of labour relations. Personnel turnover.

### 3. AIRCRAFT

#### 3.4 Aircraft

Inventory by domestic air transport company of the number and type of aircraft owned or chartered; structure of fleet according to age of aircraft. Present state of the fleet; recent acquisitions and withdrawals of aircraft. Types of aircraft operated in service to the country by foreign airlines. Responsibility for carrying out inventories of aircraft; date of last inventory; degree of reliability.

#### 3.5 Useful life

Real economic life of aircraft, and useful life considered for the calculation of depreciation.

#### Aircraft maintenance shops and equipment

Classified under 4.5 and 4.7.

4. MAINTENANCE AND REPAIR OF AIRCRAFT

4.4 Aircraft

Maintenance and repair methods and operations for aircraft, according to international air safety standards. Major and routine maintenance carried out in the country of engines, control systems, and navigation and avionics systems in general; fatigue testing of aeronautical equipment; availability of adequate stocks of spare parts. Periodic certification of aircraft.

4.5 Maintenance equipment and shops

Availability and condition of aircraft maintenance and repair equipment and shops owned by the air transport companies.

4.6 Standard quantities and costs

Standard quantities of materials, labour and equipment that should be used for each aircraft maintenance or repair operation identifiable. Local currency and foreign exchange unit costs of these operations, with and without taxes.

4.7 Independent shops

Maintenance and repair services provided by firms other than the air transport companies, both within the country and abroad.

4.8 Dismantling and disposal of disused aircraft

## 5. CONSTRUCTION OR IMPORTATION OF AIRCRAFT

### 5.1 Design standards

Design standards for the construction of aircraft. Bases for specifying standards.

### 5.2 Aircraft acquisition policies

Policies regarding the acquisition of aircraft. Legal and administrative provisions for the importation of aircraft.

### 5.3 Capacity for design and construction by administration

Capacity of the national air force or other public agencies to carry out economic and design studies and to execute or supervise the construction of aircraft.

### 5.4 Register of firms

#### 5.4.1 Consulting firms

Register of domestic and foreign consulting firms that carry out economic or engineering studies or supervise projects; type of work performed; capacity for execution; financial situation; etc.

#### 5.4.3 Manufacturers

Register of domestic firms that manufacture or assemble aeronautical equipment; production capacity; annual production; financial situation; etc.

### 5.5 Average prices

Average prices of the main types of aircraft in local currency and foreign exchange, with and without taxes.

## 6. TRAFFIC AND SERVICES

### 6.1 Services

Passenger and freight services and itineraries offered by domestic and foreign air transport companies, classified by route; quality of the services. Establishment and government regulation of services.

### 6.2 Passenger traffic

Past and projected traffic: number of passengers and passenger-kilometres transported by domestic and foreign air transport companies, classified by routes; origins and destinations; seasonal patterns.

### 6.3 Freight traffic

Past and projected traffic: number of tons and ton-kilometres transported by domestic and foreign air transport companies, classified by routes and main products; movements of unitized freight; origins and destinations; seasonal patterns.

### 6.4 Operations

Statistics and forecasts of operations of the air transport companies: number of flights and hours flown in domestic and foreign service, etc., classified by routes and types of aircraft. Operating procedures other than those related to safety.

### 6.5 Safety and accidents

Air transport accident statistics. Causes and consequences. Safety standards and compliance with them. Crew licensing requirements and procedures.

## 7. OPERATING EFFICIENCY AND COSTS

### 7.3 Aircraft

For each air transport company, indicators of efficiency such as average daily flying hours, utilization factors for passenger and freight capacity, etc., classified by routes and types of aircraft. Forecasts of operating efficiency; bases for calculations.

### 7.4 Operating costs

With and without taxes, in local currency and foreign exchange.

#### 7.4.1 By nature

Total costs per air transport company of wages and salaries (including social welfare contributions), fuel, materials, insurance, interest, depreciation (of aircraft, equipment and installations), etc.

#### 7.4.2 By function

Total costs per air transport company of flying, maintenance, station and other ground operations, passenger and freight services, marketing, general management, certification, etc.

#### 7.4.3 Unit costs

For each air transport company, average cost per flying hour, passenger-kilometre and ton-kilometre offered and transported, etc., classified by routes and types of aircraft.

#### 7.4.4 Bases for calculations

Bases for calculating operating costs.

### 7.5 Consumption

Real total and unit consumption of the principal inputs used by air transport, by type of input. Productivity per unit of critical inputs such as energy.

## 8. RATES

### 8.1 Structures and levels

Structures and levels of commercial domestic and international air transport rates for passengers and freight between pairs of airports and per passenger-kilometre or ton-kilometre. Influence of the air transport companies on the fixing of domestic and international rates; capacity of the companies to negotiate rates with shippers. Establishment of charter rates. Relationship of air transport rates to rates of competing modes. Recent and proposed changes in rates.

### 8.2 Government regulation and control

Government regulation and control of domestic air transport rates. Influence of the government on IATA in the fixing of international rates.

### 8.3 Revenues

Revenues derived from air transport rates, and their relation to the costs of providing the corresponding services.

### 8.4 Bases for calculations

Bases for calculating air transport rates.

## 9. FINANCIAL SITUATION

### 9.1 Income and expenditures

Statements of income and expenditures, classified by main categories, of the domestic air transport companies; details of write-offs for depreciation and of debt servicing; agreements with the government regarding subsidies.

### 9.2 Assets and liabilities

Value of fixed assets, revaluations, accounts receivable, cash on hand and other assets; current liabilities (short- and long-term debts) and deferred liabilities (capital and reserves). Accounts with the government. Bases for depreciation and revaluation.

### 9.3 Indicators of profitability

Financial profitability indicators on average net fixed assets, ratio of indebtedness to net assets, operating ratios, etc.

### 9.4 Cash flows

Sources and disposition of funds; financing of investments; changes in working capital.

### 9.5 Audits

Procedures for auditing accounts. Audit reports.

### 9.6 Budgets

Budgetary methods and procedures; requirement for government approval of budgets; degree of compliance with budgets and main reasons for divergences.

### 9.7 Financial projections

Forecasts of income and expenditures, expected rate of return on average net fixed assets and other indicators, debt servicing and cash flows. Bases for calculations.

## 10. PLANNING

### 10.1 Policy guidelines

Policy guidelines for overall or transport sector development contained in official statements by high government authorities, and their implicit or explicit relation to air transport development.

### 10.2 Diagnoses, strategies and long-term policies

Diagnoses, strategies and long-term policies for overall or transport sector development, and their relation to air transport development.

### 10.3 Medium- and short-term policies, objectives and measures

Medium- and short-term policies, objectives and measures for the improvement and development of air transport. Relation and consistency of the objectives of air transport policies with those of other modes of transport and of other sectors of the economy.

### 10.4 Plans

Existence and scope of overall or sectorial development plans that affect air transport; targets for air transport service development to meet expected demands for air transport.

### 10.5 Institutional improvement programmes

Programmes for improving the institutional organization or administrative efficiency of air transport companies; estimates of human and material resources required, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

### 10.6 Investment programmes

Investment programmes of the air transport companies (acquisition of aircraft, flight and ground support equipment, construction, etc.); estimates of local currency and foreign exchange costs; schedules for implementation and benefits expected of the programmes (improvement of services, elimination of bottlenecks, greater participation by national airlines in international traffic, reduction of costs, etc.). Relation to previous programmes. Elements included in the programmes; criteria used for their selection (see description of investment projects in Topic 20).

10.7 Special maintenance programmes

Special programmes for the maintenance or rehabilitation of aircraft, apart from normal maintenance programmes; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

10.8 Sources of financing

Sources of financing for programmes (own income, government contributions, domestic or foreign loans, etc.).

10.9 Responsibility for plans, programmes and projects

Responsibility for the preparation of air transport plans and programmes; organization, methodologies and criteria used in their preparation; procedures for their approval. Process of formulation, development and approval of projects; methods used for project evaluation.

10.11 Past investments

Investments made in air transport in recent years and their apparent effects. Relation between investments programmed, budgeted and carried out.

11. EFFECTS ON THE ENVIRONMENT

Details of this subject are now being studied, and additional subheadings will be incorporated in the next revision of the Information Classification Manual.

11.1 Environmental pollution

Statistics and studies about problems of environmental pollution related to air transport services.

## 20. INVENTORY OF INVESTMENT PROJECTS

Description of investment projects for air transport services, from those still in the conceptual stage to those under construction or completed, indicating for each project information such as: name of the project; physical location; whether national or multinational (or of potential importance to regional integration); existing studies; main technical and economic characteristics, including costs of the project in local currency and foreign exchange, optimum year for placing in service, manpower requirements during construction and economic life; expected economic and social benefits; related projects in the transport sector or in other sectors of the economy; physical and financial programming; sources of financing; information on physical and financial supervision of construction; data on utilization of the resulting installations or equipment, so as to make possible a post-evaluation of the investment.

### 30. FLOWS AND QUALITY OF INFORMATION

#### 30.1 Flow diagrams

Flow diagrams of procedures for collecting, processing and filing information generated by the air transport companies, indicating the destination (users) of this information at each stage of transformation or level of aggregation of the data. Forms or computer printouts used at the different stages of processing.

#### 30.2 Quality of information

Timeliness, accuracy and relevance of the information collected in relation to needs for planning and administration.

#### 40. TECHNICAL ASSISTANCE

Technical assistance for air transport services, financed by grants or loans from international organizations or individual governments: aid in the formulation of policies or strategies, preparation of plans or programmes, evaluation or preparation of projects, improvement of organization, administration, operations or maintenance, development of information systems, etc. Types of assistance provided; periods during which provided; reports produced. Degree of government participation in the form of financial or professional counterparts. Evaluation of technical assistance projects.

50. GENERAL AND METHODOLOGICAL ASPECTS 6/

50.1 General aspects

General basic concepts related to air transport services. Theoretical reference works.

50.2 Methods of planning and operation

Methodologies and models for the planning and operation of air transport services, such as traffic forecasting methods, simulation models or rate systems.

50.3 Technical characteristics

Physical design and construction characteristics of aircraft, of interest as references for general application. Mathematical models for design calculations.

50.4 Research programmes

Programmes of research related to air transport services.

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6/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis of the national transport sector.

Chapter CI

ROADS

1. ORGANIZATION AND ADMINISTRATION

1.1 Existing roads

Administrative classification of non-urban roads into national, state, departmental, municipal, private, etc. Maps showing the location of the roads thus classified. Institutional history of the road system.

1.3 Institutional framework

Authority and responsibilities of the various ministries and agencies responsible for planning, constructing, improving and maintaining roads and road terminals at various levels (planning offices, Ministry of Public Works, other ministries, departmental and municipal authorities, armed forces, etc.).

1.4 Administrative organization

Organization of the Ministry of Public Works or its equivalent, of state, departmental and municipal agencies, and of public corporations (e.g., toll authorities) directly responsible for road and terminal works at various levels. Functions, responsibilities and authority of their various departments. Administrative procedures.

1.5 Institutional changes

Institutional or administrative changes in the organization of the road system in recent years, and their effects.

1.6 International agreements

Intergovernmental bilateral and multilateral agreements and conventions in force, to be ratified and being studied that affect roads, such as those concerning road signs and markings.

## 2. LABOUR FORCE

### 2.1 Level and qualifiaction

Number of employees of the various ministries and agencies responsible for roads, broken down into main categories. Average income in each category. Availability of trained personnel.

### 2.2 Personnel policy

Standards and procedures for hiring, training, promotion, retirement, free life and unemployment insurance, vacations, etc. Medical, health and safety provisions. Welfare services. Current planning of the labour force.

### 2.3 Wage policy

Recent evolution of remunerations; wage scales and increments.

### 2.4 Training

Training facilities and programmes.

### 2.5 Labour relations

Labour laws. Number and type of unions, if any; mechanisms for settling labour disputes; role of the government in labour relations; recent history of labour relations. Personnel turnover.

### 3. INFRASTRUCTURE AND INSTALLATIONS

#### 3.1 Roads

Inventory of roads by length and location, indicating functional classification (primary roads, secondary roads, feeder roads, and trails or tracks usable by vehicles), surface (Portland cement concrete, asphaltic concrete, tar, gravel, earth), whether all-weather or dry-weather roads, number and length of bridges and tunnels, etc. Present physical condition of the road network; recent construction or reconstruction projects. Virtual distances of the road network. Design or practical capacity of roads. Location of toll stations, weigh stations and other types of control points. Responsibility for carrying out road inventories; date of last inventory; degree of reliability

#### 3.2 Terminals

Inventory by location of interurban passenger and freight terminals (concentration points), indicating their characteristics and capacity. Present physical condition of the terminals; recent construction and reconstruction projects. Connexions with other modes of transport.

#### 3.3 Signs and markings

Inventory by location of road signs and markings, indicating types, condition and adequacy.

#### 3.5 Useful life

Real economic life of highway infrastructure, and useful life considered for the calculation of depreciation.

#### Road maintenance shops and equipment

Classified under 4.5.

#### 4. MAINTENANCE AND REPAIR OF INFRASTRUCTURE AND INSTALLATIONS

##### 4.1 Roads

Maintenance and repair methods and operations for roadway, shoulders and structures; periodic repaving and resealing; degree of mechanization of work.

##### 4.2 Terminals

Maintenance and repair methods and operations for interurban passenger and freight terminals.

##### 4.3 Signs and markings

Maintenance and repair methods and operations for signs, road and shoulder markings and traffic signals.

##### 4.5 Maintenance equipment and shops

Availability and condition of highway maintenance equipment and shops; equipment renewal programmes; availability of adequate stocks of spare parts.

##### 4.6 Standard quantities and costs

Standard quantities of materials, labour and equipment that should be used for each maintenance or repair operation identifiable for highway infrastructure. Local currency and foreign exchange unit costs of these operations, with and without taxes.

##### 4.7 Independent shops

Programmes for contract maintenance and repair of roads; availability and condition of contractors' equipment and shops.

## 5. DESIGN AND CONSTRUCTION OF INFRASTRUCTURE AND INSTALLATIONS

### 5.1 Design standards

Design standards for the construction and improvement of roads, bridges and tunnels; main design criteria for flat, rolling and mountainous terrain, such as design speed, minimum radius of curvature, minimum sight distance, maximum gradient, width and cross section; maximum axle loadings for pavement and bridge design; design capacity of roads. Standards for road signing. Design standards for interurban terminals. Bases for specifying standards.

### 5.2 Policies for the execution and supervision of works and studies

Policies regarding the execution and supervision of road projects by administration or by domestic or foreign contractors. Procedures for bids and the supervision of contracts. Legal and administrative provisions for the importation of equipment and materials. Policies regarding the execution of studies by administration or by contract. Policies regarding road construction by labour-intensive methods.

### 5.3 Capacity for design and construction by administration

Capacity of the agencies responsible for roads to carry out economic and engineering studies and to execute or supervise construction and improvement projects.

### 5.4 Register of firms

#### 5.4.1 Consultants

Register of domestic and foreign consulting firms that carry out economic or engineering studies or supervise projects; type of work performed; capacity for execution; financial situation; etc.

#### 5.4.2 Construction firms

Register of domestic and foreign construction firms; type of work performed; capacity for execution; financial situation; etc.

#### /5.4.3 Manufacturers

5.4.3 Manufacturers

Register of domestic firms that manufacture or assemble road equipment and materials; production capacity; annual production; financial situation; etc.

5.4.4 Importers

Register of firms that import road equipment and materials; financial situation; etc.

5.5 Inputs and costs of construction

Standard or average quantities of materials, labour, equipment and other inputs that serve as a basis for estimating investment costs for the construction or improvement of road infrastructure. Local currency and foreign exchange unit costs of these inputs, with and without taxes. Geographic location and availability of inputs.

## 6. TRAFFIC AND SERVICES

### 6.1 Services

Services to vehicles, passengers and freight offered by interurban terminals; shifts and hours of operation; quality of the services. Establishment and government regulation of services.

### 6.2 Passenger traffic

Past and projected traffic: number of passengers arriving and departing via interurban terminals; origins and destinations; seasonal patterns. International traffic.

### 6.3 Freight traffic

Past and projected traffic: number of tons arriving and departing via interurban terminals, classified by main products; origins and destinations; movements of unitized freight; seasonal patterns. International traffic.

### 6.4 Traffic

Statistics and forecasts of road operations: traffic volumes by section of the road network, classified by types of vehicles, principal products and speeds; variations according to hour, day and season; traffic density and amount of congestion. Regulations on dimensions and weight of vehicles and compliance with them. Statistics and forecasts of interurban terminal operations: number of vehicles handled. Operating procedures other than those related to safety.

### 6.5 Safety and accidents

Statistics of road accidents per kilometre, classified by type of road, season of year, geographical area, etc. (Note that the basic statistics on accidents are classified under CS 6.5.) Road operating regulations connected with safety, such as closure or restriction of traffic when conditions are hazardous.

## 7. OPERATING EFFICIENCY AND COSTS

### 7.1 Roads

Indicators of efficiency such as number of days when traffic is interrupted, relation between average daily traffic and practical or design capacity, etc., by road sections; current and foreseeable traffic bottlenecks (comparison of traffic density and road capacity maps). Forecasts of operating efficiency; bases for calculations.

### 7.2 Terminals

For each interurban terminal, indicators of efficiency such as number of vehicles, passengers or tons of freight handled per unit of time and their relation to terminal capacity. Forecasts of operating efficiency; bases for calculations.

### 7.4 Operating costs

With and without taxes, in local currency and foreign exchange.

#### 7.4.1 By nature

Total costs of wages and salaries (including social welfare contributions), fuel, materials, interest, depreciation (of maintenance and repair equipment and shops, roads, bridges and tunnels), etc. Similar breakdown for costs of interurban terminals.

#### 7.4.2 By function

Total costs of maintenance, road signing, studies, general management, etc. Similar breakdown for costs of interurban terminals.

#### 7.4.3 Unit costs

Average maintenance costs per kilometre of paved, gravel or earth road, classified by road sections. For interurban terminals, average cost per vehicle, passenger or ton handled.

#### 7.4.4 Bases for calculations

Bases for calculating operating costs.

7.5 Consumption

Real total and unit consumption of the principal inputs used by roads, by type of input. Productivity per unit of critical inputs such as energy.

### 8. USER CHARGES

#### 8.1 Structures and levels

Structures and levels of charges that yield revenues to the central, departmental or provincial and local governments from the ownership and use of motor vehicles, the use of roads, and the ownership of real estate adjoining roads: customs duties, sales taxes on vehicles, components and parts, fuel and lubricant taxes, vehicle registration and licence fees; taxes on the transport of goods and passengers, highway tolls; and taxes on the increased value of real estate attributable to roads. Structures and levels of charges for the use of interurban terminals: fees for services to vehicles, for rental of space and for services to highway transport enterprises. Recent and proposed changes in charges.

#### 8.2 Government regulation and control

Government regulation and control of road user charges.

#### 8.3 Revenues

Amount and disposition of revenues derived from road and terminal user charges accruing to the various governmental bodies, and their relation to the costs of providing highways (construction, maintenance, and administration) and the corresponding terminal facilities and services.

#### 8.4 Bases for calculations

Bases for calculating road user charges.

## 9. FINANCIAL SITUATION

### 9.1 Income and expenditures

Statements of income and expenditures, classified by main categories, of the bodies responsible for constructing, improving and maintaining road infrastructure; details of write-offs for depreciation and of debt servicing.

### 9.2 Assets and liabilities

Values attributable to the road network, bridges, tunnels and other types of infrastructure, machinery, installations and other assets; short- and long-term debts. Bases for depreciation and revaluation.

### 9.3 Indicators of profitability

Relation of income and expenditure on roads to tolls collected.

### 9.4 Cash flows

Sources and disposition of funds, by type of expenditure and governmental level: general budgets, special funds, user charges, loans, etc., destined for acquisition of right-of-way, construction, improvement, maintenance, purchase of equipment, studies, general administrative expenses, etc.

### 9.5 Audits

Procedures for auditing accounts. Audit reports.

### 9.6 Budgets

Budgetary methods and procedures; degree of compliance with budgets and main reasons for divergences.

### 9.7 Financial projections

Forecasts of income and expenditures, debt servicing and cash flows. Bases for calculations.

## 10. PLANNING

### 10.1 Policy guidelines

Policy guidelines for overall or transport sector development contained in official statements by high government authorities, and their implicit or explicit relation to road development.

### 10.2 Diagnoses, strategies and long-term policies

Diagnoses, strategies and long-term policies for overall or transport sector development, and their relation to road development.

### 10.3 Medium- and short-term policies, objectives and measures

Medium- and short-term policies, objectives and measures for the improvement and development of roads. Relation and consistency of the objectives of road policies with those of other modes of transport and of other sectors of the economy.

### 10.4 Plans

Existence and scope of overall or sectorial development plans that affect roads; targets for road development to meet expected demands for road transport.

### 10.5 Institutional improvement programmes

Programmes for improving the institutional organization or administrative efficiency of agencies responsible for roads; estimates of human and material resources required, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

### 10.6 Investment programmes

Investment programmes of agencies responsible for roads (construction or improvement of roads or maintenance shops, acquisition of equipment, etc.); estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes (colonization of new territories, elimination of physical bottlenecks, reduction of costs, etc.). Relation to previous programmes. Projects included in the programmes; criteria for their selection (see description of investment projects in Section 20).

/10.7 Special

10.7 Special maintenance programmes

Special programmes for the maintenance or rehabilitation of roads, apart from normal maintenance programmes; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

10.8 Sources of financing

Sources of financing for programmes (special sources, government funds, domestic or foreign loans, etc.). Estimates of timeliness of financing with respect to schedules for implementation of programmes and projects; relation between programme financing and road budgets.

10.9 Responsibility for plans, programmes and projects

Responsibility for the preparation of road plans and programmes; organization, methodologies and criteria used in their preparation; procedures for their approval. Process of formulation, development and approval of projects; methods used for project evaluation.

10.10 Programme and project control

Mechanisms for control of programme and project implementation. Procedures for modifying priorities of programme elements in light of changes in the circumstances or conditions that originally determined them.

10.11 Past investments

Investments made in roads in recent years and their apparent effects. Relation between investments programmed, budgeted and carried out.

## 11. EFFECTS ON THE ENVIRONMENT

Details of this subject are now being studied, and additional subheadings will be incorporated in the next revision of the Information Classification Manual.

### 11.1 Environmental pollution

Statistics and studies about problems of environmental pollution related to roads.

## 20. INVENTORY OF INVESTMENT PROJECTS

Description of investment projects for roads, from those still in the conceptual stage to those under construction or completed, indication for each project information such as: name of the project; physical location; whether national or multinational (or of potential importance to regional integration); existing studies; main technical and economic characteristics, including costs of the projects in local currency and foreign exchange, optimum year for placing in service, manpower requirements during construction and economic life; expected economic and social benefits; related projects in the transport sector or in other sectors of the economy; physical and financial programming; sources of financing; information on physical and financial supervision of construction; data on utilization (traffic) of the resulting infrastructure or installations, so as to make possible a post-evaluation of the investment.

### 30. FLOWS AND QUALITY OF INFORMATION

#### 30.1 Flow diagrams

Flow diagrams of procedures for collecting, processing and filing information generated by the agencies responsible for roads, indicating the destination (users) of this information at each stage of transformation or level of aggregation of the data. Forms or computer printouts used at the different stages of processing.

#### 30.2 Quality of information

Timeliness, accuracy and relevance of the information collected in relation to needs for planning and administration.

#### 40. TECHNICAL ASSISTANCE

Technical assistance for roads, financed by grants or loans from international organizations or individual governments: aid in the formulation of policies or strategies, preparation of plans or programmes, evaluation or preparation of projects, improvement of organization, administration, operations or maintenance, development of information systems, etc. Types of assistance provided; periods during which provided; reports produced. Degree of government participation in the form of financial or professional counterparts. Evaluation of technical assistance projects.

## 50. GENERAL AND METHODOLOGICAL ASPECTS 7/

### 50.1 General aspects

General basic concepts related to roads. Theoretical reference works.

### 50.2 Methods of planning and operation

Methodologies and models for the planning and operation of roads, such as traffic forecasting methods, simulation models or systems of user charges.

### 50.3 Technical characteristics

Physical design and construction characteristics for infrastructure and installations, of interest as references for general application. Mathematical models for design calculations.

### 50.4 Research programmes

Programmes of research related to roads.

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7/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis for the national transport sector.

Chapter CS

ROAD TRANSPORT SERVICES

1. ORGANIZATION AND ADMINISTRATION

1.1 Existing road transport enterprises

List of road transport enterprises (companies, associations or co-operatives, and individual owner-operators). Local and foreign enterprises authorized to provide international services for the country, by type of service. History of the companies and of the road transport system in general.

1.2 Establishment of road transport enterprises

Laws, statutes and decrees that establish or regulate the establishment of road transport enterprises. Register of ownership; degree of government participation.

1.3 Institutional framework

Relations of the road transport enterprises with the government: institutional organization within which the enterprises operate; government agencies that regulate them, especially in respect to their services, rates and investments. Relations and agreements among domestic road transport enterprises. Relations with clients: limitations and obligations toward users; liability; contracts of carriage and their conditions.

1.4 Administrative organization

Organization of road transport enterprises. Functions, responsibilities and authority of their various departments. Administrative procedures.

1.5 Institutional changes

Institutional or administrative changes in the organization of road transport in recent years, and their effects.

1.6 International agreements

Bilateral and multilateral agreements and conventions - intergovernmental and among enterprises - in force, to be ratified and being studied that affect road transport.

## 2. LABOUR FORCE

### 2.1 Level and qualification

Number of employees of the road transport enterprises (companies, associations or co-operatives of owners, and individual owner-operators), independent maintenance and repair shops, and firms selling vehicle parts and supplies, by individual enterprise and in total, broken down into main categories. Average income in each category. Availability of trained personnel.

### 2.2 Personnel policy

Standards and procedures for hiring, training, promotion, retirement, vacations, free life and unemployment insurance, etc. Welfare services. Medical, health and safety provisions. Current planning of the labour force.

### 2.3 Wage policy

Recent evolution of remunerations; wage scales and increments.

### 2.4 Training

Training facilities and programmes.

### 2.5 Labour relations

Labour laws. Number and type of unions operating in the road transport enterprises; mechanisms for settling labour disputes; role of the government in labour relations; recent history of labour relations. Personnel turnover.

### 3. VEHICLES

#### 3.4 Vehicles

Inventory of the motor vehicle fleet, indicating number of vehicles registered in the country classified by type and capacity (automobiles, taxis, buses, light lorries, heavy lorries, etc.) and by enterprise (company, association or co-operative of owners, individual owner-operator); age distribution of the fleet by type of vehicle. Present physical condition of the motor vehicle fleet; recent and projected acquisitions and withdrawals of vehicles. Number of foreign vehicles operated in regular service to the country, by type and capacity. Responsibility for carrying out inventories of vehicles; date of last inventory; degree of reliability.

#### 3.5 Useful life

Real economic life of vehicles, and useful life considered for the calculation of depreciation.

#### Vehicle maintenance shops and equipment

Classified under 4.5 and 4.7.

4. MAINTENANCE AND REPAIR OF VEHICLES

4.4 Vehicles

Vehicle maintenance and repair methods and operations used by the road transport enterprises (companies, associations or co-operatives of owners, and individual owner-operators).

4.5 Maintenance equipment and shops

Availability and condition of vehicle maintenance and repair equipment and shops owned by the road transport enterprises; availability of adequate stocks of spare parts.

4.6 Standard quantities and costs

Standard quantities of materials, labour and equipment that should be used for each vehicle maintenance or repair operation identifiable. Local currency and foreign exchange unit costs of these operations, with and without taxes.

4.7 Independent shops

Availability and condition of independent vehicle maintenance and repair shops that provide services for the road transport enterprises; availability of equipment and spare parts.

4.8 Dismantling and disposal of disused vehicles

## 5. CONSTRUCTION OR IMPORTATION OF VEHICLES

### 5.1 Design standards

Design standards for the construction of vehicles and bodies; main design criteria such as dimensions and weight, products to be transported and features of the existing or planned road network. Bases for specifying standards.

### 5.2 Vehicle acquisition policies

Policies regarding domestic production and importation of vehicles. Legal and administrative provisions for the importation of vehicles.

### 5.4 Register of firms

#### 5.4.3 Construction firms

Register of domestic firms that manufacture or assemble vehicles; production capacity; annual production by make and type of vehicle; financial situation; etc.

#### 5.4.4 Importers

Register of firms that import vehicles and parts; annual imports by make and type of vehicle; financial situation; etc.

### 5.5 Average prices

Average prices of the main types of vehicles and bodies in local currency and foreign exchange, with and without taxes.

## 6. TRAFFIC AND SERVICES

### 6.1 Services

Passenger and freight services and itineraries offered by road transport enterprises (companies, associations or co-operatives of owners, and individual owner-operators), classified by route; quality of the services. International services. Establishment and government regulation of services.

### 6.2 Passenger traffic

Past and projected traffic: number of passengers and passenger-kilometres carried by the principal passenger transport enterprises, classified by routes and types of vehicles; origins and destinations; seasonal patterns. International traffic.

### 6.3 Freight traffic

Past and projected traffic: number of tons and ton-kilometres carried by the principal freight transport enterprises, classified by routes, main products and types of vehicles; movements of unitized freight; origins and destinations. International traffic.

### 6.4 Operations

Statistics and forecasts of operations by the principal enterprises: number of trips, vehicle-kilometres, etc., classified by routes and types of vehicles. Operating procedures other than those related to safety.

### 6.5 Safety and accidents

Road accident statistics. Causes and consequences. Road safety code; degree of compliance. Driver licensing requirements and procedures.

## 7. OPERATING EFFICIENCY AND COSTS

### 7.3 Vehicles

For each principal road transport enterprise (firm, association or co-operative of owners, or individual owner-operator), indicators of efficiency such as average kilometres travelled by passenger and freight vehicles on interurban roads, vehicle load factors and average trip distances, classified by type of vehicle; estimated averages for all enterprises. Forecasts of operating efficiency; bases for calculations.

### 7.4 Operating costs

With and without taxes, in local currency and foreign exchange.

#### 7.4.1 By nature

Total costs per principal road transport enterprise of wages and salaries (including social welfare contributions) fuel, spare parts, tires, insurance, interest, depreciation, etc.; estimated costs for typical individual owner-operators.

#### 7.4.2 By function

Total costs per principal road transport enterprise of transport, operation of terminals and shops, marketing, general management, etc.; estimated costs for typical individual owner-operators.

#### 7.4.3 Unit costs

For each principal road transport enterprise, average costs per vehicle-kilometre, passenger-kilometre and ton-kilometre, classified by routes, types of vehicles, types of roads (paved, gravel, earth) and types of terrain (flat, rolling, mountainous); estimated costs for typical individual owner-operators.

#### 7.4.4 Bases for calculation

Bases for calculating operating costs. Use of the virtual distance method for different types of terrain and roads.

### 7.5 Consumption

Real total and unit consumption of the principal inputs used by road transport, by type of input. Productivity per unit of critical inputs such as energy.

## 8. RATES

### 8.1 Structures and levels

Structures and levels of commercial road transport rates for passengers and freight, point-to-point and per passenger-kilometre or ton-kilometre, classified by routes; special rates for containers; rates for international services. Capacity of road transport enterprises (firms, associations or co-operatives of owners, and individual owner-operators) to negotiate rates with shippers; examples of negotiated rates; proportion and type of traffic carried under negotiated rates. Relation of road transport rates to rates of competing modes. Recent and proposed changes in rates.

### 8.2 Government regulation and control

Government regulation and control of public road transport rates. Degree of compliance with rates established by the government or by carrier associations or co-operatives.

### 8.3 Revenues

Revenues derived by the principal road transport enterprises from road transport rates, and their relation to the costs of providing the corresponding services. Estimates for typical individual owner-operators.

### 8.4 Bases for calculations

Bases for calculating road transport rates.

## 9. FINANCIAL SITUATION

### 9.1 Income and expenditures

Statements of income and expenditures, classified by main categories, of the principal road transport enterprises (firms, associations or co-operatives of owners, and individual owner-operators); details of write-offs for depreciation and of debt servicing. Estimates of income and expenditures for individual owner-operators. Agreements with the government regarding subsidies.

### 9.2 Assets and liabilities

Value of fixed assets, revaluations, accounts receivable, cash on hand and other assets of the principal enterprises; current liabilities (short- and long-term debts) and deferred liabilities (capital and reserves). Estimates of assets and liabilities for individual owner-operators. Accounts with the government. Bases for depreciation and revaluation.

### 9.3 Indicators of profitability

Financial profitability indicators on average net fixed assets; ratio of indebtedness to net assets, operating ratios, etc.

### 9.4 Cash flows

Sources and disposition of funds; financing of investments; changes in working capital of the principal enterprises. Estimates for individual owner-operators.

### 9.5 Audit

Procedures for auditing accounts. Audit reports.

### 9.6 Budgets

Budgetary methods and procedures of the principal enterprises; requirement for government approval of budgets; degree of compliance with budgets and main reasons for divergences.

### 9.7 Financial projections

Forecasts of income and expenditures, expected rate of return on average net fixed assets and other indicators, debt servicing and cash flows. Bases for calculations.

## 10. PLANNING

### 10.1 Policy guidelines

Policy guidelines for overall or transport sector development contained in official statements by high government authorities, and their implicit or explicit relation to road transport development.

### 10.2 Diagnoses, strategies and long-term policies

Diagnoses, strategies and long-term policies for overall or transport sector development, and their relation to road transport development.

### 10.3 Medium- and short-term policies, objectives and measures

Medium- and short-term policies, objectives and measures for the improvement and development of road transport. Relation and consistency of the objectives of road transport policies with those of other modes of transport and of other sectors of the economy.

### 10.4 Plans

Existence and scope of overall or sectorial development plans that affect road transport; targets for road transport service development to meet expected demands for road transport.

### 10.5 Institutional improvement programmes

Programmes for improving the institutional organization or administrative efficiency of road transport enterprises (firms, associations or co-operatives of owners and individual owner-operators); estimates of human and material resources required, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

### 10.6 Investment programmes

Investment programmes of road transport enterprises (construction of shops, replacement or addition of vehicles, etc.); estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes (expansion of capacity, reduction of costs, etc.). Relation to previous programmes. Elements included in the programmes; criteria used for their selection (see description of investment projects in Section 20).

/10.7 Special

10.7 Special maintenance programmes

Special programmes for the maintenance or rehabilitation of vehicles, apart from normal maintenance programmes; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

10.8 Sources of financing

Sources of financing for programmes (own income, incentive credits for certain types of enterprises, credit by suppliers, etc.).

10.11 Past investments

Investments made in vehicles in recent years and their apparent effects. Relation between investments programmed, budgeted and carried out.

## 11. EFFECTS ON THE ENVIRONMENT

Details of this subject are now being studied, and additional subheadings will be incorporated in the next revision of the Information Classification Manual.

### 11.1 Environmental pollution

Statistics and studies about problems of environmental pollution related to road transport services.

## 20. INVENTORY OF INVESTMENT PROJECTS

Description of investment projects for road transport services, from those still in the conceptual stage to those under construction or completed, indicating for each project information such as: name of the project; physical location; whether national or multinational (or of potential importance to regional integration); existing studies; main technical and economic characteristics, including costs of the project in local currency and foreign exchange, optimum year for placing in service, manpower requirements during construction and economic life; expected economic and social benefits; related projects in the transport sector or in other sectors of the economy; physical and financial programming; sources of financing; information on physical and financial supervision of construction; data on utilization of the resulting installations or equipment, so as to make possible a post-evaluation of the investment.

### 30. FLOWS AND QUALITY OF INFORMATION

#### 30.1 Flow diagrams

Flow diagrams of procedures for collecting, processing and filing information generated by the road transport enterprises (firms, associations or co-operatives of owners, and individual owner-operators), indicating the destination (users) of this information at each stage of transformation or level of aggregation of the data. Forms or computer printouts used at the different stages of processing.

#### 30.2 Quality of information

Timeliness, accuracy and relevance of the information collected in relation to needs for planning and administration.

#### 40. TECHNICAL ASSISTANCE

Technical assistance for road transport services, financed by grants or loans from international organizations or individual governments: aid in the formulation of policies or strategies, preparation of plans or programmes, evaluation or preparation of projects, improvement of organization, administration, operations or maintenance, development of information systems, etc. Types of assistance provided; periods during which provided; reports produced. Degree of government participation in the form of financial or professional counterparts. Evaluation of technical assistance projects.

## 50. GENERAL AND METHODOLOGICAL ASPECTS 8/

### 50.1 General aspects

General basic concepts related to road transport services. Theoretical reference works.

### 50.2 Methods of planning and operation

Methodologies and models for the planning and operation of road transport services, such as traffic forecasting methods, simulation models or rate systems.

### 50.3 Technical characteristics

Physical design and construction characteristics of vehicles, of interest as references for general application. Mathematical models for design calculations.

### 50.4 Research programmes

Programmes of research related to road transport services.

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8/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis of the national transport sector.

Chapter DT

PIPELINE TRANSPORT

1. ORGANIZATION AND ADMINISTRATION

1.1 Existing pipeline transport companies

List of companies and departments or divisions of governmental agencies responsible for operating, maintaining and constructing pipelines (petroleum, gas, solids and multiple purpose pipelines) for domestic and international service. History of these companies and of the pipeline transport system in general.

1.2 Establishment of pipeline transport companies

Laws, statutes and decrees that establish or regulate the establishment of pipeline companies. Register of ownership; degree of government participation.

1.3 Institutional framework

Relations of the pipeline companies with the government: institutional organization within which the pipeline companies operate; government agencies that regulate them, especially in respect to their services, rates and investments. Relations and agreements among domestic pipeline companies. Relations with clients: limitations and obligations toward users; liability; contracts of carriage and their conditions.

1.4 Administrative organization

Organization of the pipeline companies. Functions, responsibilities and authority of their various departments. Administrative procedures.

1.5 Institutional changes

Institutional or administrative changes in the organization of pipeline transport in recent years, and their effects.

1.6 International agreements

Bilateral and multilateral agreements and conventions - intergovernmental and among companies - in force, to be ratified and being studied that affect pipeline transport.

## 2. LABOUR FORCE

### 2.1 Level and qualification

Number of employees of the pipeline transport companies, by individual company and in total, broken down into main categories. Average income in each category. Availability of trained personnel.

### 2.2 Personnel policy

Standards and procedures for hiring, training, promotion, retirement, free life and unemployment insurance, vacations, etc. Medical, health and safety provisions. Welfare services. Current planning of the labour force.

### 2.3 Wage policy

Recent evolution of remunerations; wage scales and increments.

### 2.4 Training

Training facilities and programmes.

### 2.5 Labour relations

Labour laws. Number and type of unions operating in the pipeline transport companies; mechanisms for settling labour disputes; role of the government in labour relations; recent history of labour relations. Personnel turnover.

### 3. INFRASTRUCTURE AND INSTALLATIONS

#### 3.1 Pipelines

Inventory of pipelines by company and location, indicating material transported (crude petroleum, refined products, gas, mineral slurry, etc.), length, diameter, capacity, number and type of pumping stations, etc. Present physical condition of the pipelines; recent construction or reconstruction projects. Information about international pipelines. Responsibility for carrying out inventories of pipelines; date of last inventory; degree of reliability.

#### 3.2 Tank farms

Inventory of storage tanks for materials transported by pipeline, by company and location, indicating number, size, connexion to distribution systems or centres of consumption, etc. Present physical condition of the tank farms; recent construction or reconstruction projects. Connexions to other modes of transport.

#### 3.3 Communications systems

Inventory by company of communications systems for the operation of pipelines.

#### 3.5 Useful life

Real economic life of pipeline infrastructure and installations, and useful life considered for the calculation of depreciation.

#### Pipeline maintenance and repair shops and equipment

Classified under 4.5.

#### 4. MAINTENANCE AND REPAIR OF INFRASTRUCTURE AND INSTALLATIONS

##### 4.1 Pipelines

Maintenance and repair methods and operations for pipelines and pumping plants.

##### 4.2 Tank farms

Maintenance and repair methods and operations for tank farms.

##### 4.3 Communications systems

Maintenance and repair methods and operations for pipeline communications systems.

##### 4.5 Maintenance equipment and shops

Availability and condition of equipment and shops owned by the pipeline transport companies for the maintenance and repair of pipelines, pumping plants, and tank farms.

##### 4.6 Standard quantities and costs

Standard quantities of materials, labour and equipment that should be used for each maintenance or repair operation identifiable for pipeline infrastructure and installations. Local currency and foreign exchange unit costs of these operations, with and without taxes.

##### 4.8 Dismantling and disposal of disused pipelines

5. DESIGN AND CONSTRUCTION OF INFRASTRUCTURE  
AND INSTALLATIONS

5.1 Design standards

Design standards for the construction of crude petroleum, products, gas and slurry pipelines; main design criteria for pipelines, pumping stations, tank farms, etc. Bases for specifying standards.

5.2 Policies for the execution and supervision of works and studies

Policies regarding the execution and supervision of pipeline projects by administration or by domestic or foreign contractors. Procedures for bids and the supervision of contracts. Legal and administrative provisions for the importation of equipment and materials. Policies regarding the execution of studies by administration or by contract.

5.3 Capacity for design and construction by administration

Capacity of the agencies responsible for the pipelines to carry out economic and engineering studies and to execute or supervise construction projects.

5.4 Register of firms

5.4.1 Consultants

Register of domestic and foreign consulting firms that carry out economic or engineering studies or supervise projects; type of work performed; capacity for execution; financial situation; etc.

5.4.2 Construction firms

Register of domestic and foreign construction firms; type of work they perform; capacity for execution; financial situation; etc.

5.4.3 Manufacturers

Register of domestic firms that manufacture or assemble pipeline equipment and materials; production capacity; annual production; financial situation; etc.

/5.4.4 Importers

#### 5.4.4 Importers

Register of firms that import pipeline equipment and materials; financial situation; etc.

#### 5.5 Inputs and costs of construction

Standard or average quantities of materials, labour, equipment and other inputs that serve as a basis for estimating investment costs for the construction or improvement of pipeline infrastructure and installations. Local currency and foreign exchange unit costs of these inputs, with and without taxes. Geographic location and availability of inputs.

## 6. TRAFFIC AND SERVICES

### 6.1 Services

Distribution services from tank farms to users offered by pipeline companies; services offered to third parties; quality of the services. International services. Establishment and government regulation of services.

### 6.3 Traffic

Past and projected traffic: volumes and tonnages transported by pipelines, classified by type of line (oil, multiple purpose, gas and solids pipelines); seasonal patterns. International traffic.

### 6.4 Operations

Statistics and forecasts of pipeline operations: operating times, etc., classified by material transported; times out of service; reasons for being out of service. Operating procedures other than those related to safety.

### 6.5 Safety and accidents

Pipeline transport accident statistics. Causes and consequences. Safety standards and compliance with them.

## 7. OPERATING EFFICIENCY AND COSTS

### 7.1 Pipelines

For each pipeline transport company, indicators of efficiency such as average pipeline useage (tonnage or volume carried in relation to pumping capacity); level of congestion in relation to demand. Forecasts of operating efficiency; bases for calculations.

### 7.4 Operating costs

With and without taxes, in local currency and foreign exchange.

#### 7.4.1 By nature

Total costs per pipeline transport company of wages and salaries (including social welfare contributions), energy, insurance, interest, depreciation (of pipes, pumping stations and tank farms), etc.

#### 7.4.2 By function

Total costs per pipeline transport company of operating pipelines and tank farms, maintenance, marketing, general management, etc.

#### 7.4.3 Unit costs

For each pipeline transport company, average costs per hour of operation, ton-kilometre, unit of volume transported, etc.

#### 7.4.4 Bases for calculations

Bases for calculating operating costs.

### 7.5 Consumption

Real total and unit consumption of the principal inputs used by pipelines, by type of input. Productivity per unit of critical inputs such as energy.

### 3. RATES

#### 8.1 Structures and levels

Structures and levels of commercial pipeline transport rates, per unit of volume point-to-point and per ton-kilometre; rates for international services. Relation of pipeline transport rates to rates of competing modes. Recent and proposed changes in rates.

#### 8.2 Government regulation and control

Government regulation and control of pipeline transport rates.

#### 8.3 Revenues

Revenues derived from pipeline transport rates, and their relation to the costs of providing the corresponding facilities and services.

#### 8.4 Bases for calculations

Bases for calculating pipeline transport rates.

## 9. FINANCIAL SITUATION

### 9.1 Income and expenditures

Statements of income and expenditures, classified by main categories, of the pipeline transport companies; details of write-offs for depreciation and of debt servicing; agreements with the government regarding subsidies.

### 9.2 Assets and liabilities

Value of fixed assets, revaluations, accounts receivable, cash on hand and other assets; current liabilities (short- and long-term debts) and deferred liabilities (capital and reserves). Accounts with the government. Bases for depreciation and revaluation.

### 9.3 Profitability indicators

Financial profitability indicators on average net fixed assets, ratio of indebtedness to net assets, operating ratios, etc.

### 9.4 Cash flows

Sources and disposition of funds; financing of investments; changes in working capital.

### 9.5 Audits

Procedures for auditing accounts. Audit reports.

### 9.6 Budgets

Budgetary methods and procedures; requirement for government approval of budgets; degree of compliance with budgets and main reasons for divergences.

### 9.7 Financial projections

Forecasts of income and expenditures, expected rate of return on average net fixed assets and other indicators, debt servicing and cash flows. Bases for calculations.

## 10. PLANNING

### 10.1 Policy guidelines

Policy guidelines for overall or transport sector development contained in official statements by high government authorities, and their implicit or explicit relation to pipeline transport development.

### 10.3 Medium- and short-term policies, objectives and measures

Medium- and short-term policies, objectives and measures for the improvement and development of pipeline transport. Relation and consistency of the objectives of pipeline transport policies with those of other modes of transport and of other sectors of the economy.

### 10.4 Plans

Existence and scope of overall or sectorial development plans that affect pipeline transport; targets for pipeline development to meet expected demands for pipeline transport.

### 10.5 Institutional improvement programmes

Programmes for improving the institutional organization or administrative efficiency of pipeline transport companies; estimates of human and material resources required, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

### 10.6 Investment programmes

Investment programmes of pipeline transport companies (construction of pipelines, construction or expansion of tank farms, etc.); estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes (creation or expansion of export capacity for crude petroleum or refined products, reduction of costs, etc.). Relation to previous programmes. Projects included in the programmes; criteria for their selection (see description of investment projects in Section 20).

### 10.7 Special maintenance programmes

Special programmes for the maintenance or rehabilitation of pipelines, apart from normal maintenance programmes; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

### /10.8 Sources

10.8 Sources of financing

Sources of financing for programmes (own income, government contributions, domestic or foreign loans, etc.). Estimates of timeliness of financing with respect to schedules for implementation of programmes and projects; relation between programme financing and pipeline budgets.

10.9 Responsibility for plans, programmes and projects

Responsibility for the preparation of pipeline plans and programmes; organization, methodologies and criteria used in their preparation; procedures for their approval. Process of formulation, development and approval of projects; methods used for project evaluation.

10.10 Programme and project control

Mechanisms for control of programme and project implementation. Procedures for modifying priorities of programme elements in light of changes in the circumstances or conditions that originally determined them.

10.11 Past investments

Investments made in pipelines in recent years and their apparent effects. Relation between investments programmed, budgeted and carried out.

## 11. EFFECTS ON THE ENVIRONMENT

Details of this subject are now being studied, and additional subheadings will be incorporated in the next revision of the Information Classification Manual.

### 11.1 Environmental pollution

Statistics and studies about problems of environmental pollution related to pipeline transport.

## 20. INVENTORY OF INVESTMENT PROJECTS:

Description of investment projects for pipeline transport, from those still in the conceptual stage to those under construction or completed, indicating for each project information such as: name of the project; physical location; whether national or multinational (or of potential importance to regional integration); existing studies; main technical and economic characteristics, including costs of the project in local currency and foreign exchange, optimum year for placing in service, manpower requirements during construction and economic life; expected economic and social benefits; related projects in the transport sector or in other sectors of the economy; physical and financial programming; sources of financing; information on physical and financial supervision of construction; data on utilization (traffic) of the resulting infrastructure or installations, so as to make possible a post-evaluation of the investment.

### 30. FLOWS AND QUALITY OF INFORMATION

#### 30.1 Flow diagrams

Flow diagrams of procedures for collecting, processing and filing information generated by the pipeline transport companies, indicating the destination (users) of this information at each stage of transformation or level of aggregation of the data. Forms or computer printouts used at the different stages of processing.

#### 30.2 Quality of information

Timeliness, accuracy and relevance of the information collected in relation to needs for planning and administration.

#### 40. TECHNICAL ASSISTANCE

Technical assistance for pipeline transport, financed by grants or loans from international organizations or individual governments: aid in the formulation of policies or strategies, preparation of plans or programmes, evaluation or preparation of projects, improvement of organization, administration, operations or maintenance, development of information systems, etc. Types of assistance provided; periods during which provided; reports produced. Degree of government participation in the form of financial or professional counterparts. Evaluation of technical assistance projects.

50. GENERAL AND METHODOLOGICAL ASPECTS 9/

50.1 General aspects

General basic concepts related to pipeline transport. Theoretical reference works.

50.2 Methods of planning and operation

Methodologies and models for the planning and operation of pipeline transport, such as traffic forecasting methods, simulation models or rate systems.

50.3 Technical characteristics

Physical design and construction characteristics for infrastructure and installations, of interest as references for general application. Mathematical models for design calculations.

50.4 Research programmes

Programmes of research related to pipeline transport.

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9/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis of the national transport sector.

Chapter FT

RAIL TRANSPORT

1. ORGANIZATION AND ADMINISTRATION

1.1 Existing railways

List of railways operating in the country. National and foreign companies that operate joint international services. History of the companies and of the rail transport system in general.

1.2 Establishment of railways

Laws, statutes and decrees that establish or regulate the establishment of railways. Register of ownership; degree of government participation.

1.3 Institutional framework

Relations of the railways with the government: institutional organization within which the railways operate; government agencies that regulate them, especially in respect to their services, rates and investments. Relations and agreements among domestic railways. Relations with clients: limitations and obligations toward users; liability; contracts of carriage and their conditions.

1.4 Administrative organization

Organization of the railways. Functions, responsibilities and authority of their various departments. Administrative procedures.

1.5 Institutional changes

Institutional or administrative changes in the organization of rail transport in recent years, and their effects.

1.6 International agreements

Bilateral and multilateral agreements and conventions - intergovernmental and among railways - in force, to be ratified and being studied that affect rail transport, such as those concerning the interchange of rolling stock.

## 2. LABOUR FORCE

### 2.1 Level and qualification

Number of employees of the railways, by individual railway and in total, broken down into main categories. Average income in each category. Availability of trained personnel.

### 2.2 Personnel policy

Standards and procedures for hiring, training, promotion, retirement, free life and unemployment insurance, vacations, etc. Medical, health and safety provisions. Welfare services. Current planning of the labour force.

### 2.3 Wage policy

Recent evolution of remunerations; wage scales and increments.

### 2.4 Training

Training facilities and programmes.

### 2.5 Labour relations

Labour laws. Number and type of unions operating in the railways; mechanisms for settling labour disputes; role of the government in labour relations; recent history of labour relations. Personnel turnover.

### 3. INFRASTRUCTURE, INSTALLATIONS AND EQUIPMENT

#### 3.1 Way

Inventory of railways by length and location, indicating: single, double or multiple track; gauge; weight of rail; rail welded or unwelded; type and quantity of sleepers per kilometre; kind and condition of ballast; number and length of bridges, tunnels and sidings; maximum axle load; length of electrified track, type and voltage of current used; etc. Track alignment diagrams, showing grades, degrees of curvature, altitudes, maximum speeds, and grade crossings. Present physical condition of the railways; recent construction or reconstruction projects. Line capacity as a function of technical characteristics, signalling system and physical condition. Responsibility for carrying out inventories of railways; date of last inventory; degree of reliability. Recent and proposed abandonment of lines and stations; policies concerning abandonment.

#### 3.2 Stations and yards

Inventory by railway and location of: passenger and freight stations, indicating number of tracks, length of platforms, capacity of warehouses, presence of customs facilities, etc.; marshalling yards, indicating number and length of tracks, number of wagons that can be handled per unit time, use of automation in wagon handling, lighting systems, etc. Present physical condition of terminals and yards; recent construction and reconstruction projects. Connexions with other modes of transport.

#### 3.3 Signalling and communications systems

Inventory of signalling and telecommunications systems, by railway and line section, indicating adequacy in relation to traffic requirements.

#### 3.4 Transport equipment

Inventory by railway of: rolling stock for goods and passengers, indicating type, age, condition, braking and coupling systems, axle arrangement, and capacity of steam, diesel and electric locomotives, self-propelled cars, passenger coaches, mail and luggage vans, and goods wagons; other equipment, such as loaders, cranes, containers, road vehicles, ferries, barges, etc., indicating their type, age and location. Present condition of equipment; recent acquisitions and withdrawals of equipment. Number of units of foreign rolling stock operated in regular service to the country, according to type and capacity.

3.5 Useful life

Real economic life of infrastructure, installations and equipment, and useful life considered for the calculation of depreciation.

Railway maintenance shops and equipment

Classified under 4.5 and 4.7.

4. MAINTENANCE AND REPAIR OF INFRASTRUCTURE,  
INSTALLATIONS AND EQUIPMENT

4.1 Way

Maintenance and repair methods and operations for right-of-way, ballast, rails, sleepers, bridges and tunnels; programmes for renewing rails and sleepers; degree of mechanization of work.

4.2 Stations and yards

Maintenance and repair methods and operations for stations and yards.

4.3 Signalling and communications systems

Maintenance and repair methods and operations for signalling and communications systems.

4.4 Transport equipment

Maintenance and repair methods and operations for rolling stock and handling equipment.

4.5 Maintenance equipment and shops

Availability and condition of equipment and shops owned by the railways for the maintenance and repair of infrastructure, rolling stock and installations; availability of adequate stocks of spare parts.

4.6 Standard quantities and costs

Standard quantities of materials, labour and equipment that should be used for each maintenance or repair operation identifiable for infrastructure, rolling stock and installations. Local currency and foreign exchange unit costs of these operations, with and without taxes.

4.7 Independent shops

Availability and condition of independent maintenance and repair shops for rail equipment; nature and value of the work done; availability of equipment and spare parts.

4.8 Dismantling and disposal of disused equipment

## 5. DESIGN AND CONSTRUCTION OF INFRASTRUCTURE, INSTALLATIONS AND EQUIPMENT

### 5.1 Design standards

Design standards for the construction and improvement of way, bridges, tunnels, signalling systems, yards, shops, stations and rolling stock; main design criteria such as speeds on tangents and curves, minimum radii of curvature, weights of rails, types of sleepers, maximum support capacity per equivalent axle, and minimum clearances for bridges and tunnels. Bases for specifying standards.

### 5.2 Policies for the execution and supervision of works and studies

Policies regarding the execution and supervision of rail projects by administration or by domestic or foreign contractors. Procedures for bids and the supervision of contracts. Legal and administrative provisions for the importation of equipment and materials. Policies regarding the execution of studies by administration or contract.

### 5.3 Capacity for design and construction by administration

Capacity of railways to carry out economic and engineering studies and to execute or supervise construction or improvement projects.

### 5.4 Register of firms

#### 5.4.1 Consultants

Register of domestic and foreign consulting firms that carry out economic or engineering studies or supervise projects; type of work performed; capacity for execution; financial situation; etc.

#### 5.4.2 Construction firms

Register of domestic and foreign construction firms; type of work performed; capacity for execution; financial situation; etc.

#### 5.4.3 Manufacturers

Register of domestic firms that manufacture or assemble railway equipment and materials; production capacity; annual production; financial situation; etc.

#### /5.4.4 Importers

#### 5.4.4 Importers

Register of firms that import railway equipment and materials; financial situation; etc.

#### 5.5 Inputs and costs of construction

Standard or average quantities of materials, labour, equipment and other inputs that serve as a basis for estimating investment costs for the construction or improvement of railway infrastructure, rolling stock and installations. Local currency and foreign exchange unit costs of these inputs, with and without taxes. Geographic location and availability of inputs.

## 6. TRAFFIC AND SERVICES

### 6.1 Services

Passenger and freight services and itineraries offered by railways, classified by routes; quality of services. International services. Establishment and government regulation of services.

### 6.2 Passenger traffic

Past and projected traffic: number of passengers and passenger-kilometres (revenue and non-revenue) transported by the railways, classified by routes, types of line (suburban, main line, branch line), classes and travel distance; origins and destinations; terminal movements; seasonal patterns. International traffic.

### 6.3 Freight traffic

Past and projected traffic: number of tons and ton-kilometres (revenue, non-revenue and railway service) transported by the railways, classified by routes, types of line (suburban, main line, branch line), principal products and travel distance; movements of unitized freight; origins and destinations; terminal movements; seasonal patterns. International traffic.

### 6.4 Operations

Statistics and forecasts of railway operations: number of trains, train-kilometres, etc., classified by routes and types of traffic; traffic density. Operating procedures not related to safety.

### 6.5 Safety and accidents

Railway accident statistics. Causes and consequences. Safety standards and compliance with them.

### 6.6 Delimitation of zone of influence

Delimitation of the zone of influence of each railway; main factors that determine the zone.

## 7. OPERATING EFFICIENCY AND COSTS

### 7.1 Way

For each railway, indicators of efficiency such as the number of days traffic interrupted; gross ton-kilometres per kilometre of track, relations between average daily number of trains, and track capacity, etc., classified by sections of the line. Plans or studies on closure or rationalization of lines that are uneconomical or have low traffic density; railway and government policies regarding abandonment. Forecasts of operating efficiency; bases for calculations.

### 7.2 Stations and yards

For each railway, indicators of efficiency such as average total time per train spent in stations, average tonnage handled, degree of utilization of stations and yards, etc. Forecasts of operating efficiency; bases for calculations.

### 7.3 Transport equipment

For each railroad, indicators of train operating efficiency such as gross passenger-kilometres or gross ton-kilometres per locomotive-kilometre and per wagon-kilometre, wagon load factors and turn-around times, etc. Forecasts of operating efficiency; bases for calculations.

### 7.4 Operating costs

With and without taxes; in local currency and foreign exchange.

#### 7.4.1 By nature

Total costs per railway of wages and salaries (including social welfare contributions), fuel, materials, insurance, interest, depreciation (of rolling stock, way, yards, stations, shops and maintenance equipment), etc.

#### 7.4.2 By function

Total costs per railway of line haul, terminal operations, maintenance, marketing, general management, etc.

#### 7.4.3 Unit costs

For each railway, average costs per passenger, freight or mixed train-kilometre, passenger-kilometre, ton-kilometre, etc.

/7.4.4 Bases

7.4.4 Bases for calculations

Bases for calculating operating costs.

7.5 Consumption

Real total and unit consumption of the principal inputs by the railroads, by type of input. Productivity per unit of critical inputs such as energy.

### 3. RATES

#### 3.1 Structures and levels

Structures and levels of commercial rail transport rates for passengers and freight, point-to-point and per passenger-kilometre or ton-kilometre, classified by routes; special rates for containers and auxiliary transport services; door-to-door rates; rates for international services. Capacity of railways to negotiate rates with shippers; examples of negotiated rates; proportion and type of traffic carried under negotiated rates. Relation of rail transport rates to rates of competing modes. Recent and proposed changes in rates.

#### 3.2 Government regulation and control

Government regulation and control of rail transport rates.

#### 3.3 Revenues

Revenues derived from rail transport rates, and their relation to the costs of providing the corresponding facilities and services.

#### 3.4 Bases for calculations

Bases for calculating rail transport rates.

## 9. FINANCIAL SITUATION

### 9.1 Income and expenditures

Statements of income and expenditures, classified by main categories, of the railways; details of write-offs for depreciation and of debt servicing; agreements with the government regarding subsidies.

### 9.2 Assets and liabilities

Value of fixed assets, revaluations, accounts receivable, cash on hand and other assets; current liabilities (short- and long-term debts) and deferred liabilities (capital and reserves). Accounts with the government. Bases for depreciation and revaluation.

### 9.3 Profitability indicators

Financial profitability indicators on average net fixed assets, ratio of indebtedness to net assets, operating ratios, etc.

### 9.4 Cash flows

Sources and disposition of funds; financing of investments; changes in working capital.

### 9.5 Audits

Procedures for auditing accounts. Audit reports.

### 9.6 Budgets

Budget methods and procedures; requirement for government approval of budgets; degree of compliance with budgets and main reasons for divergences.

### 9.7 Financial projections

Forecasts of income and expenditures, expected rate of return on average net fixed assets and other indicators, debt servicing and cash flows. Bases for calculations.

## 10. PLANNING

### 10.1 Policy guidelines

Policy guidelines for overall or transport sector development contained in official statements by high government authorities, and their implicit or explicit relation to rail transport development.

### 10.2 Diagnoses, strategies and long-term policies

Diagnoses, strategies and long-term policies for overall or transport sector development, and their relation to rail transport development.

### 10.3 Medium- and short-term policies, objectives and measures

Medium- and short-term policies, objectives and measures for the improvement and development of rail transport. Relation and consistency of the objectives of rail transport policies with those of other modes of transport and of other sectors of the economy.

### 10.4 Plans

Existence and scope of overall or sectorial development plans that affect rail transport; targets for railway development to meet expected demands for rail transport.

### 10.5 Institutional improvement programmes

Programmes for improving the institutional organization or administrative efficiency of railway; estimates of human and material resources required, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

### 10.6 Investment programmes

Investment programmes of railways (construction of way, yards or stations, acquisition of rolling stock, etc.); estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of programmes (expansion of capacity, elimination of bottlenecks, reduction of costs, etc.). Relation to previous programmes. Projects included in the programmes; criteria for their selection (see description of investment projects in Section 20).

/10.7 Special

10.7 Special maintenance programmes

Special programmes for the maintenance or rehabilitation of railways, apart from normal maintenance programmes; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

10.8 Sources of financing

Sources of financing for programmes (own income, government contributions, domestic or foreign loans, etc.). Estimates of timeliness of financing with respect to schedules for implementation of programmes and projects; relation between financing and railway budgets.

10.9 Responsibility for plans, programmes and projects

Responsibility for the preparation of railway plans and programmes; organization, methodologies and criteria used in their preparation; procedures for their approval. Process of formulation, development and approval of projects; methods used for project evaluation.

10.10 Programme and project control

Mechanisms for control of programme and project implementation. Procedures for modifying priorities of programme elements in light of changes in the circumstances or conditions that originally determined them.

10.11 Past investments

Investments made in railways in recent years and their apparent effects. Relation between investments programmed, budgeted and carried out.

## 11. EFFECTS ON THE ENVIRONMENT

Details of this subject are now being studied, and additional subheadings will be incorporated in the next revision of the Information Classification Manual.

### 11.1 Environmental pollution

Statistics and studies about problems of environmental pollution related to rail transport.

## 20. INVENTORY OF INVESTMENT PROJECTS

Description of investment projects for rail transport, from those still in the conceptual stage to those under construction or completed, indicating for each project information such as: name of the project; physical location; whether national or multinational (or of potential importance to regional integration); existing studies; main technical and economic characteristics, including costs of the project in local currency and foreign exchange, optimum year for placing in service, manpower requirements during construction and economic life; expected economic and social benefits; related projects in the transport sector or in other sectors of the economy; physical and financial programming; sources of financing; information on physical and financial supervision of construction; data on utilization (traffic) of the resulting infrastructure, installations or transport equipment, so as to make possible a post-evaluation of the investment.

### 30. FLOWS AND QUALITY OF INFORMATION

#### 30.1 Flow diagrams

Flow diagrams of procedures for collecting, processing and filing information generated by the railways, indicating the destination (users) of this information at each stage of transformation or level of aggregation of the data. Forms or computer printouts used at the different stages of processing.

#### 30.2 Quality of information

Timeliness, accuracy and relevance of the information collected in relation to needs for planning and administration.

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rail transport

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#### 40. TECHNICAL ASSISTANCE

Technical assistance for rail transport, financed by grants or loans from international organizations or individual governments: aid in the formulation of policies or strategies, preparation of plans or programmes, evaluation or preparation of projects, improvement of organization, administration, operations or maintenance, development of information systems, etc. Types of assistance provided; periods during which provided; reports produced. Degree of government participation in the form of financial or professional counterparts. Evaluation of technical assistance projects.

/50. GENERAL

50. GENERAL AND METHODOLOGICAL ASPECTS 10/

50.1 General aspects

General basic concepts related to rail transport. Theoretical reference works.

50.2 Methods of planning and operation

Methodologies and models for the planning and operation of rail transport, such as traffic forecasting methods, simulation models or rate systems.

50.3 Technical characteristics

Physical design and construction characteristics for infrastructure, installations and rolling stock, of interest as references for general application. Mathematical models for design calculations.

50.4 Research programmes

Programmes of research related to rail transport.

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10/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis of the national transport sector.

Chapter MI

PORTS

1. ORGANIZATION AND ADMINISTRATION

1.1 Existing ports

List of ports operating in the country. Classification by public and private ports, general and specialized ports, etc. Maps showing the location of the ports thus classified. History of the ports.

1.2 Establishment of ports

Laws, statutes and decrees that establish or regulate the establishment of ports and port authorities. Register of ownership; degree of government participation.

1.3 Institutional framework

Relations of the ports with the government: institutional organization within which the ports operate; government agencies that regulate them, especially in respect to their services, rates and investments. Relations and agreements among ports. Relations with clients: limitations and obligations toward users; liability; contracts with shipping companies.

1.4 Administrative organization

Organization of the agencies responsible for operating, maintaining and constructing ports. Functions, responsibilities and authority of their various departments. Administrative procedures.

1.5 Institutional changes

Administrative or institutional changes carried out in the ports in recent years and their effects.

1.6 International agreements

Intergovernmental agreements and conventions in force, to be ratified and being studied that affect ports, such as those concerning IMCO.

## 2. LABOUR FORCE

### 2.1 Level and qualification

Number of employees in the government or private agencies responsible for the supervision, development and operation of ports, by individual port and in total, broken down into main categories. Average income in each category. Availability of trained personnel.

### 2.2 Personnel policy

Standards and procedures for hiring, training, promotion, retirement, free life and unemployment insurance, vacations, etc. Medical, health, and safety provisions. Welfare services. Current planning of the labour force.

### 2.3 Wage policy

Recent evolution of remunerations; wage scales and increments.

### 2.4 Training

Training facilities and programmes.

### 2.5 Labour relations

Labour laws. Number and type of unions operating in the ports; mechanisms for settling labour disputes; role of the government in labour relations; recent history of labour relations. Personnel turnover.

### 3. INFRASTRUCTURE AND INSTALLATIONS

#### 3.2 Ports

Inventory of ports by location, indicating: location of anchorages in the roadstead, nature and depth of the approach channels, location and number of buoys, number and dimensions of entrance locks and dry docks; number and length of general freight and specialized wharves, areas for containers and roll-on/roll-off traffic, number of warehouses, etc.; capacity of the installations. Present physical condition of the ports; recent construction or reconstruction projects. Hydrographic charts of the ports and their approaches; information contained in the official Pilots' Book and the tide tables. Connexions with other modes of transport. Responsibility for carrying out port inventories; date of last inventory; degree of reliability.

#### 3.3 Signalling and communications systems

Inventory by port of approach lights, marker buoys, beacons and other equipment for communicating with ships.

#### 3.4 Handling equipment

Inventory by port of handling equipment, indicating: availability and capacity of fixed, mobile and floating cranes, equipment used to handle containers and roll-on/roll-off traffic, and other types of fixed, mobile and floating handling equipment; facilities available for moving ships and for other port operations, including tugs, dredges, launches and boats for harbour pilots, etc. Present state of the equipment; recent acquisitions and withdrawals of equipment.

#### 3.5 Useful life

Real economic life of port infrastructure and equipment, and useful life considered for the calculation of depreciation.

#### Port maintenance shops and equipment

Classified under 4.5.

#### 4. MAINTENANCE AND REPAIR OF INFRASTRUCTURE AND INSTALLATIONS

##### 4.2 Ports

Maintenance and repair methods and operations for port marine areas, structures and buildings; degree of mechanization of the operations. Dredging methods and volumes in approaches, turning basins and docks.

##### 4.3 Signalling and communications systems

Maintenance and repair methods and operations for approach lights, marker buoys, beacons and other equipment for communicating with ships.

##### 4.4 Handling equipment

Maintenance and repair methods and operations for fixed, mobile and floating cranes and other handling equipment, tugs, dredges, etc.

##### 4.5 Maintenance equipment and shops

Availability and condition of equipment and shops in the ports for the maintenance and repair of port infrastructure and equipment.

##### 4.6 Standard quantities and costs

Standard quantities of materials, labour and equipment that should be used for each maintenance or repair operation identifiable for port infrastructure and equipment. Local currency and foreign exchange unit costs of these operations, with and without taxes.

## 5. DESIGN AND CONSTRUCTION OF INFRASTRUCTURE AND INSTALLATIONS

### 5.1 Design standards

Design standards for the construction and improvement of wharves, yards, warehouses, handling equipment, etc.; main design criteria such as weight, type of packing and level of danger of the freight, or type, length and draught of ships. Bases for specifying standards.

### 5.2 Policies for the execution and supervision of works and studies

Policies regarding the execution and supervision of port projects by administration or by contract. Procedures for bids and the supervision of contracts. Legal and administrative provisions for the importation of equipment and materials. Policies regarding the execution of studies by administration or by contract.

### 5.3 Capacity for design and construction by administration

Capacity of the agencies responsible for the ports to carry out economic and engineering studies and to execute or supervise construction or improvement projects.

### 5.4 Register of firms

#### 5.4.1 Consultants

Register of domestic and foreign consulting firms that carry out economic or engineering studies or supervise projects; type of work performed; capacity for execution; financial situation; etc.

#### 5.4.2 Construction firms

Register of domestic and foreign construction firms; type of work performed; capacity for execution; financial situation; etc.

#### 5.4.3 Manufacturers

Register of domestic firms that manufacture or assemble port equipment and materials; production capacity; annual production; financial situation; etc.

#### /5.4.4 Importers

#### 5.4.4 Importers

Register of firms that import port equipment and materials; financial situation; etc.

#### 5.5 Inputs and costs of construction

Standard or average quantities of materials, labour, equipment and other inputs that serve as a basis for estimating investment costs for the construction or improvement of port infrastructure and equipment. Local currency and foreign exchange unit costs of these inputs, with and without taxes. Geographic location and availability of inputs.

## 6. TRAFFIC AND SERVICES

### 6.1 Services

Services to ships, passengers and freight offered by the ports; shifts and hours of operation; quality of the services. Establishment and government regulation of services.

### 6.2 Passenger traffic

Past and projected traffic: number of passengers arriving, departing and in transit via the ports; origins and destinations; seasonal patterns.

### 6.3 Freight traffic

Past and projected traffic: number of tons arriving, departing and in transit via the ports, classified by foreign trade or cabotage, main product, means of handling (port cranes or ships' gear, over wharves or in lighters), etc.; origins and destinations; movements of unitized freight; seasonal patterns. Modes of transport employed by traffic to and from hinterland.

### 6.4 Operations

Statistics and forecasts of port operations: number of ships arriving and departing, classified by types and net register tonnage (TNR), etc.; seasonal usage patterns. Operating procedures other than those related to safety.

### 6.5 Safety and accidents

Port accident statistics. Causes and consequences. Safety standards and compliance with them.

### 6.6 Delimitation of zone of influence

Delimitation of the zone of influence of each port; main factors that determine the zone, e.g.: location of the country's resources, industries, population centres, export surpluses or import needs, or functions of the port as an entrance or exit for trade in transit to and from other countries.

## 7. OPERATING EFFICIENCY AND COSTS

### 7.2 Ports

For each port, indicators of efficiency such as average total time in port per ship, average unproductive time in port per ship, for reasons attributable to the port (lack of pilots, administrative delay, strike, etc.), average tonnages handled per wharf and per linear metre of wharf for general and specialized freight, manpower productivity in loading and stowing (gross and net tonnage per gang-hour for the main types of freight loaded and unloaded), and average number of men per gang in the hold, on deck and on the wharf, according to type of freight; useage factors for warehouses and other facilities; degree to which port facilities are inoperative because of repairs or maintenance. Estimated maximum capacity of port facilities for the main categories of traffic, giving the bases for such estimates; degree of congestion. Forecasts of operating efficiency; bases for calculations.

### 7.3 Handling equipment

For each port, indicators of efficiency such as degree of utilization of freight handling equipment; extent to which equipment is idle because of repairs or maintenance. Forecasts of operating efficiency; bases for calculations.

### 7.4 Operating costs

With and without taxes, in local currency and foreign exchange.

#### 7.4.1 By nature

Total costs per port of wages and salaries (including social welfare contributions), energy, materials, interest, depreciation (of infrastructure and equipment), etc.

#### 7.4.2 By function

Total costs per port of ship handling, freight handling, storage, dredging, other maintenance, general management, etc.

#### 7.4.3 Unit costs

For each port, average costs per ton of freight, linear metre of wharf, hour of operation, etc., classified by types of freight handled.

#### 7.4.4 Bases

7.4.4 Bases for calculations

Bases for calculating operating costs.

7.5 Consumption

Real total and unit consumption of the principal inputs used by ports, by type of input. Productivity per unit of critical inputs such as energy.

### 8. USER CHARGES

#### 8.1 Structures and levels

Structures and levels of charges for the use of ports: fees according to ship type for pilotage, use of tugs, maintenance of approach channels, dockage, unusual handling, etc.; charges per ton or per unit volume according to type of freight for use of port cranes, lighterage, handling on the wharf, on deck and in the hold, storage, etc.; charges for container handling; special charges or exemptions for particular products. Recent and proposed changes in charges.

#### 8.2 Government regulation and control

Government regulation and control of port user charges.

#### 8.3 Revenues

Revenues derived from port user charges, and their relation to the costs of providing the corresponding facilities and services.

#### 8.4 Bases for calculations

Bases for calculating port user charges.

## 9. FINANCIAL SITUATION

### 9.1 Income and expenditures

Statements of income and expenditures, classified by main categories, of the ports and of the governmental agencies responsible for them; details of write-offs for depreciation and of debt servicing; agreements with the government regarding subsidies.

### 9.2 Assets and liabilities

Value of fixed assets, revaluations, accounts receivable, cash on hand and other assets; current liabilities (short- and long-term debts) and deferred liabilities (capital and reserves). Accounts with the government. Bases for depreciation and revaluation.

### 9.3 Profitability indicators

Financial profitability indicators on average net fixed assets, ratio of indebtedness to net assets, operating ratios, etc.

### 9.4 Cash flows

Sources and disposition of funds; financing of investments; changes in working capital.

### 9.5 Audits

Procedures for auditing accounts. Audit reports.

### 9.6 Budgets

Budget methods and procedures; requirement for government approval of budgets; degree of compliance with budgets and main reasons for divergences.

### 9.7 Financial projections

Forecasts of income and expenditures, expected rate of return on average net fixed assets and other indicators, debt servicing and cash flows. Bases for calculations.

## 10. PLANNING

### 10.1 Policy guidelines

Policy guidelines for overall or transport sector development contained in official statements by high government authorities, and their implicit or explicit relation to port development.

### 10.2 Diagnoses, strategies and long-term policies

Diagnoses, strategies and long-term policies for overall or transport sector development, and their relation to port development.

### 10.3 Medium- and short-term policies, objectives and measures

Medium- and short-term policies, objectives and measures for the improvement and development of ports. Relation and consistency of port policies with those of other modes of transport and of other sectors of the economy.

### 10.4 Plans

Existence and scope of overall or sectorial development plans that affect ports; targets for port development to meet expected demands for ocean-borne transport.

### 10.5 Institutional improvement programmes

Programmes for improving the institutional organization or administrative efficiency of agencies responsible for ports. Estimates of human and material resources required, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

### 10.6 Investment programmes

Investment programmes of agencies responsible for ports (construction of new ports, improvement of existing ports, acquisition of handling equipment, etc.); estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes (support of foreign trade or cabotage, expansion of capacity, elimination of bottlenecks, reduction of costs, etc.). Relation to previous programmes. Projects included in the programmes; criteria for their selection (see description of investment projects in Section 20).

/10.7 Special

10.7 Special maintenance programmes

Special programmes for the maintenance or rehabilitation of ports, apart from normal maintenance programmes; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

10.8 Sources of financing

Sources of financing for programmes (own income, government contributions, domestic or foreign loans, etc.). Estimates of timeliness of financing with respect to schedules for implementation of programmes and projects; relation between programme financing and port budgets.

10.9 Responsibility for plans, programmes and projects

Responsibility for the preparation of port plans and programmes; organization, methodologies and criteria used in their preparation; procedures for their approval. Process of formulation, development and approval of projects; methods used for project evaluation.

10.10 Programme and project control

Mechanisms for control of programme and project implementation. Procedures for modifying priorities of programme elements in light of changes in the circumstances or conditions that originally determined them.

10.11 Past investments

Investments made in ports in recent years and their apparent effects. Relation between investments programmed, budgeted and carried out.

## 11. EFFECTS ON THE ENVIRONMENT

Details of this subject are now being studied, and additional subheadings will be incorporated in the next revision of the Information Classification Manual.

### 11.1 Environmental pollution

Statistics and studies about problems of environmental pollution related to ports.

## 20. INVENTORY OF INVESTMENT PROJECTS

Description of investment projects for ports, from those still in the conceptual stage to those under construction or completed, indicating for each project information such as: name of the project; physical location; whether national or multinational (or of potential importance to regional integration); existing studies; main technical and economic characteristics, including costs of the project in local currency and foreign exchange, optimum year for placing in service, manpower requirements during construction and economic life; expected economic and social benefits; related projects in the transport sector or in other sectors of the economy; physical and financing programming; sources of financing; information on physical and financial supervision of construction; data on utilization (traffic) of the resulting infrastructure or installations, so as to make possible a post-evaluation of the investment.

### 30. FLOWS AND QUALITY OF INFORMATION

#### 30.1 Flow diagrams

Flow diagrams of procedures for collecting, processing and filing information generated by the ports, indicating the destination (users) of this information at each stage of transformation or level of aggregation of the data. Forms or computer printouts used at the different stages of processing.

#### 30.2 Quality of information

Timeliness, accuracy and relevance of the information collected in relation to needs for planning and administration.

#### 40. TECHNICAL ASSISTANCE

Technical assistance for ports, financed by grants or loans from international organizations or individual governments: aid in the formulation of policies or strategies, preparation of plans or programmes, evaluation or preparation of projects, improvement of organization, administration, operations or maintenance, development of information systems, etc. Types of assistance provided; periods during which provided; reports produced. Degree of government participation in the form of financial or professional counterparts. Evaluation of technical assistance projects.

## 50. GENERAL AND METHODOLOGICAL ASPECTS 11/

### 50.1 General aspects

General basic concepts related to ports. Theoretical reference works.

### 50.2 Methods of planning and operation

Methodologies and models for the planning and operation of ports, such as traffic forecasting methods, simulation models or systems of user charges.

### 50.3 Technical characteristics

Physical design and construction characteristics for infrastructure and installations, of interest as references for general application. Mathematical models for design calculations.

### 50.4 Research programmes

Programmes of research related to ports.

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11/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis of the national transport sector.

Chapter MS

MARITIME TRANSPORT SERVICES

1. ORGANIZATION AND ADMINISTRATION

1.1 Existing shipping companies

List of the shipping companies operating in the country.  
History of the companies and of maritime transport in general.

1.2 Establishment of shipping companies

Laws, statutes and decrees that establish or regulate the establishment of shipping companies. Register of ownership; degree of government participation.

1.3 Institutional framework

Relations of the shipping companies with the government: institutional organization within which the shipping companies operate; government agencies that regulate them, especially in respect to their services, rates and investments. Relations and agreements among domestic shipping companies. Relations with clients: limitations and obligations toward users; liability; contracts of carriage and their conditions.

1.4 Administrative organization

Organization of the shipping companies. Functions, responsibilities and authority of their various departments. Administrative procedures.

1.5 Institutional changes

Institutional or administrative changes in the organization of maritime transport in recent years, and their effects.

1.6 International agreements

Bilateral and multilateral agreements and conventions - intergovernmental and among companies - in force, to be ratified and being studied that affect maritime transport, such as those concerning IMCO, pooling agreements, and multinational shipping companies. Shipping conferences that serve the maritime ports and their relations with the government.

## 2. LABOUR FORCE

### 2.1 Level and qualification

Number of employees of the shipping companies, by individual company and in total, broken down into main categories. Average income in each category. Availability of trained personnel.

### 2.2 Personnel policy

Standards and procedures for hiring, training, promotion, retirement, free life and unemployment insurance, vacations, etc. Welfare services. Medical, health and safety provisions. Current planning of the labour force.

### 2.3 Wage policy

Recent evolution of remunerations; wage scales and increments.

### 2.4 Training

Training facilities and programmes.

### 2.5 Labour relations

Labour laws. Number and type of unions operating in the shipping companies; mechanisms for settling labour disputes; role of the government in labour relations; recent history of labour relations. Personnel turnover.

### 3. SHIPS

#### 3.4 Ships

Inventory by shipping company of owned and chartered ships, indicating type of ship, deadweight tonnage (DWT), net register tonnage (TNR), year of construction, and type of service (international or cabotage). Present physical condition of the ships; recent acquisitions and withdrawals of ships, by company, type of ship, deadweight tonnage and net register tonnage; total fleet in past years. Number of foreign ships that regularly serve the country, by type and capacity. Responsibility for carrying out inventories of ships; date of last inventory; degree of reliability.

#### 3.5 Useful life

Real economic life of ships, and useful life considered for the calculation of depreciation.

#### Dry docks and other ship maintenance and repair installations

Classified under 4.5 and 4.7.

4. MAINTENANCE AND REPAIR OF SHIPS

4.4 Ships

Ship maintenance and repair methods and operations used by maritime transport companies. Periodic surveys of ships.

4.5 Maintenance equipment and shops

Availability and condition of ship maintenance equipment and shops owned by the maritime transport companies.

4.6 Standard quantities and costs

Standard quantities of materials, labour and equipment that should be used for each ship maintenance or repair operation identifiable. Local currency and foreign exchange unit costs of these operations, with and without taxes.

4.7 Dry docks

Dry docks for ship maintenance and repair within the country; types of work performed. Major maintenance and repairs performed in shipyards abroad.

4.8 Shipbreaking industry

## 5. CONSTRUCTION OR IMPORTATION OF SHIPS

### 5.1 Design standards

Design standards for shipbuilding, including passenger liners; main design criteria such as dimensions, tonnage, degree of unitization and of automation. Bases for specifying standards.

### 5.2 Ship acquisition policies

Policies regarding the acquisition of ships from domestic or foreign shipyards. Procedures for bids and the supervision of contracts. Legal and administrative provisions for the importation of ships.

### 5.3 Capacity for design and construction by administration

Capacity of the navy or other public agencies to carry out economic and design studies and to execute or supervise the building of ships.

### 5.4 Register of firms

#### 5.4.1 Consultants

Register of domestic and foreign consulting firms that carry out economic or engineering studies or supervise projects; type of work performed; capacity for execution; financial situation; etc.

#### 5.4.3 Shipyards

Register of domestic shipyards; production capacity; annual production; financial situation; etc.

### 5.5 Inputs and costs of construction

Standard or average quantities of material, labour, equipment and other inputs that serve as a basis for estimating investment costs for ship construction or modification. Local currency and foreign exchange unit costs of these inputs, with and without taxes. Geographic location and availability of inputs.

## 6. TRAFFIC AND SERVICES

### 6.1 Services

Passenger and freight services (including cabotage) and itineraries offered by domestic and foreign shipping companies, classified by route; quality of the services. Establishment and government regulation of services.

### 6.2 Passenger traffic

Past and projected traffic: number of passengers and passenger-kilometres transported by domestic and foreign shipping companies, classified by routes; origins and destinations; seasonal patterns.

### 6.3 Freight traffic

Past and projected traffic: number of tons and ton-kilometres transported by domestic and foreign shipping companies, classified by routes and main products; movements of unitized freight; origins and destinations; seasonal patterns. Cargo reserve laws and compliance with them.

### 6.4 Operations

Statistics and forecasts of operations by the shipping companies: number of sailings in cabotage and international service, etc., classified by route and type of ship. Operating procedures other than those related to safety.

### 6.5 Safety and accidents

Shipping accident statistics; shipwrecks. Causes and consequences. Safety standards and compliance with them. Crew licensing requirements and procedures.

## 7. OPERATING EFFICIENCY AND COSTS

### 7.3 Ships

For each shipping company, indicators of efficiency such as number of voyages per unit of time, number of days at sea, in port (working and idle) and laid up for repairs, etc., classified by ship and by route; ship utilization factors per voyage and per unit of time. Forecasts of operating efficiency; bases for calculations.

### 7.4 Operating costs

With and without taxes, in local currency and foreign exchange.

#### 7.4.1 By nature

Total costs per shipping company and per ship of wages and salaries (including social welfare contributions), fuel, stores, insurance, interest, depreciation, etc., classified according to whether incurred at sea, in port or while laid up.

#### 7.4.2 By function

Total costs per shipping company and per ship of navigation, loading and discharging, marketing, general management, surveys, etc.

#### 7.4.3 Unit costs

For each shipping company, costs per ship, voyage, ton-kilometre offered and transported, etc.

#### 7.4.4 Bases for calculations

Bases for calculating operating costs.

### 7.5 Consumption

Real total and unit consumption of the principal inputs used by maritime transport, by type of input. Productivity per unit of critical inputs such as energy.

## 8. RATES

### 8.1 Structures and levels

Structures and levels of commercial maritime transport and cabotage rates for passengers and freight by routes between pairs of ports and per passenger-kilometre or per ton-kilometre according to product, value, and weight or volume of freight; rates for containers, including door-to-door rates; promotional rates; surcharges for special conditions of carriage such as for dangerous goods or outsized dimensions; surcharges imposed to compensate for port congestion or other delays. Influence of user groups on the fixing of maritime transport rates. Establishment of rates for time and voyage charters. Capacity of cabotage companies to negotiate rates with shippers; examples of negotiated rates; proportion and type of coastwise traffic carried under negotiated rates. Relation of cabotage rates to rates of competing modes. Recent and proposed changes in maritime transport and cabotage rates.

### 8.2 Government regulation and control

Government regulation and control of cabotage rates. Influence of the government on shipping conferences in the fixing of maritime transport rates.

### 8.3 Revenues

Revenues derived from maritime transport and cabotage rates, and their relation to the costs of providing the corresponding services.

### 8.4 Bases for calculations

Bases for calculating maritime transport and cabotage rates.

## 9. FINANCIAL SITUATION

### 9.1 Income and expenditures

Statements of income and expenditures, classified by main categories, of the shipping companies; details of write-offs for depreciation and of debt servicing; agreements with the government regarding subsidies.

### 9.2 Assets and liabilities

Value of fixed assets, revaluations, accounts receivable, cash on hand and other assets; current liabilities (short- and long-term debts) and deferred liabilities (capital and reserves). Accounts with the government. Bases for depreciation and revaluation.

### 9.3 Profitability indicators

Financial profitability indicators on average net fixed assets, ratio of indebtedness to net assets, operating ratios, etc.

### 9.4 Cash flows

Sources and disposition of funds; financing of investments; working capital.

### 9.5 Audits

Procedures for auditing accounts. Audit reports.

### 9.6 Budgets

Budget methods and procedures; requirement for government approval of budgets; degree of compliance with budgets and main reasons for divergences.

### 9.7 Financial projections

Forecasts of income and expenditures, expected rate of return on average net fixed assets and other indicators, debt servicing and cash flows. Bases for calculations.

## 10. PLANNING

### 10.1 Policy guidelines

Policy guidelines for overall or transport sector development contained in official statements by high government authorities, and their implicit or explicit relation to cabotage and maritime transport development.

### 10.2 Diagnoses, strategies and long-term policies

Diagnoses, strategies and long-term policies for overall or transport sector development, and their relation to cabotage and maritime transport development.

### 10.3 Medium- and short-term policies, objectives and measures

Medium- and short-term policies, objectives and measures for the improvement and development of cabotage and maritime transport. Relation and consistency of cabotage and maritime transport policies with those of other modes of transport and other sectors of the economy.

### 10.4 Plans

Existence and scope of overall or sectorial development plans that affect cabotage and maritime transport; targets for cabotage and maritime transport service development to meet expected demands for ocean-borne transport.

### 10.5 Institutional improvement programmes

Programmes for improving the institutional organization or administrative efficiency of cabotage and maritime transport companies. Estimates of human and material resources required, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

### 10.6 Investment programmes

Investment programmes of cabotage and maritime transport companies (construction of ships or shore facilities, acquisition of navigation equipment, etc.); estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes (expansion of capacity, increase in share of domestic ships in foreign trade, reduction of costs, etc.). Relation to previous programmes. Projects included in the programmes; criteria for their selection (see description in investment projects in Section 20).

10.7 Special maintenance programmes

Special programmes for the maintenance or rehabilitation of ships, apart from normal maintenance programmes; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

10.8 Sources of financing

Sources of financing for programmes (own income, government contributions, domestic or foreign loans, etc.).

10.9 Responsibility for plans, programmes and projects

Responsibility for the preparation of maritime transport plans and programmes; organization, methodologies and criteria used in their preparation; procedures for their approval. Process of formulation, development and approval of projects; methods used for project evaluation.

10.11 Past investments

Investments made in maritime transport in recent years and their apparent effects. Relation between investments programmed, budgeted and carried out.

## 11. EFFECTS ON THE ENVIRONMENT

Details of this subject are now being studied, and additional subheadings will be incorporated in the next revision of the Information Classification Manual.

### 11.1 Environmental pollution

Statistics and studies about problems of environmental pollution related to maritime transport services.

## 20. INVENTORY OF INVESTMENT PROJECTS

Description of investment projects for maritime transport services, from those still in the conceptual stage to those under construction or completed, indicating for each project information such as: name of the project; physical location; whether national or multinational (or of potential importance to regional integration); existing studies; main technical and economic characteristics, including costs of the project in local currency and foreign exchange, optimum year for placing in service, manpower requirements during construction and economic life; expected economic and social benefits; related projects in the transport sector or in other sectors of the economy; physical and financing programming; sources of financing; information on physical and financial supervision of construction; data on utilization of the resulting installations or equipment, so as to make possible a post-evaluation of the investment.

### 30. FLOWS AND QUALITY OF INFORMATION

#### 30.1 Flow diagrams

Flow diagrams of procedures for collecting, processing and filing information generated by the shipping companies, indicating the destination (users) of this information at each stage of transformation or level of aggregation of the data. Forms or computer printouts used at the different stages of processing.

#### 30.2 Quality of information

Timeliness, accuracy and relevance of the information collected in relation to needs for planning and administration.

#### 40. TECHNICAL ASSISTANCE

Technical assistance for maritime transport services, financed by grants or loans from international organizations or individual governments: aid in the formulation of policies or strategies, preparation of plans or programmes, evaluation or preparation of projects, improvement of organization, administration, operations or maintenance, development of information systems, etc. Types of assistance provided; periods during which provided; reports produced. Degree of government participation in the form of financial or professional counterparts. Evaluation of technical assistance projects.

50. GENERAL AND METHODOLOGICAL ASPECTS 12/

50.1 General aspects

General basic concepts related to maritime transport services. Theoretical reference works.

50.2 Methods of planning and operation

Methodologies and models for the planning and operation of maritime transport services, such as traffic forecasting methods, simulation models or rate systems.

50.3 Technical characteristics

Physical design and construction characteristics for ships, of interest as references for general application. Mathematical models for design calculations.

50.4 Research programmes

Programmes of research related to maritime transport services.

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12/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis of the national transport sector.

Chapter NI

INLAND WATERWAYS AND PORTS

1. ORGANIZATION AND ADMINISTRATION

1.1 Existing inland waterways and ports

List of inland waterways and ports operating in the country. Classification of waterways according to responsibility for operation, maintenance and construction; of ports according to public and private, general and specialized, etc. Maps showing the location of the waterways and ports thus classified. History of the waterways and ports.

1.2 Establishment of inland waterways and ports

Laws, statutes and decrees that establish or regulate the establishment of inland waterways and ports and their governing authorities. Register of ownership; degree of government participation.

1.3 Institutional framework

Relations of the inland waterways and ports with the government: institutional organization within which the inland waterways and ports operate; government agencies that regulate them, especially in respect to their services, rates and investments. Relations and agreements among inland waterways and ports. Relations with clients: limitations and obligations toward users; liability; contracts with inland navigation companies.

1.4 Administrative organization

Organization of the agencies charged with operating, maintaining or constructing inland waterways and ports. Functions, responsibilities and authority of their various departments. Administrative procedures.

1.5 Institutional changes

Institutional or administrative changes in the organization of the inland waterways and ports in recent years, and their effects.

1.6 International agreements

Intergovernmental bilateral and multilateral agreements and conventions in force, to be ratified and being studied that affect inland waterways and ports.

## 2. LABOUR FORCE

### 2.1 Level and qualification

Number of employees in the agencies responsible for the supervision, development and operation of inland waterways and ports, by individual waterway or port and in total, broken down into main categories. Average income in each category. Availability of trained personnel.

### 2.2 Personnel policy

Standards and procedures for hiring, training, promotion, free life and unemployment insurance, vacations, etc. Welfare services. Medical, health and safety provisions. Current planning of the labour force.

### 2.3 Wage policy

Recent evolution of remunerations; wage scales and increments.

### 2.4 Training

Training facilities and programmes.

### 2.5 Labour relations

Labour laws. Number and type of unions operating in the inland waterways and ports; mechanisms for settling labour disputes; role of the government in labour relations; recent history of labour relations. Personnel turnover.

### 3. INFRASTRUCTURE AND INSTALLATIONS

#### 3.1 Inland waterways

Inventory of inland waterways by location, indicating length, depth, locks, location and nature of obstacles to navigation (shoals and rapids), capacity etc. Present physical condition of the waterways; recent construction, reconstruction or dredging projects. Responsibility for carrying out inventories of the waterways; date of last inventory; degree of reliability.

#### 3.2 Inland ports

Inventory of inland ports by location, indicating: nature and depth of access channels; length, type and depth of general freight and specialized wharves; number of warehouses and yards, etc.; capacity of the installations. Present physical condition of the ports; recent construction and reconstruction projects. Connexion with other modes of transport. Responsibility for carrying out inventories of ports; date of last inventory; degree of reliability.

#### 3.3 Signalling and communications systems

Inventory by inland waterway or port of signalling systems (buoys and luminous markers) and of systems for communicating with vessels.

#### 3.4 Port equipment

Inventory by port of port equipment, indicating availability and capacity of cranes and other mobile, floating or fixed handling equipment. Present condition of the equipment; recent acquisitions and withdrawals of equipment.

#### 3.5 Useful life

Real economic life of inland port and waterway infrastructure and equipment, and useful life considered for the calculation of depreciation.

#### Inland waterway and port maintenance shops and equipment

Classified under 4.5.

#### 4. MAINTENANCE AND REPAIR OF INFRASTRUCTURE AND INSTALLATIONS

##### 4.1 Inland waterways

Maintenance and repair methods and operations for inland waterway channels, protection and channelization works, locks and dams; volumes of dredging.

##### 4.2 Inland ports

Maintenance and repair methods and operations for inland port waterway areas, structures and buildings; degree of mechanization; volumes of dredging in access channels, turning basins and docks.

##### 4.3 Signalling and communications systems

Maintenance and repair methods and operations for inland waterway and port signalling systems (buoys and luminous signals) and systems for communicating with vessels.

##### 4.4 Handling equipment

Maintenance and repair methods and operations for fixed, mobile and floating cranes and other handling equipment, tugs, dredges, etc.

##### 4.5 Maintenance equipment and shops

Availability and condition of equipment and shops on waterways and in inland ports for the maintenance and repair of waterway and port infrastructure and equipment.

##### 4.6 Standard quantities and costs

Standard quantities of materials, labour and equipment that should be used for each maintenance or repair operation identifiable for inland waterway and port infrastructure and equipment. Local currency and foreign exchange unit costs of these operations, with and without taxes.

5. DESIGN AND CONSTRUCTION OF INFRASTRUCTURE  
AND INSTALLATIONS

5.1 Design standards

Design standards for the construction and improvement of inland waterway and port facilities; main design criteria. Bases for specifying standards.

5.2 Policies for the execution and supervision of works and studies

Policies regarding the execution and supervision of projects by administration or by contract. Procedures for bids and the supervision of contracts. Legal and administrative provisions for the importation of equipment and materials. Policies regarding the execution of studies by administration or by contract.

5.3 Capacity for design and construction by administration

Capacity of the agencies responsible for inland waterways and ports to carry out economic and engineering studies and to execute or supervise construction or improvement projects.

5.4 Register of firms

5.4.1 Consultants

Register of domestic and foreign consulting firms that carry out economic or engineering studies or supervise projects; type of work performed; capacity for execution; financial situation; etc.

5.4.2 Construction firms

Register of domestic and foreign construction firms; type of work performed; capacity for execution; financial situation; etc.

5.4.3 Manufacturers

Register of domestic firms that manufacture or assemble equipment and materials for inland waterways and ports; production capacity; annual production; financial situation; etc.

#### 5.4.4 Importers

Register of firms that import equipment and materials for inland waterways and ports; financial situation; etc.

#### 5.5 Inputs and costs of construction

Standard or average quantities of materials, labour, equipment and other inputs that serve as a basis for estimating investment costs for the construction or improvement of inland port and waterway infrastructure and equipment. Local currency and foreign exchange unit costs of these inputs, with and without taxes. Geographic location and availability of inputs.

## 6. TRAFFIC AND SERVICES

### 6.1 Services

Services to vessels, passengers and freight offered by inland waterways and ports; shift and hours of operation; quality of the services. Establishment and government regulation of services.

### 6.2 Passenger traffic

Past and projected passenger traffic: number of passengers using the inland ports and waterways; origins and destinations; seasonal patterns.

### 6.3 Freight traffic

Past and projected freight traffic: number of tons passing through the inland waterways and ports, classified by main products, means of handling, etc.; movements of unitized freight; seasonal patterns.

### 6.4 Operations

Statistics and forecasts of inland waterway and port operations: number of vessels using the waterways and ports, classified by types and net register tonnage (TNR), etc.; seasonal patterns. Operating procedures other than those related to safety.

### 6.5 Safety and accidents

Inland waterway and port accident statistics. Causes and consequences. Safety standards and compliance with them.

### 6.6 Delimitation of zone of influence

Delimitation of the zone of influence of each port; main factors that determine the zone.

## 7. OPERATING EFFICIENCY AND COSTS

### 7.1 Inland waterways

For each inland waterway, indicators of efficiency such as average times to pass locks, number of days during which water is deeper than  $n$ ,  $n-1$ ,  $n-2$  ... metres, etc.; degree of congestion. Forecasts of operating efficiency; bases for calculations.

### 7.2 Inland ports

For each inland port, indicators of efficiency such as average tonnages handled per wharf and per linear metre of wharf for general and specialized freight, gross and net tonnages moved per gang-hour by principal types of freight, average number of workers per gang in the hold, on deck and on the wharf; estimates of maximum capacity of port facilities; degree of congestion. Forecasts of operating efficiency; bases for calculations.

### 7.3 Handling equipment

For each inland port, indicators of efficiency such as degree of utilization of freight handling equipment; extent to which equipment is not operational owing to repairs or maintenance (availability factor). Forecasts of operating efficiency; bases for calculations.

### 7.4 Operating costs

With and without taxes, in local currency and foreign exchange.

#### 7.4.1 By nature

Total costs per waterway unit or per port of wages and salaries (including social welfare contributions), fuel, materials, interest, depreciation (of infrastructure and equipment), etc.

#### 7.4.2 By function

Total costs per waterway unit or per port of vessel movement, freight handling, dredging, other maintenance, general management, etc.

#### 7.4.3 Unit costs

For each waterway unit, average costs per kilometre for dredging, per lock for vessel handling, etc. For each port, average costs per ton of freight, linear metre of wharf, hour of operation, etc., classified by types of freight handled.

#### 7.4.4 Bases for calculations

Bases for the calculation of operating costs.

### 7.5 Consumption

Real total and unit consumption of the principal inputs used by inland ports and waterways, by type of input. Productivity per unit of critical inputs such as energy.

### 8. USER CHARGES

#### 8.1 Structures and levels

Structures and levels of charges for the use of inland waterways: fees according to vessel type for operating licenses, tolls, pilotage, etc.

Structure and levels of charges for the use of inland ports: fees according to vessel type for use of tugs, maintenance of access channels, dockage, unusual handling, etc.; charges per ton or per unit volume according to type of freight for use of port cranes, lighterage, handling on the wharf, on deck and in the hold, storage, etc.; charges for container handling; special charges or exemptions for particular products. Recent and proposed changes in charges.

#### 8.2 Government regulation and control

Government regulation and control of inland waterway and port user charges.

#### 8.3 Revenues

Revenues derived from inland waterway and port user charges, and their relation to the costs of providing the corresponding facilities and services.

#### 8.4 Bases for calculations

Bases for calculating inland waterway and port user charges.

## 9. FINANCIAL SITUATION

### 9.1 Income and expenditures

Statements of income and expenditures, classified by main categories, of the inland waterways and ports and of the governmental agencies responsible for them; details of write-offs for depreciation and of debt servicing; agreements with the government regarding subsidies.

### 9.2 Assets and liabilities

Value of fixed assets, revaluations, accounts receivable, cash on hand and other assets; current liabilities (short- and long-term debts) and deferred liabilities (capital and reserves). Accounts with the government. Bases for depreciation and revaluation.

### 9.3 Profitability indicators

Financial profitability indicators on average net fixed assets, ratio of indebtedness to net assets, operating ratios, etc.

### 9.4 Cash flows

Sources and disposition of funds; financing of investments; changes in working capital.

### 9.5 Audits

Procedures for auditing accounts. Audit reports.

### 9.6 Budgets

Budget methods and procedures; requirement for government approval of budgets; degree of compliance with budgets and main reasons for divergences.

### 9.7 Financial projections

Forecasts of income and expenditures, expected rate of return on average net fixed assets and other indicators, debt servicing and cash flows. Bases for calculations.

## 10. PLANNING

### 10.1 Policy guidelines

Policy guidelines for overall or transport sector development contained in official statements by high government officials, and their implicit or explicit relation to inland waterway and port development.

### 10.2 Diagnoses, strategies and long-term policies

Diagnoses, strategies and long-term policies for overall or transport sector development, and their relation to inland waterway and port development.

### 10.3 Medium- and short-term policies, objectives and measures

Medium- and short-term policies, objectives and measures for the improvement and development of inland waterways and ports. Relation and consistency of inland waterway and port policies with those of other modes of transport and of other sectors of the economy.

### 10.4 Plans

Existence and scope of overall or sectorial development plans that affect inland waterways and ports; targets for inland waterway and port development to meet expected demands for inland water-borne transport.

### 10.5 Institutional improvement programmes

Programmes for improving the institutional organization or administrative efficiency of agencies responsible for inland waterways and ports. Estimates of human and material resources required, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

### 10.6 Investment programmes

Investment programmes of agencies responsible for inland waterways and ports (construction or improvement of inland waterways, installation of signalling systems, acquisition of dredging equipment, construction of new inland ports, improvement of existing port infrastructure, acquisition of handling equipment, etc.); local currency and foreign exchange costs, schedules for implementation and benefits

expected of the programmes (expansion of capacity, elimination of bottlenecks, reduction of costs, etc.). Relation to previous programmes. Projects included in the programmes; criteria for their selection (see description of investment projects in Section 20).

10.7 Special maintenance programmes

Special programmes for the maintenance or rehabilitation of inland waterways and ports, apart from normal maintenance programmes; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

10.8 Sources of financing

Sources of financing for programmes (own income, government contributions, domestic or foreign loans, etc.). Estimates of timeliness of financing with respect to schedules for implementation of programmes and projects; relation between programme financing and inland waterway or port budgets.

10.9 Responsibility for plans, programmes and projects

Responsibility for the preparation of inland waterway and port plans and programmes; organization, methodologies and criteria used in their preparation; procedures for their approval. Process of formulation, development and approval of projects; methods used for project evaluation.

10.10 Programme and project control

Mechanisms for control of programme and project implementation. Procedures for modifying priorities of programme elements in light of changes in the circumstances that originally determined them.

10.11 Past investments

Investments made in inland waterways and ports in recent years and their apparent effects. Relation between investments programmed, budgeted and carried out.

11. EFFECTS ON THE ENVIRONMENT

Details of this subject are now being studied, and additional subheadings will be incorporated in the next revision of the Information Classification Manual.

11.1 Environmental pollution

Statistics and studies about problems of environmental pollution related to inland waterways and ports.

## 20. INVENTORY OF INVESTMENT PROJECTS

Description of investment projects for inland waterways and ports, from those still in the conceptual stage to those under construction or completed, indicating for each project information such as: name of the project; physical location; whether national or multinational (or of potential importance to regional integration); existing studies; main technical and economic characteristics, including costs of the project in local currency and foreign exchange, optimum year for placing in service, manpower requirements during construction and economic life; expected economic and social benefits; related projects in the transport sector or in other sectors of the economy; physical and financial programming; sources of financing; information on physical and financial supervision of construction; data on utilization (traffic) of the resulting infrastructure or installations, so as to make possible a post-evaluation of the investment.

### 30. FLOWS AND QUALITY OF INFORMATION

#### 30.1 Flow diagrams

Flow diagrams of procedures for collecting, processing and filing information generated by the inland waterways and ports, indicating the destination (users) of this information at each stage of transformation or level of aggregation of the data. Forms or computer printouts used at the different stages of processing.

#### 30.2 Quality of information

Timeliness, accuracy and relevance of the information collected in relation to needs for planning and administration.

#### 40. TECHNICAL ASSISTANCE

Technical assistance for inland waterways and ports, financed by grants or loans from international organizations or individual governments: aid in the formulation of policies or strategies, preparation of plans or programmes, evaluation or preparation of projects, improvement of organization, administration, operations or maintenance, development of information systems, etc. Types of assistance provided; periods during which provided; reports produced. Degree of government participation in the form of financial or professional counterparts. Evaluation of technical assistance projects.

50. GENERAL AND METHODOLOGICAL ASPECTS 13/

50.1 General aspects

General basic concepts related to inland waterways and ports. Theoretical reference works.

50.2 Methods of planning and operation

Methodologies and models for the planning and operation of inland waterways and ports, such as traffic forecasting methods, simulation models or systems of user charges.

50.3 Technical characteristics

Physical design and construction characteristics for infrastructure and installations, of interest as references for general application. Mathematical models for design calculations.

50.4 Research programmes

Programmes of research related to inland waterways and ports.

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13/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis of the national transport sector.

Chapter NS

INLAND NAVIGATION SERVICES

1. ORGANIZATION AND ADMINISTRATION

1.1 Existing inland navigation companies

List of inland navigation companies, both national and foreign, operating in the country. History of the companies and of inland navigation in general.

1.2 Establishment of inland navigation companies

Laws, statutes and decrees that establish or regulate the establishment of inland navigation companies. Register of ownership; degree of government participation.

1.3 Institutional framework

Relations of the inland navigation companies with the government: institutional organization within which the companies operate; government agencies that regulate them, especially in respect to their services, rates and investments. Relations and agreements among domestic inland navigation companies. Relations with clients: limitations and obligations toward users; liability; contracts of carriage and their conditions.

1.4 Administrative organization

Organization of the inland navigation companies. Functions, responsibilities and authority of their various departments. Administrative procedures.

1.5 Institutional changes

Institutional or administrative changes in the organization of inland navigation in recent years, and their effects.

1.6 International agreements

Bilateral and multilateral agreements and conventions - inter-governmental and among companies - in force, to be ratified and being studied that affect inland navigation, such as those concerning IMCO and pooling agreements. Shipping conferences that serve the inland ports and their relations with the government.

## 2. LABOUR FORCE

### 2.1 Level and qualification

Number of employees in the inland navigation companies, by individual company and in total, broken down into main categories. Average income in each category. Availability of trained personnel.

### 2.2 Personnel policy

Standards and procedures for hiring, training, promotion, retirement, free life and unemployment insurance, vacations, etc. Welfare services. Medical, health and safety provisions. Current planning of the labour force.

### 2.3 Wage policy

Recent evolution of remunerations; wage scales and increments.

### 2.4 Training

Training facilities and programmes.

### 2.5 Labour relations

Labour laws. Number and type of unions operating in the inland navigation companies; mechanisms for settling labour disputes; role of the government in labour relations; recent history of labour relations. Personnel turnover.

### 3. VESSELS

#### 3.4 Vessels

Inventory by inland navigation company of vessels owned and chartered, indicating type of vessel, deadweight tonnage, (DWT), net register tonnage (TNR) and year of construction. Present condition of the vessels; recent acquisitions and withdrawals of vessels, by company, type of vessel, deadweight tonnage and net register tonnage; total fleet in past years. Number of foreign vessels that regularly serve the country, by type and capacity. Responsibility for carrying out inventories of vessels; date of last inventory; degree of reliability.

#### 3.5 Useful life

Real economic life of vessels, and useful life considered for the calculation of depreciation.

#### Dry docks and other vessel maintenance and repair installations

Classified under 4.5 and 4.7.

4. MAINTENANCE AND REPAIR OF VESSELS

4.4 Vessels

Vessel maintenance and repair methods and operations used by inland navigation companies. Periodic surveys of vessels.

4.5 Maintenance equipment and shops

Availability and condition of vessel maintenance equipment and shops owned by the inland navigation companies.

4.6 Standard quantities and costs

Standard quantities of materials, labour and equipment that should be used for each vessel maintenance or repair operation identifiable. Local currency and foreign exchange unit costs of these operations, with and without taxes.

4.7 Dry docks

Dry docks for vessel maintenance and repair; types of work performed.

4.8 Shipbreaking industry

## 5. CONSTRUCTION OR IMPORTATION OF VESSELS

### 5.1 Design standards

Design standards for vessel construction, including passenger vessels; main design criteria such as tonnage and draught. Bases for specifying standards.

### 5.2 Vessel acquisition policies

Policies regarding the acquisition of vessels from domestic or foreign shipyards. Procedures for bids and the supervision of contracts. Legal and administrative provisions for the importation of vessels.

### 5.3 Capacity for design and construction by administration

Capacity of the navy or other public agencies to carry out economic and design studies and to execute or supervise the building of vessels.

### 5.4 Register of firms

#### 5.4.1 Consultants

Register of domestic and foreign consulting firms that carry out economic or engineering studies or supervise projects; type of work performed; capacity for execution; financial situation; etc.

#### 5.4.3 Boatyards

Register of domestic boatyards that build vessels for inland navigation; production capacity; annual production; financial situation; etc.

### 5.5 Inputs and costs of construction

Standard or average quantities of materials, labour, equipment and other inputs that serve as a basis for estimating investment costs for the construction or modification of vessels. Local currency and foreign exchange unit costs of these inputs, with and without taxes. Geographic location and availability of inputs.

## 6. TRAFFIC AND SERVICES

### 6.1 Services and itineraries

Passenger and freight services and itineraries offered by domestic and foreign inland navigation companies, classified by routes; quality of the services. Establishment and government regulation of services.

### 6.2 Passenger traffic

Past and projected traffic: number of passengers and passenger-kilometres transported by domestic and foreign inland navigation companies, classified by routes; origins and destinations; seasonal patterns. International traffic.

### 6.3 Freight traffic

Past and projected traffic: number of tons and ton-kilometres transported by domestic and foreign inland navigation companies, classified by routes and principal products; movements of unitized freight; origins and destinations; seasonal patterns. International traffic.

### 6.4 Operations

Statistics and forecasts of operations by the inland navigation companies: number of sailings, etc., classified by routes and types of vessels. Operating procedures other than those related to safety.

### 6.5 Safety and accidents

Inland navigation accident statistics. Causes and consequences. Safety standards and compliance with them. Crew licensing requirements and procedures.

## 7. OPERATING EFFICIENCY AND COSTS

### 7.3 Vessels

For each inland navigation company, indicators of efficiency such as number of voyages per unit of time, number of days sailing, in port (working and idle) and laid up for repairs, etc., classified by vessel and by route; vessel utilization factors per voyage and per unit of time. Forecasts of operating efficiency; bases for calculations.

### 7.4 Operating costs

With and without taxes, in local currency and foreign exchange.

#### 7.4.1 By nature

Total costs per inland navigation company and per vessel of wages and salaries (including social welfare contributions), fuel, stores, insurance, interest, depreciation, etc., classified according to whether incurred under way, in port, or while laid up.

#### 7.4.2 By function

Total costs per inland navigation company and per ship of navigation, loading and discharging, marketing, general management, surveys, etc.

#### 7.4.3 Unit costs

For each inland navigation company, average costs per vessel, voyage, ton-kilometre offered and transported, etc.

#### 7.4.4 Bases for calculations

Bases for calculating operating costs.

### 7.5 Consumption

Real total and unit consumption of the principal inputs used in inland navigation, by type of input. Productivity per unit of critical inputs such as energy.

## 8. RATES

### 8.1 Structures and levels

Structures and levels of commercial inland navigation rates for passengers and freight between pairs of ports and per passenger-kilometre or per ton-kilometre according to product, value, and weight or volume of freight; rates for containers, including door-to-door rates; surcharges for special conditions of carriage such as for dangerous goods or outsized dimensions. Capacity of inland navigation companies to negotiate rates with shippers; examples of negotiated rates; proportion and type of traffic carried under negotiated rates. Relation of inland navigation rates to rates of competing modes. Recent and proposed changes in inland navigation rates.

### 8.2 Government regulation and control

Government regulation and control of inland navigation rates.

### 8.3 Revenues

Revenues derived from inland navigation rates, and their relation to the costs of providing the corresponding services.

### 8.4 Bases for calculations

Bases for calculating inland navigation rates.

## 9. FINANCIAL SITUATION

### 9.1 Income and expenditures

Statements of income and expenditures, classified by main categories, of the inland navigation companies; details of write-offs for depreciation and of debts servicing; agreements with the government regarding subsidies.

### 9.2 Assets and liabilities

Value of fixed assets, revaluations, accounts receivable, cash on hand and other assets; current liabilities (short- and long-term debts) and deferred liabilities (capital and reserves). Accounts with the government. Bases for depreciation and revaluation.

### 9.3 Profitability indicators

Financial profitability indicators on average net fixed assets, ratio of indebtedness to net assets, operating ratios, etc.

### 9.4 Cash flows

Sources and disposition of funds; financing of investments; changes in working capital.

### 9.5 Audits

Procedures for auditing accounts. Audit reports.

### 9.6 Budgets

Budget methods and procedures; requirement for government approval of budgets; degree of compliance with budgets and main reasons for divergences.

### 9.7 Financial projections

Forecasts of income and expenditures, expected rate of return on average net fixed assets and other indicators, debt servicing and cash flows. Bases for calculations.

## 10. PLANNING

### 10.1 Policy guidelines

Policy guidelines for overall or transport sector development contained in official statements by high government authorities, and their implicit or explicit relation to inland navigation development.

### 10.2 Diagnoses, strategies and long-term policies

Diagnoses, strategies and long-term policies for overall or transport sector development, and their relation to inland navigation development.

### 10.3 Medium- and short-term policies, objectives and measures

Medium- and short-term policies, objectives and measures for the improvement and development of inland navigation. Relation and consistency of inland navigation policies with those of other modes of transport and other sectors of the economy.

### 10.4 Plans

Existence and scope of overall or sectorial development plans that affect inland navigation; targets for inland navigation service development to meet expected demands for inland water-borne transport.

### 10.5 Institutional improvement programmes

Programmes for improving the institutional organization or administration efficiency of inland navigation companies. Estimates of human and material resources required, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

### 10.6 Investment programmes

Investment programmes of inland navigation companies (construction of vessels or shore facilities, acquisition of navigation equipment, etc.); estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes (expansion of capacity, reduction of costs etc.). Relation to previous programmes. Projects included in the programmes; criteria for their selection (see description of investment projects in Section 20).

/10.7 Special

10.7 Special maintenance programmes

Special programmes for the maintenance and rehabilitation of vessels, apart from normal maintenance programmes; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes. Relation to previous programmes.

10.8 Sources of financing

Sources of financing for the programmes (own income, government contributions, domestic or foreign loans, etc.).

10.9 Responsibility for plans, programmes and projects

Responsibility for the preparation of inland navigation plans and programmes; organization, methodologies and criteria used in their preparation; procedures for their approval. Process of formulation, development and approval of projects; methods used for project evaluation.

10.11 Past investments

Investments made in inland navigation in recent years and their apparent effects. Relation between investments programmed, budgeted and carried out.

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## 11. EFFECTS ON THE ENVIRONMENT

Details of this subject are now being studied, and additional subheadings will be incorporated in the next revision of the Information Classification Manual.

### 11.1 Environmental pollution

Statistics and studies about problems of environmental pollution related to inland navigation services.

## 20. INVENTORY OF INVESTMENT PROJECTS

Description of investment projects for inland navigation services, from those still in the conceptual stage to those under construction or completed, indicating for each project information such as: name of the project; physical location; whether national or multinational (or of potential importance to regional integration); existing studies; main technical and economic characteristics, including costs of the project in local currency and foreign exchange, optimum year for placing in service, manpower requirements during construction and economic life; expected economic and social benefits; related projects in the transport sector or in other sectors of the economy; physical and financial programming; sources of financing; information on physical and financial supervision of construction; data on utilization of the resulting installations or equipment, so as to make possible a post-evaluation of the investment.

### 30. FLOWS AND QUALITY OF INFORMATION

#### 30.1 Flow diagrams

Flow diagrams of procedures for collecting, processing and filing information generated by the inland navigation companies, indicating the destination (users) of this information at each stage of transformation or level of aggregation of the data. Forms or computer printouts used at the different stages of processing.

#### 30.2 Quality of information

Timeliness, accuracy and relevance of the information collected in relation to needs for planning and administration.

#### 40. TECHNICAL ASSISTANCE

Technical assistance for inland navigation services, financed by grants or loans from international organizations or individual governments: aid in the formulation of policies or strategies, preparation of plans or programmes, evaluation or preparation of projects, improvement of organization, administration, operations or maintenance, development of information systems, etc. Types of assistance provided; periods during which provided; reports produced. Degree of government participation in the form of financial or professional counterparts. Evaluation of technical assistance projects.

## 50. GENERAL AND METHODOLOGICAL ASPECTS 14/

### 50.1 General aspects

General basic concepts related to inland navigation services. Theoretical reference works.

### 50.2 Methods of planning and operation

Methodologies and models for the planning and operation of inland navigation services, such as methods for forecasting traffic, simulation models or rate systems.

### 50.3 Technical characteristics

Physical design and construction characteristics for vessels, of interest as references for general application. Mathematical models for design calculations.

### 50.4 Research programmes

Programmes of research related to inland navigation services.

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14/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis of the national transport sector.

Chapter TM

MULTIMODAL TRANSPORT 15/

1. ORGANIZATION AND ADMINISTRATION

1.1 Existing multimodal transport companies

List of the multimodal transport companies operating in the country, such as multimodal transport operators (MTOs) and freight forwarders. Local and foreign companies authorized to provide international services for the country, by type of service. History of the companies and of multimodal transport in general.

1.2 Establishment of multimodal transport companies

Laws, statutes and decrees that establish or regulate the establishment of multimodal transport companies. Register of ownership; degree of government participation.

1.3 Institutional framework

Relations of the multimodal transport companies with the government: institutional organization within which the companies operate; government agencies that regulate them, especially in respect to their services, rates and investments. Relations and agreements among domestic companies. Relations with clients: limitations and obligations toward users; liability; contracts of carriage, such as through bills of lading and multimodal transport documents, and their conditions.

1.6 International agreements

Bilateral and multilateral agreements and conventions - intergovernmental and among companies - in force, to be ratified and being studied that affect multimodal transport.

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15/ The structure of topics in this chapter is identical in every respect to that of the other chapters in Part II, even though not all the sub-topics have been included. Therefore, if it appears that important information about multimodal transport exists that is not covered here explicitly, by analogy with other chapters it should be possible to add the required sub-topics without difficulty.

## 2. LABOUR FORCE

### 2.1 Level and qualification

Number of employees in each of the multimodal transport companies, broken down into main categories. Average income in each category. Availability of trained personnel.

## 3. INFRASTRUCTURE, INSTALLATIONS AND EQUIPMENT

### 3.2 Dry ports

Inventory of areas established in the interior of the country for receiving, dispatching or transshipping freight with a foreign origin or destination (in principle, traditional terminals such as ports and airports are excluded from this heading); transport modes that serve them; special services they offer; benefits they provide. (Note: Other facilities of a multimodal nature that are not classified in another chapter of Part II should also be classified here.)

### 3.3 Telecommunications systems

Inventory by company of special telecommunications systems or links used by the multimodal transport companies for data or document transmissions.

### 3.4 Transport equipment

Multimodal transport systems that affect the country's domestic and foreign trade, such as containers, trailer on flatcar, roll-on/roll-off or lighter aboard ship (LASH). Inventory by company of the systems actually used in the country; owned and leased equipment operated in these systems, such as trailers or containers; unitization practices associated with these systems. Recent and planned acquisitions and withdrawals of equipment.

#### 4. MAINTENANCE AND REPAIR OF EQUIPMENT

##### 4.4 Transport equipment

Maintenance and repair methods and operations for multimodal transport equipment such as containers.

##### 4.7 Independent shops

Availability and condition of independent shops that provide maintenance and repair services for multimodal transport equipment.

#### 5. DESIGN AND CONSTRUCTION OF EQUIPMENT

##### 5.1 Design standards

Structural, dimensional, weight and marking standards for containers and other types of multimodal transport equipment (whether ISO or national standards) used by the country. Bases for specifying standards.

##### 5.4 Register of firms

Register of domestic firms that construct or assemble multimodal transport equipment such as containers; production capacity; annual production; financial situation; etc.

##### 5.5 Average costs

Average costs of acquiring or constructing multimodal transport equipment such as containers, in local currency and foreign exchange, with and without taxes.

## 6. TRAFFIC AND SERVICES

### 6.1 Services

Services and itineraries offered by multimodal transport companies, classified by route; quality of the services. Establishment and government regulation of services.

### 6.3 Freight traffic

Past and projected traffic: total number of tons of domestic freight and freight of foreign origin or destination arriving, departing or in transit shipped in multimodal transport equipment such as containers, classified by main products; traffic handled by individual dry ports and multimodal transport companies.

### 6.4 Operations

Statistics and forecasts of multimodal operations: total number of containers and other units of multimodal transport equipment shipped domestically and arriving, departing and in transit in the country, classified by type of unit; operations of individual dry ports and multimodal transport companies. Operating procedures other than those related to safety.

## 7. OPERATING EFFICIENCY AND COSTS

### 7.4 Operating costs

Total and unit costs of multimodal transport operations, with and without taxes, in local currency and foreign exchange.

## 8. RATES

### 8.1 Structures and levels

Structures and levels of multimodal transport rates such as door-to-door rates, between pairs of origins and destinations and per ton-kilometre, classified by routes; rates for international services; proportion and type of traffic carried under door-to-door rates. Recent and proposed changes in rates.

### 8.2 Government regulation and control

Government regulation and control of multimodal transport rates.

## 10. PLANNING

### 10.4 Plans

Existence and scope of development plans that affect multimodal transport; targets for dry port and multimodal transport service development to meet expected demands for multimodal transport.

### 10.6 Investment programmes

Investment programmes of agencies responsible for dry ports and of the multimodal transport companies; estimates of local currency and foreign exchange costs, schedules for implementation and benefits expected of the programmes. Relation to previous programmes. Projects included in the programmes; criteria used for their selection (see description of investment projects in Section 20).

### 10.11 Past investments

Investments made in multimodal transport in recent years and their apparent effects. Relations between investments programmed, budgeted and carried out.

### 10.12 Social effects

Expected social effects of proposed investment programmes or programmes for the introduction of new services related to multimodal transport; apparent effects of recent programmes.

## 20. INVENTORY OF INVESTMENT PROJECTS

Description of investment projects for dry ports and for multimodal transport services, from those still in the conceptual stage to those under construction or completed.

## 30. FLOWS AND QUALITY OF INFORMATION

### 30.1 Flow diagrams

Flow diagrams of procedures for collecting, processing and filing information generated by the dry ports and multimodal transport companies, indicating the destination (users) of this information at each stage of transformation or level of aggregation of the data. Forms or computer printouts used at the different stages of processing.

## 40. TECHNICAL ASSISTANCE

Technical assistance for multimodal transport, financed by grants or loans from international organizations or individual governments.

## 50. GENERAL AND METHODOLOGICAL ASPECTS 16/

### 50.1 General aspects

General basic concepts related to multimodal transport.  
Theoretical reference works.

### 50.2 Methods of planning and operation

Methodologies and models for the planning and operation of multimodal transport, such as traffic forecasting methods, simulation models or rate systems.

### 50.3 Technical characteristics

Physical design and construction characteristics for infrastructure and equipment, of interest as references for general application. References to ISO and other international standards.

### 50.4 Research programmes

Programmes of research related to multimodal transport.

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16/ This topic is of somewhat broader scope than the others in this chapter, since it also can serve for the classification of information that does not refer to the country but that is of technical interest. In general, such information will not be taken into account when the Manual is used as an outline for a diagnosis of the national transport sector.