AN APPROACH TO NATIONAL TRANSPORT PLANNING IN VIETNAM

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Abstract: Vietnam's transport sector has developed in the course of changes in the country's overall socio-political environment, from centrally planned to market-oriented system. This paper intends to review Vietnam's experience in transport development and explain a new approach in national transport planning based on the work undertaken in the recently completed national transport and strategy planning survey (JICA 2000).

Key Words: national transport planning, strategic planning, and developing countries

1. INTRODUCTION

Since Vietnam introduced the market-oriented Doi Moi (renovation) policy in 1986 involving macroeconomic and microeconomic reforms, the country has undergone a marked transformation. Its economy has grown tremendously at an average rate of about 8% a year between 1991 and 2000, although it has slowed down due to the recent Asian financial crisis. The country has gradually opened and is now linked to the global economy. Foreign trade, exchange rate and investment regimes have been substantially liberalized, and exports and imports have increased. Notwithstanding these reforms, the country still faces formidable challenges. It remains one of the poorest in the world, with a gross domestic product (GDP) of about US$ 400 per capita in 2000. The discrepancy in income distribution and growth between rural and urban regions and between the northern, central and southern regions is increasing.

Recognizing that transport infrastructure is a key catalyst for economic development, as experienced in developing countries and elsewhere and confirmed by empirical research, a large number of projects have been prepared and implemented during the 1990s in various transport subsectors including road, railway, inland waterway, maritime, and air. With this transport infrastructure in very poor state has been reduced considerably. Though unfinished work remains, improvements have allowed traffic volume to increase by 2.1 times by passenger-kilometer and 2.8 times by ton-kilometer during the period 1990-1997. Vietnam, intending to become a member of the World Trade Organization (WTO) and the Association of Southeast Asian Nations Free Trade Area (ASEAN AFTA) and facing the next stage of national development, is building more effective transport systems to strengthen its economic competitiveness and degree of social equity, despite limited financial and human resources.

In order for Vietnam to address a wide range of national development issues as well as those in the transport sector itself which have been emerging as the economy grew, transport planning has become more and more important in formulating the right development strategies.

2. TRANSPORT PLANNING AND DEVELOPMENT IN VIETNAM

The planning and development experience in the transport sector of Vietnam can be broadly divided into the following three stages:

1) Transport Planning and Development under a Central Planning System

Prior to the Doi Moi policy, the entire process of planning and implementation of transport policy/program/projects were highly centralized. Even at the policy formulation stage, a comprehensive long-term transport structure plan which would be used as framework to formulate policies and prepare programs was lacking. Resources that support the process such as staffing, database and methodologies were also insufficient. Then centralization was apparent in every stage of a project execution, from project identification, plan preparation, design, evaluation, funding up to implementation. Economic evaluation of a project was distorted due to the application of official prices determined by the State Pricing Commission which generally underestimated the actual cost of goods and services. Evaluation method adopted in assessing transport projects was primarily limited to payback period method with oversimplified input data and assumption (Shimazaki T., *et al* 1994). Line departments of central ministries undertook project implementation.

Funding was also constrained due to the weakness of the formal economic sector, the sudden fall in economic assistance from Council for Mutual Economic Assistance (CMEA) countries (UNDP 1994), particularly from the former Soviet Union, and the dramatic reduction in bilateral trade with these countries. American embargo has also made it impossible to quickly use alternative trade links and sources of capital. All these factors affected the country's transport sector, creating an environment very much different from what Vietnam currently envisions for itself.

2) Transport Planning and Development in Transition

The main features of the Doi Moi policy including openness to direct foreign investment, promotion of multi-economic sector, rural reforms, price liberalization, and devaluation of the exchange rate, among others, brought about tremendous direct and indirect impacts on the transport sector. The reforms made during the 1990s included the formulation of a legal basis for the organization, function, power, and responsibilities of the MOT and subsector agencies (between 1991 and 1996), removal of many commercial functions from the MOT, equitization of transport SOEs (still ongoing), active rehabilitation work on war-damaged transport infrastructures, facilities and equipment, deregulation of transport services (especially road and inland waterways), and others.

The Government's policy for the transport sector during this period was to restore and modernize basic transport infrastructure. Investments focused on restoring the trunk road system, inland waterway network and seaports in the northern and southern growth areas, as well as improving accessibility in rural areas. The importance given by the Government to the transport sector increased the share of public capital expenditure in the total state capital expenditure from 18.8% to 29.0% between 1993 and 1998. Transport capital/recurrent expenditure as percent of GDP increased from 1.7% to 2.2% between 1993 and 1998.

While the transport sector has become more integrated with other social and economic sectors in the national and international markets, transport planning has become complex and critical. During the 1990s, a substantial number of transport studies have been carried out (see Figure 1). The first nationwide transport master plan was formulated for the period 1984-2004 with technical assistance from the Soviet Union. The study, started in 1984 and completed in 1989, was documented in Russian. Since it focused on limited aspects of the transport sector under a centrally planned government, a review became necessary. The second master plan was undertaken with assistance from the United Nations Development Program (UNDP) and completed in 1992 (UNDP-BCEOM). The National Transport Sector Review (NTSR) is practically the first comprehensive nationwide transport master plan documented in English and accepted as a basis for formulating transport policy and project by the Government.

During the course of the sector's development, the capacity to plan and manage the transport sector has likewise improved significantly. The standard evaluation method has been widely applied to determine projects' feasibility and prioritization. Wider aspects of project impacts have been covered, not limiting to economic, financial and technical but also social and environmental. However, it is still observed that too much emphasis has been placed on funding physical investments and too little on developing human resources (UNDP 1996). Hence, production efficiency of the transport system (infrastructure, facilities and operations) has remained low.

3) Challenges Facing Transport Planning

Experiences in transport sector development in Vietnam during the 1990s suggest that there is a need for a new approach to national transport planning to meet the diversifying needs for transport services at international, national and local levels (WB 1994, 1999,2000). The issues to be addressed extend widely as is explained in the following chapters.

3. CURRENT PROFILE, PROBLEMS AND ISSUES OF THE TRANSPORT SECTOR

3.1 Physical Conditions

Vietnam has a total of 331 thousand square kilometers extending about 1,700 km north to south. Low, flat lands are characteristic of the Red River delta, the eastern plain and the Mekong River delta which may allow dense habitation but are vulnerable to floods. Mountainous areas along the border provinces with China and Lao PDR hamper smooth traffic and make transport development costly.

Vietnam's population is very densely settled and almost all cultivable land is in use. Pressure on natural resources and the environment is acute. About 30% of land is cultivated and 29% is classified as forest and woodland. Massive forested areas were damaged and burned during the long war from 1945 to 1975. Vietnam still bears severe scars: During the recent half century, forest cover declined from 43% in 1943 to 29% in 1997.

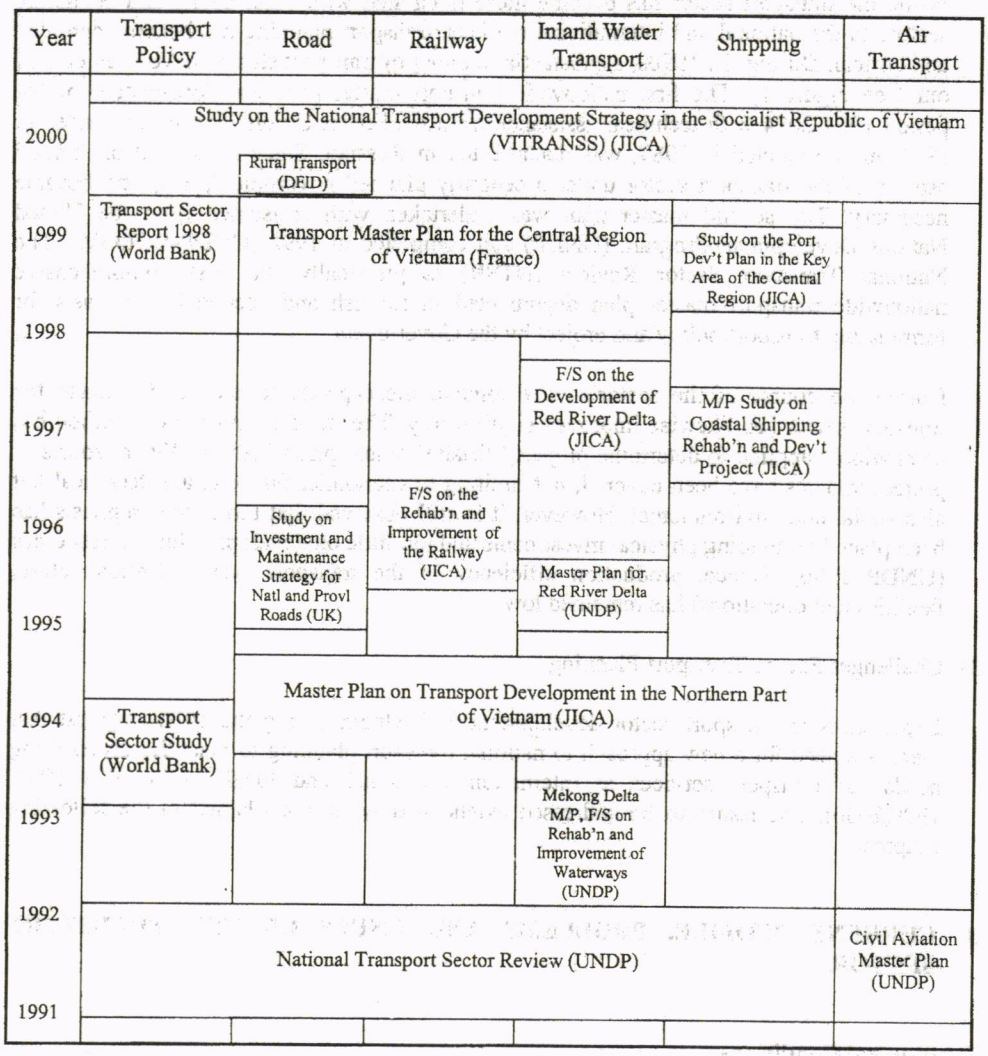


Figure 1. Major Transport Studies during the 1990s

3.2 Socio-economic Profile

Vietnam had a population of about 76 million in 1997. In the 1950s, Vietnam's population growth rate was 3.4%. As the government introduced its family planning policy, or so-called "two-children policy", in the early 1960s, growth fell to 3.1% in 1965, 2.2% in 1980 and less than 2% since 1996. The population density in the Red River delta is extremely high (1,194 persons/sq km) compared to the national average (231 persons/sq km) and the Mekong River delta (421 persons/sq km). The least populated region is the central highlands (55 persons/sq km) followed by the northwest (61 persons/sq km). The level of urbanization is still low (20.8%) except for the northeastern south (44.5%).

Although Vietnam has registered high economic growth during the past decade, it is still one of the poorest countries in the world, and regional disparity seems to be widening. More than 50% of total GDP comes from the northeastern south and the Mekong River delta in the south, followed by the Red River delta in the north with 19% share (see Table 1).

Table 1. GDP Sectoral Composition by Region, 1997

	GDP (VND bil)	Per Capita GDP (VND mil)	% to Total	Share by Sector (%)		
				Agri-culture	Industry	Services
1. Red River Delta	52,078	3.5	19.0	33.0	26.8	40.1
2. Northeast	22,905	2.1	8.4	46.0	24.9	29.1
3. Northwest	3,542	1.6	1.3	53.8	14.3	31.9
4. North Central Coast	21,788	2.1	8.0	46.3	18.2	35.5
5. South Central Coast	17,615	2.7	6.4	38.1	23.6	38.3
6. Central Highlands	6,751	2.7	2.5	64.3	12.9	22.7
7. Northeastern South	94,665	7.8	34.6	11.2	47.6	41.2
8. Mekong River Delta	54,622	3.3	19.9	56.6	16.7	26.7
Total	273,966	3.6	100.0	32.5	31.2	36.3

Source: GSO, "Statistical Yearbook", 1998

3.3 Overview of Vietnam's Transport Sector

General: The transport sector of Vietnam consists of the full range of transport modes: road, railway, inland waterway, coastal and sea shipping, and aviation. The transport sector grew significantly during the 1990s through the development of transport infrastructure and the effects of general reforms, deregulation and commercialization. Various new services commenced such as container transport on road, rail and inland waterway, bonded transport, ICD operation, scheduled liner operation even in coastal shipping, liberalized transit transport between Lao PDR, etc.

The active investment in transport infrastructure with particular regard to the rehabilitation and upgrading of all modes, including urban and rural transport, has been continuing. In 1999 there were 42 transport projects that were either ongoing or committed. Many are expected to be completed by 2000-2003. The projects cost US$ 5.7 billion, of which 72% was for roads followed by air (12%), ports (6%), railway (2%), inland waterway (2%), rural transport (3%), and urban transport (3%).

Road and Road Transport: Vietnam has a total road network of over 200,000 km as of 1999. National roads, however, account for merely 15,284 km, and provincial and district roads account for 16,403 km and 36,405 km, respectively. Village roads, comprising 130,000 km, are considered rural roads. The entire road network is relatively well developed but poor in quality. Only 60% of national roads and 30% of provincial are paved. The poor condition of rural roads makes access to many villages difficult. Motorization level is still low (2 cars/1,000 population in 1996), but the number of vehicles has been growing rapidly. The high level of motorcycle ownership is a unique feature in Vietnam.

The main issues confronting the subsector include poor quality of service, poor primary/secondary roads, lack of tertiary roads, lack of legal framework, inadequate road

safety programs, weak infrastructure management, especially at provincial level, and lack of sustainable financing.

Railway Transport: Railway operates over 2,600 route-kilometers, comprising seven main lines and several branch lines. The network is all of single track mainly with 1,000 mm gauge and some 1,435 mm gauge and dual-gauge sections. Vietnam's railway subsector has two divisions: transport and infrastructure. Government is responsible for infrastructure and Vietnam Railways (VR) pays the Government 10% of its operating revenue as rent for the infrastructure. VR, an independent SOE under the MOT, has a total of about 42,000 employees.

In 1999, VR operated 65 passenger trains and 91 freight trains daily. VR transported 9.7 million passengers (2.5 billion passenger-km) in 1998 and 4.8 million tons (1.5 billion ton-km) in 1997. Tracks, tunnels, bridges, and signals are generally in poor condition but railways are relatively well operated technically.

The subsector faces the following issues: lack of market orientation, low productivity, low utilization of assets, huge backlog in infrastructure maintenance, lack of modern business tools, inadequate financial/performance agreement between railway and the Government.

Inland Waterway Transport: About 8,000 km of rivers are used for inland waterway transport, of which Vietnam Inland Waterway Administration (VIWA) manages 6,230 km and the rest by local governments. Transport services are mainly provided by SOE operators in the north and by private operators in the south. Although inland waterways play an important role in the deltas, navigability is reduced due to substantial dredging backlog and lack of navigational facilities, among other reasons. Moreover, facilities and equipment of river ports are mostly in poor condition. Other issues besetting the subsector are poor port services, weak market mechanisms, inadequate navigational aids, lack of legal framework, weak infrastructure management, and lack of sustainable financing.

Maritime Transport: Vietnam's ports are owned and operated by the state except for a few. They suffer from shallow water depth, inadequate infrastructure and cargo handling equipment. In spite of these constraints, cargo traffic through Hai Phong, a gateway port in the north, and Saigon, a gateway port in the south, has been constantly increasing, with cargo handling volume of 6.3 million tons and 8.3 million tons, respectively. Container vessels on longer voyages avoid direct calls, however, where the entry is through long channels. Hence, port expansion, especially in the north and south is being promoted including the development of new, deepwater ports at Cai Lan in the north and Vung Tau-Thi Vai in the south.

Some 10 Vietnamese shipping operators owned by the state and local government, joint ventures, etc, and about 25 foreign shipping operators are engaged in the country's foreign trade. Vietnam National Shipping Lines (VINALINES), a SOE, which holds 60% of the total national fleet, shared only 11% of the total foreign trade due to stiff competition from foreign operators. Domestic shipping consists of sea-cum-river shipping in the delta areas. Although coastal shipping mainly carries agricultural, mining and industrial products, container traffic is gradually becoming significant. The performance of ports and shipping are related. The small capacity and low efficiency of ports discourage foreign shipping operators from assigning modern vessels to Vietnam routes.

The issues facing maritime transport include limited competition in coastal shipping, lack of experienced management, poor condition of shipping fleet, inadequate port services and charging system, lack of modern handling methods, inadequate dredging, incomplete legal framework, weak maritime management, and insufficient foreign investment.

Civil Aviation Transport: The Civil Aviation Authority of Vietnam (CAAV) is responsible for 18 airports and air navigation services. The three major airports in the north (Hanoi), center (Danang) and south (Ho Chi Minh City or HCMC) handle 1.6 million, 0.4 million and 5 million passengers in 1998, respectively, and still increasing significantly.

The subsector is confronted by various issues including limited competition both in airline and terminal operation, lack of experienced management, poor airport facilities, unupdated CNS/ATM system, inadequate legal framework, weak infrastructure management, and lack of sustainable financing.

Rural Transport: While many primary roads are being rehabilitated, there is growing concern to improve accessibility in rural areas where 80% of the country's population resides. The main issues in rural transport include limited all-weather access by motor vehicle, existing price controls on transport services, weak infrastructure management, and lack of sustainable financing.

Cross-border Transport: A total of 24 provinces in Vietnam share a long border (4,639 km) with the adjoining countries of China, Lao PDR and Cambodia. The significance of cross-border transport can be viewed from both the regional and local perspectives. The current initiatives for regional cooperation through the ASEAN, Greater Mekong Subregion (GMS) and other bilateral arrangements require the integration of transport networks and facilitation of transport services, which are expected to expand with socio-economic activities of the member countries. Cross-border transport in Vietnam's context is also important for rural development because most of the defined corridors cover rural and otherwise isolated mountainous areas where accessibility is extremely poor and poverty prevails. The main issues in cross-border transport include limited and uncertain traffic levels, limited physical infrastructure and institutional bottlenecks.

Multimodal Transport: Seamless transport services at reasonable cost to make the transport sector more competitive have become an increasingly critical objective, both for international and interprovincial transport of goods. The multimodal transport concept is being recognized as important in Vietnam but services are still very much constrained due to various factors such as lack of guaranteed scheduled services, lack of cargo information systems, lack of modern cargo handling methods, poor access links to ports, physical constraints on containerization, bureaucratic bottlenecks, lack of legal framework, and inadequate foreign investment.

Sector Management: Various subsector issues mentioned above require a sector-wide approach. Key transport sector management issues, among others, include weak management, need to divest remaining commercial functions, lack of trained staff and training policies, no level playing field and basis for cost recovery, slow pace of SOE reform, and need to generate new revenue sources.

4. NEED FOR MORE STRATEGIC APPROACH

As the transition to a market-based economy has so far been making successful progress and the restoration of transport infrastructure has more or less been completed, the next step for Vietnam is to tackle remaining transport issues and further strengthen the competitiveness of the national transport system. However, this process is much more complex, because (1) transport policy and strategy need to play a more explicit catalytic role to enhance socio-economy at national and local levels and to be integrated with the overall national planning process, and (2) resources are limited while demand is growing and diversifying. Establishing a strategy to allocate resources among submodes as well as regions thus requires a more effective planning mechanism for consensus building and sector efficiency.

To support this, the strategy should be comprehensive, scientific or systematic and participatory, the core elements of the planning process attempted in the recently completed national transport strategy study (VITRANSS). While the overall planning approach is conceptually illustrated in Figure 2, the core elements of the strategy are briefly as follows:

- **Comprehensive:** The development of interurban and international transport is indispensable for integrating local and regional networks into the national and international grids and is crucial for the movement of goods and people domestically and the linkage of domestic with international markets. Roles of different transport modes and many aspects of transport sector are interactive. Seamless transport of goods and people requires multimodal or intermodal arrangements in terms of facilities, institutions and operations. Integration of the transport sector with regional development is still an important planning issue, especially to attend to poverty more effectively. In order to address a wide range of issues directly and indirectly related to transport sector, a holistic approach has become very critical.

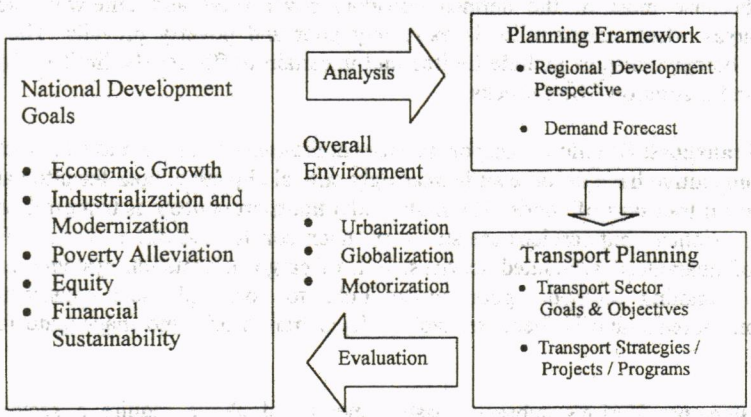


Figure 2. Concept of the VITRANSS Approach

- **Scientific/Systematic:** To support a comprehensive transport planning, a wide range of primary transport data were collected through a series of nationwide surveys including interprovincial OD surveys of goods and passengers. An analytical tool to support the national transport planning process was developed with the following objectives.

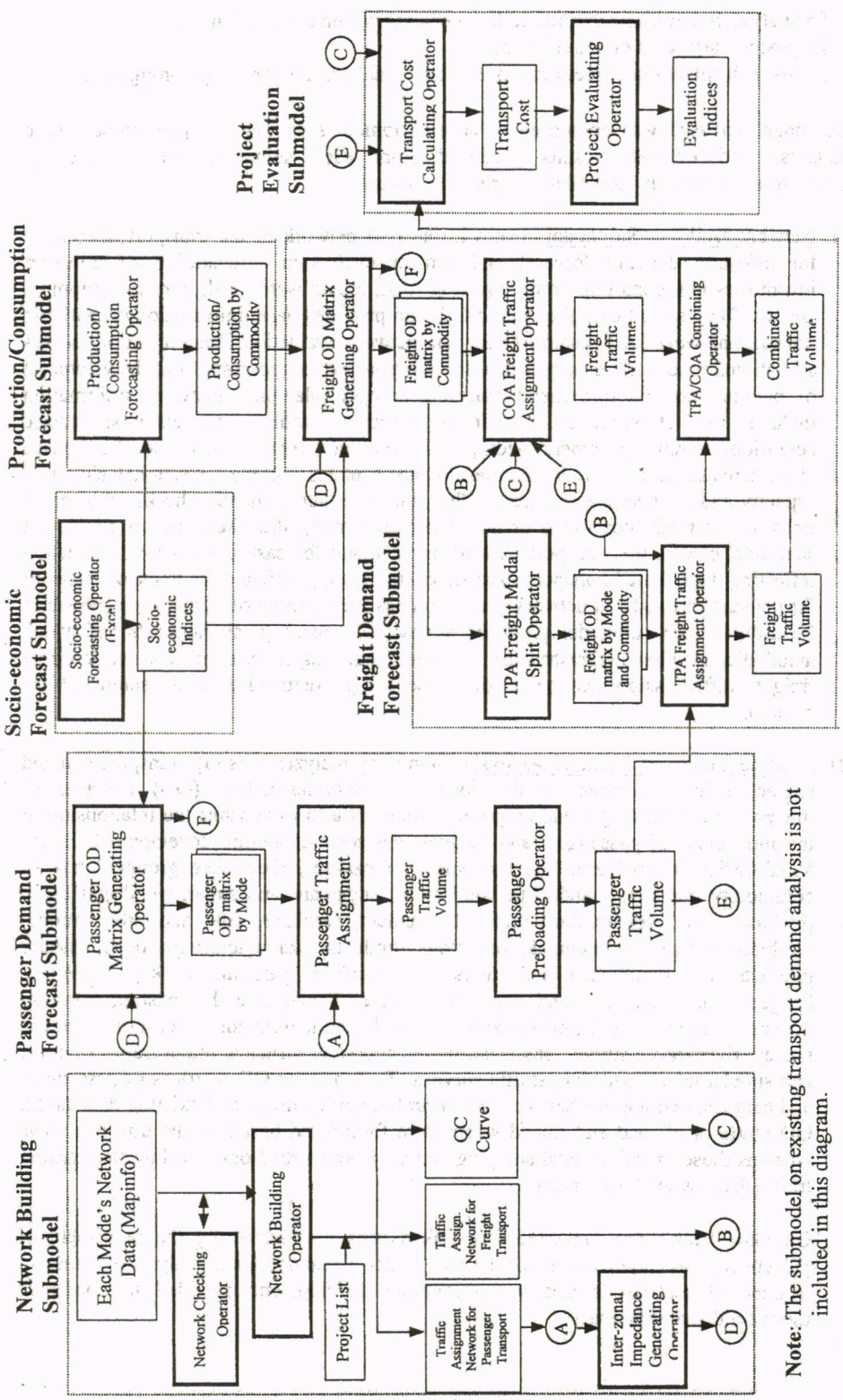
- To analyze and evaluate various policy scenarios within a limited time;
- To process large data effectively; and
- To make the planning process transparent and enable to transfer the planning process.

The approach used was composed of seven submodels so that the practitioner could diagnose and evaluate results produced from each submodel (see Figure 3). Characteristics of each submodel are briefly as follows:

1) Network Building Submodel creates a transport network of the transport alternative for effective demand forecast and project evaluation. Preparation of transport inventories is the starting point, covering road, inland water, rail, port and shipping, and air. They are all compiled into a GIS and provided basic information on building transport network for demand forecast and network evaluation. Road inventory covers all national roads and some provincial roads regarded as important from the viewpoint of national and interprovincial transport network planning. Network information included road classification, road length, pavement width, pavement type, surface condition, terrain, pavement width, link type, etc, which determine the service characteristics of a road. Inventories of other modes include operational situation, capacity and service characteristics. This submodel automatically checks whether all links are correctly connected or not. After confirming that there are no errors, the submodel creates the transport network for demand forecast and network evaluation reflecting the selected transport alternatives. Integrating GIS and the transport network for demand forecast and network evaluation has the potential of saving time and labor. In addition, the submodel produces a cost-flow curve, a characteristic of which automatically allows infrastructure extension requiring investment cost while doing freight traffic assignment calculation (see freight demand forecast submodel for details).

2) Existing Transport Demand Analysis Submodel analyzes existing transport demand characteristics expressed in the form of origin-destination (OD) matrices of interprovincial passenger and cargo movement. It also establishes the relationship of the movement of passengers and cargoes and socio-economic development. In the VITRANSS, in analyzing the movement of cargoes, they were grouped into 13 commodity items (rice and other food crops, sugarcane and sugar, wood and forest products, steel, construction materials, cement, fertilizer, coal and other mining products, petroleum products, industrial products, manufacturing goods, fishery products and animal meat and others) due mainly to particular package style (eg, bagged, tank, balk, etc) and consignment size. To analyze the existing transport demand, a series of transport surveys was conducted nationwide covering road traffic survey, river traffic survey, passenger/driver interview survey at major transfer points, and supplemental road/river traffic surveys. To formulate OD matrices of passengers and cargoes, two approaches were taken: traffic survey usage and existing data usage. OD matrices of road and inland water were formulated based on the traffic surveys whereas those of rail, coastal shipping and air were worked out based on the existing traffic data owned by agencies.

   Unlinked trips were converted into linked trips by considering the movement of passengers and cargoes at major transfer points. Cross-sectional analysis of transport demand characteristics and socio-economic development provided the basis of transport demand forecast.



Note: The submodel on existing transport demand analysis is not included in this diagram.

Figure 3. Overall Structure of the Analytical Framework to Support the National Transport Planning Process

3) Socio-economic Forecast Submodel: Under the unstable economic conditions in Vietnam, a simple macroeconometric model was adopted, which best captured the Vietnamese economy from the available data on socio-economic development. Its theoretical basis is clear and simple with requirement of less source data, making it suitable for application in developing countries. The basic concept of the model is to explain the interrelationships of GDP/GRDP, saving, investment, capital accumulation, employment, capital equipment ratio, and labor productivity per employee. In the VITRANSS, socio-economic projection was developed given the two assumptions of low and high scenarios considering future foreign investment. Estimation results revealed that government forecast of GDP growth fell between the low and high assumptions.

4) Production/Consumption Forecast Submodel: Considering the package style (ie, bagged, tank, bulk, etc), consignment size and seasonal impact, the cargoes were grouped into 13 commodity items in the VITRANSS. Future production and consumption were forecast mainly by considering socio-economic framework, relevant government plans/policies on agriculture/industry development, area development/preservation, and international trade, such as changes in cultivated area, crop productivity, government policy on exploitation/cutting/preservation, development plan of plant and its capacity in term of production, and changes in population and GDP, per capita consumption, processing capacity of plant, government policy on agricultural/industrial consumption. Besides, import and export of cargoes were forecast at major ports. With this submodel, future production and consumption and import and export were estimated by province, which provided important variables for estimating future freight demand.

5) Passenger Demand Forecast Submodel: The future passenger demand was forecast through the classic four-step model: trip generation/attraction, trip distribution, modal share, and traffic assignment. Urban population and GDP were important determinants to forecast generation and attraction of passengers. The "gravity model" with variables of generation, attraction and travel distance was applied to determine OD matrices of passengers. Aggregate binary choice model using a variable of time difference was adopted to determine modal share between OD pairs and, as a result, OD matrices according to mode were prepared. Incremental traffic assignment method was adopted to assign OD matrices of passengers on the link. This submodel automatically calculated the above processes to create OD matrices of passengers by mode and to assign OD matrices of passengers on the link. Using this submodel, information on the increase of passenger demand in a province or on a route and change in modal share can be obtained in the form of vehicle unit, passenger car unit (PCU) or passenger unit, compared to the present demand of passengers.

6) Freight Demand Forecast Submodel: Like passenger transport, the future freight demand was forecast through the classic four-step model with different explainable variables. Surplus (production minus consumption) and deficit (consumption minus production) as well as socio-economic data were key determinants for generation and attraction of freight. The "Fratar method" was applied to estimate OD matrices of freight by commodity item due mainly to poor fitness of gravity model.

Regarding freight traffic assignment, two approaches were taken, namely: trend pattern approach and cost-optimizing approach. The former assumed that the future

has the same modal share as at present for each OD pair, whereas the latter assumed that more freight volume is assigned to less costly mode or route. This approach made it possible to propose desirable modal balance by comparing assignment results of trend pattern approach and cost-optimizing approach. In particular, cost-optimizing assignment can use both traditional cost-flow curve and incremental cost-flow curve, optionally. The incremental cost-flow curve including not only operating and maintenance cost but also investment cost in terms of economic cost, allowed automatic infrastructure expansion while doing traffic assignment calculation, ie, when traffic flow approaches capacity, the capacity will be automatically extended, requiring investment cost over the extension. This approach will be very useful and effective for the planning process in that it can provide planners with preliminary information as to the extent infrastructure or investment is needed. In contrast, the traditional cost-flow curve is the same as that usually used in traffic assignment, ie, it has mono increase function of traffic volume and transport cost. Planners can opt for either traditional cost-flow curve or incremental cost-flow curve to serve their purpose. This submodel automatically calculates the above processes to create OD matrices of freight by mode and commodity item and assigns OD matrices of freight on the link. Using this submodel, information on the increase in freight demand in a province or on a route and change in modal share can be obtained in the form of vehicle unit, passenger car unit (PCU) or ton unit, compared to the present demand of freight.

7) Project Evaluation Submodel: Traffic volume of passengers and freight assigned on the route and cost-flow curve results in transport cost comprising time cost, operating and maintenance cost for passenger and freight transport. Comparison of transport cost between "with" and "without" cases gives benefit over the proposed project. Regarding investment cost, if depending on traffic assignment with incremental cost-flow curve, computer simulation will provide required investment cost. On the contrary, if depending on traffic assignment with traditional cost-flow curve, an estimate on investment cost should be additionally provided. Estimated benefit and cost make possible a cost-benefit analysis and, as a result, evaluation criteria of economic aspect such as cost-benefit ratio, economic net present value and economic internal rate of return can be obtained.

In summary the analytical framework used resulted in the following:

- A set of primary data was developed through the conduct of various transport surveys.
- GIS information was integrated with transport network building for demand forecast and evaluation.
- A simple macroeconomic model requiring fewer data was introduced in estimating economic parameter.
- A methodology was introduced especially for freight traffic assignment which used incremental cost-flow curve comprising operating, maintenance and investment costs allowing infrastructure extension while doing traffic assignment calculation.

However, an analytical tool to support the planning process has some limitations and could be further strengthened by:

- Taking into account a quantitative analysis of environmental impact;
- Introducing a more simplified model or one requiring less data, eg, application of disaggregate model and OD trip formulation from traffic count;

- Strengthening a function to provide the user, community, decision-maker, etc. with various and uncomplicated information necessary for decision-making; and
- Applying a user-friendly analytical tool.

- **Participatory:** The entire planning duration of 16 months was participated by stakeholders to strengthen work relationship and participatory planning process through the following modes:

1) A multisectoral Steering Committee (S/C) headed by the Vice Minister of the MOT was organized which included senior representatives of other agencies such as Ministry of Planning and Investment (MPI), MOT, VR, VIWA, Vietnam Road Administration (VRA), Vietnam National Maritime Bureau (VINAMARINE), CAAV, and Transport Development and Strategy Institute (TDSI). A total of five S/C meetings were held.

2) A joint working team comprising the Consultants Team and Vietnamese counterpart team was established on a full-time basis.

3) A Task Force comprising senior officials of subsector agencies was also organized to provide consultation on various issues arising during the course of the Study. A total of four Task Force meetings were held.

4) A series of workshops was conducted to disseminate the major outputs of the Study and to consult with other stakeholders including representatives of transport associations and business circle. A total of six major seminars and seven subsector workshops were held

5) A series of learning sessions and training courses was held for the Counterpart Team to facilitate technology transfer on key aspects of the Study. A total of 12 learning sessions and month long training courses on model application were held.
6) Donors were consulted through seminars/workshops and separate consultation meetings.

In addition to the above, a website (www.vitranss.org) was opened so that others can access VITRANSS information.

5. CONCLUSION

An attempt to exercise a comprehensive and participatory approach in national transport planning in Vietnam has been accepted by transport sector agencies and other stakeholders. The outcome of the exercise includes the shared view on the future transport sector goal and strategies, an understanding of the planning process and endorsement of the transport strategy to the national plan. However, this initial success also suggests there are a number of areas, which should be attended to, to make the role of transport planning more vital in the future. They are as follows:

1) Improvement of the analytical framework: The first round of the exercise was considered very useful in establishing a basis for a comprehensive and quantitative

analytical framework based on relatively simple database. The submodels, which can support respective stages of the planning process, can be further improved.

2) Capacity building: The planning process was greatly affected by the quality of personnel through their interpretation of the analytical results and reflecting them in policies and plans. For this further training of personnel is necessary.

3) Institutionalization of the process: The participatory process will be a core of an effective transport planning in Vietnam. The process should be further elaborated and institutionalized to ensure the involvement of transport sector stakeholders and reflect the need in policy and program.

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