5 INSTITUTIONS

5.1 Institutional Arrangements

1) Overall Organization

The main issues with the overall organization of the transport sector include the excessive number of reporting lines to the MOT, the lack of MOT authority at provincial level and the lack of oversight by the MOT of the whole transport sector, including aviation, which makes the development of comprehensive transport policies and plans more difficult.

In particular, the MOT has limited control over the appointment of PTA directors, who are presently appointed by Provincial People's Committees. The PTAs are ultimately responsible for implementing many transport policies and reporting on transport activities to the ministry, so it would be appropriate to have stronger control over the appointment (at least in terms of the professional qualifications).

2) Overcentralized management systems

Subsector agencies under the MOT are seriously weak in several respects. Often they are not given authority for managing construction projects in their subsector, this being given to especially created PMUs responsible to the MOT. This undermines the role of subsector agencies as managers of infrastructure, and there is a danger that the expertise in project management developed in the PMUs will be dissipated once the projects terminate and the PMUs are disbanded.

Subsector agencies are often weak in planning. For example, VINAMARINE cannot develop plans for port development effectively because it lacks information about ports not under the MOT. Since it cannot comment informatively on port development plans proposed by other organizations, there is a serious risk that port developments will occur without regard to Vietnam's overall development priorities (for example, ports constructed in the wrong place that incur costly additional inland transport and other infrastructure). Even the MOT does not seem to be as strong as it should be to carry out strategic port planning: The Prime Minister has had to intervene in the past year to reinforce MOT's authority.

Within it, many departments report directly to the minister (for example, the new ASEAN department reports independently from the International Department). Depending on the organizational policy of the minister, there is scope for consolidation of these general departments into a smaller number, with appropriate subdivisions (maybe combining economics, planning and regulatory aspects to improve coordinated policy and plan development). The main responsibilities of each department are shown in Table 5.1.1.

Throughout the transport sector organizational units have insufficiently well-defined function and authority (which limits the degree to which job descriptions can be defined). It seems not unusual within government for more than one person to be appointed to cover the same area of responsibility, and this causes confusion. Lack of coordination of infrastructure planning, policy development, maintenance and implementation are frequently heard from the provinces. Over-centralization is clearly one reason for delays in implementing projects.

Table 5.1.1

Functions of the Ministry of Transport General Staff Departments

Department	Function	Implementing Decree	Number of Staff
Minister's office	Counsels the minister and provides day-to-day executive leadership	1678QD/TCCB-LD of 7/7/88	77
Inspection Board	Inspects adherence to administrative rules	1151/QD-TTR of 12/6/93	15
Planning and Investment	Administers planning, investment projects, planning statistics, import-export (foreign investment in infrastructure)	1460QD/TCCB-LD of 12/9/96	32
Finance and accounting	Administers and manages the overall state financing of the transport sector	2162QD/TCCB-LD of 16/8/96	12
Legal and transport	Administers legal and transport matters	2153QD/TCCB-LD of 15/8/96	16
Science and technology	Administers and takes care of policy in science, technology, industrial production/organization in the transport sector	2166QD/TCCB-LD of 16/8/96	18
Labor and personnel	Administers several fields such as organization, state officers, training and wages in the transport sector	576QD/TCCB-LD of 18/3/88	21
International relations	Administers guidelines and policy-making of international relations in the transport sector	2168QD/TCCB-LD of 16/8/96	12
ASEAN	Assists the minister in relation to ASEAN transport affairs	4451QD/TCCB-LD of 16/8/96	6
All departments			209

Note: As defined in Decree No. 22-CP dated 22 March 1994, with the addition of the ASEAN Department in accordance with MOT Decision No. 4451 QD/TCCB-LD dated 16 October 1995.

3) Lack of trained staff and human resource development programs

The training of staff has not kept pace with the rate at which MOT's organizational units have adopted new functions, requiring new guidance documents (often based on international practice). This can be traced to two factors (which adversely affect not only sector management but also management of transport enterprises):

- weakness in human resource management, which has been considered a peripheral activity in Vietnam with low status,
- lack of human resource development policies – the MOT still has to develop its policy and specific strategies for improving staff qualification levels, training and staff motivation.

Training in sector management has tended to focus on project implementation of internationally funded projects, but even there difficulties occur due to lack of training (partly because the government has not used donor funds available for training). Elsewhere, according to past studies (ITAMC Development Strategy and Action Plan, 1995), management training programs are poor and outdated, and do not meet the needs of administrative cadres, specialists in planning, economics, engineering and statistics, or senior policy-makers.

In particular there is an underlying lack of experience of modern planning tools, project appraisal and management systems, procurement techniques and regulatory systems appropriate for market economies. Experienced economists in the transport sector have had most of their training in centrally-planned economies rather than market economies, and few younger economists seem to be getting overseas training to equip them for the future needs of the sector. Many staff lack basic skills and in the use of modern technology (such as computers for database management).

Elsewhere in the transport sector there is a general lack of experienced managers with knowledge of modern business methods. There is also a serious shortage of skilled technical staff. On the other hand, there is an excess of unskilled staff in the ports (where VINALINES estimate that only 50% of current staff are actually required), the railway (where 20% less staff are estimated to be needed over the next ten years) and many other SOEs. One factor constraining the government's equitization program is the fear of redundancies.

These mismatches between supply and demand for labor in the transport sector require MOT human resource development policies and strategies that assess future qualification standards required throughout the transport sector and actions required to promote the supply of suitably trained personnel. Where there is an excess supply, retrenchment, retraining, compensation or other schemes have to be considered to deal with the social effects of redundancies. For developing such strategies, the Labor and Personnel Department of MOT needs strengthening.

4) Unclear and overlapping responsibilities

The MOT is currently reviewing its organizational responsibilities, in response to a request by government to all ministries to streamline the government machinery

by 15%. A number of issues are being actively discussed, including the question of whether or not aviation should be brought back into the MOT. Its Transport and Legal Department has two types of responsibilities – both to give advice on legal matters to any part of the ministry and to develop policy on transport matters. These two functions do not sit easily together and it is clearly of concern to the staff involved. Proposals to separate the two halves have not been accepted, possibly because it would increase the number of departments still further.

There is considerable uncertainty over the division of responsibilities between VIWA and VINAMARINE for planning and infrastructure management of river ways, but the MOT has proposed a possible division for discussion between these two agencies, based on the principle that VINAMARINE assumes responsibility for rivers serving sea ports. No final decision has been reached so far.

Responsibilities for VRA and VIWA have been revised, through provisional MOT decrees, based on the advice from the ADB Institutional Strengthening of the Vietnam Ministry of Transport Project. The decrees give these subsector agencies the responsibility to make plans and policies in their respective area for submission to MOT for submission to government. VRA considers that the MOT's Legal and Transport Department interferes in VRA's line management duties, and the source of the overlap appears to be the way that roads and road transport matters were separated in the past. However, the dispute appears to be resolvable under existing legal provisions provided that it is accepted that (a) VRA's policy-making role in transport is limited to proposing policy measures to the Transport and Legal Department which remains ultimately responsible for policy-making in that field, and (b) VRA's role in legal matters of transport is to propose legal drafts in accordance with policy guidelines given by the Transport and Legal Department. However, some confusion of responsibilities may be inevitable while the Transport and Legal Department retains the dual functions of transport policy-making and giving legal advice.

5) Lack of modern management systems

A major issue is the inadequate infrastructure maintenance systems found in the transport sector, attributable to the lack of modern maintenance management systems. This problem has been recognized for years and various attempts have been made to tackle the problem, but this remains a priority area for institutional strengthening of all kinds – new management systems, information systems (including comprehensive inventories of infrastructure and work planning/management tools), new guidance documents to define procedures (both to allow decentralization and devolution of responsibilities within the sector and to coordinate activities between agencies in transport and agencies outside, especially the police).

One recurring obstacle is the lack of appreciation of the nature of a database, as

a tool to collect and analyze information. All too often data is collected and analyzed manually in different parts of the organizations and used for administrators' own particular purposes rather than shared more widely. Computers are sometimes only used at a late stage in the process to produce neat tables and charts. The lack of centrally organized information leads to managers having several alternative sources of data, which usually conflict with each other. This makes decision-making very difficult and time-consuming.

It is estimated by MOT that only about 30% of the monitoring information required by MOT is currently available. A clear plan is urgently required to identify the MOT's remaining information needs and the best means to supply this. The lack of reliable monitoring information, of all sorts, leads to very poor follow-up of policy implementation by MOT. In many cases follow-up is limited to financial matters, with little concern for performance and level of service.

The poor information system also produces very poor statistics for planning purposes. The present system is still based on the old centrally planned system under which government could collect detailed information about activity at local level. Such an approach is impossible in a market economy, and so a new approach must be developed based on the approaches adopted in other countries. This too is a priority measure for improvement.

6) Inadequate financing mechanism for infrastructure maintenance and other administrative tasks

Here too is a problem which is recognized at all levels. The priority concern is to provide a sustainable mechanism for financing infrastructure maintenance to safeguard the state's assets and secure returns from ongoing investment. However, better financial mechanisms are required for other state management functions, including monitoring and enforcement, and human resource development in general. The lack of finance for some enforcement activities has led to some transport inspection staff being funded essentially from fines levied on offending transport users - which certainly does not encourage inspection teams to develop measures to reduce offenses.

5.2 Regulatory Framework

1) Lack of legal framework

The MOT has given high priority to developing the regulatory framework and government has adopted the Maritime Code on June 30, 1990 and the Law on Civil Aviation (followed by the Law on Amendments and Addition of the Law on Civil Aviation dated April 20, 1995). Equivalent provisions for other modes are not yet in place, although a draft road act has been prepared and there are draft bills underway for inland water and railway transport. Amendments to the aviation and maritime legislation are also being prepared.

The modal legislation has been and is continuing to be developed without an overall transport act, which could unify the various legislation for different modes in terms of:

1) defining the overall basis of state management of transport, including general responsibilities for planning, policy-making, regulation, infrastructure provision, and the role of the MOT, subsector agencies and provinces,
2) defining the basis for divisions between modes, for example, between inland water and maritime transport, and the responsibility for aviation,
3) defining the principles for regulating transport, especially coordination and competition between modes,
4) defining terms which are to be used in other, subordinate transport legislation, such as "public" or "common-use" transport, "multimodal" transport,
5) defining regulatory principles involved in activities that cross modes, especially freight forwarding,
6) possibly defining bases for transport contracts and insurance, if these are not covered in other legislation.

Some of the particular advantages of this legislation are that the (1) role of the MOT in determining priorities in transport could be placed on a firmer footing (for example, to avoid the necessity for the Prime Minister to issue instructions confirming the role of the ministry in planning ports, as occurred in 1998), (2) the basis for incorporating aviation matters in transport policy-making and planning could be made clearer, and (3) the basis for regulating multimodal transport can be established.

However, it is possible that, from a legal point of view, the advantages to be gained from such an act can be achieved more conveniently by careful drafting of other existing and future legislation. Drafting such high-level enabling legislation would have to be done very carefully to avoid subsequent obstacles in drafting subsidiary legislation. There is a danger that other important legislation, such as the road act, would be delayed still further by the need to introduce the transport act.

Other important legislation defines the responsibilities and authority of the MOT and other major agencies in the transport sector. Here too there are major gaps in legislation; for example, the Vietnam Railway has not been put on a proper legal basis that would give it adequate freedom to pursue commercial activities.

2) Technical standards are not based on economic priorities and enforcement is weak

In the absence of primary legislation for roads and other modes, much of the transport sector is regulated by a wide range of decisions and rules, some of which are unsatisfactory and even contradictory. Specific deficiencies are described under each subsector later in this report.

A common characteristic of the existing regulations is that technical standards are set unrealistically high, they miss out important safety aspects and have not been drafted taking account of their economic impact. Enforcement is very weak in the country and the standards are widely ignored. The situation is obviously not helped by ineffective legislation. Consequently, even with better enforcement, the legislation would not be so effective in practice at setting minimum standards, and there is a danger that stricter implementation would incur costs on transport users that outweigh their benefits in terms of improved safety and other aims of government policy.

3) Tariff controls remain

Various circulars issued by the Government Pricing Committee and the MOT indicate the principles of remaining tariff controls. Essentially the government decides transport tariffs for certain strategic commodities, especially (1) foods transported on the railway from the south to the north and fertilizer transported southwards in accordance with state plans (paid out of the state budget), and (2) road transport of commodities in the mountainous areas. Floor prices can be set by MOT when authorizing liner operations by foreign ship companies between Vietnamese ports in order to protect Vietnamese shipping from competition.

Passenger tariffs are controlled for railway and air transport, with different rates applying for Vietnamese and foreigners (with a ratio of about 1:2). Airfares on short domestic routes appear to be less than the costs (see Technical Report No. 9 on Transport Costs), which distorts competition between modes in Vietnam.

Port tariffs are set by government and differ between domestic cargo and imports/exports. In particular, the VINAMARINE charges used to fund infrastructure maintenance are much higher for foreign traffic than for coastal shipping (which may not even cover variable maintenance costs). In general it is doubtful if port charges are related to costs or market conditions. There are some differences in the way Vietnamese and foreign ship operators are treated.

Bus fares within and between provinces are set by provinces under the guidance of VRA. Some SOE bus operators are unviable at present fares and PTAs are seeking rates up to 20% higher. However competing private operators appear to be viable at the existing rates so the case for higher fares is far from clear (fares may unjustifiably exceed costs of efficient operation). The legal basis for fares controls is not clear and, in practice, operators can adjust their fares somewhat in line with market circumstances.

4) Entry controls and quantity licensing continue

Discretionary conditions continue to exist over issuing transport licenses, which make licensing procedures far too complicated and involve the transport industry in unnecessary costs. There are minimum legal financial requirements applying in

most cases, which increase the costs of entry.

The provinces continue to control the number of buses operating on bus routes in an attempt to balance supply and demand on different routes. The legal basis for these anti-market rules is not clear, but they are a serious impediment to entry of new operators into the business, to development of competition and new services. In practice they are protecting existing state-owned operators from new, more efficient operators.

The government has recently scrapped all current transport licenses and required all future business licenses to be issued under the new Law on Enterprises (passed by the National Assembly on 12 June 1999). This creates a good opportunity to simplify the transport licensing system.

5) Economic regulation

The current framework of economic regulation of transport suffers from several types of problems:

- A wide variety of charges and taxes are levied on transport users but these are not closely related to costs of infrastructure provision or externalities such as safety and environmental costs.
- As described above, there are cross subsidies and other distortions caused by pricing controls.
- In addition there are general distortions arising from the continued operation of SOEs (such as preferential access to credit and preferential allocation of traffic).

Consequently, the competition among modes is not yet on a level playing field, wherein users of each mode pay for costs that they impose on society.

The extent to which competition is distorted due to subsidies, insufficient cost coverage and other factors associated with particular modes is indicated in the tables in Appendix D (which includes a list of distortions which can be quantified using available information) of Technical Report No.4.

In the case of roads, major distortions, which can be approximately valued at over US$ 10 million per year, arise from

- road accident costs imposed on society,
- medium and heavy trucks not paying their share of road maintenance costs, and
- insufficient cost coverage of many SOE bus operators.

Revenue from railway tariffs fail to cover current costs by about US$ 15 million and is exempt from capital charges, although this is offset to some extent by payment of fuel taxes intended to pay for road maintenance.

Relatively little quantifiable distortion can be identified for inland water transport although lack of information about cost-recovery of ports and water transport companies prevents a full analysis.

In maritime transport the main quantifiable distortion arises from the poor cost recovery of the VINALINES shipping fleet (both ocean shipping and coastal shipping) which is supported by preferential credits from government, policies designed to allocate government traffic to VINALINES enterprises, and direct intervention by VINALINES to save weak enterprises from bankruptcy (by cross-subsidizing them with profits from ports and other stronger enterprises).

In aviation, the main distortion is the excess profits earned by Vietnamese airlines in carrying foreigners on domestic routes at double the fare rate for Vietnamese. If used to cross-subsidize domestic services for Vietnamese, these profits distort competition between aviation and other modes.

5.3 State-owned Enterprise Reform

1) Background

Reform of SOEs is an important issue in the transport sector because

- transport service SOE contribute to many of the competitive distortions identified above,
- construction, maintenance and other types of SOEs play a dominant role in the construction and maintenance of transport infrastructure.

The government has set out a policy to equities, in the long term, most of the transport SOEs. Important exceptions include public service SOEs (that is SOEs carrying out infrastructure maintenance and other functions related to infrastructure) and SOEs in strategic areas in ocean shipping, the railway and aviation. In this context, strategic areas refer to the following:

- the main ocean shipping enterprises of VINALINES, but excluding ports and coastal shipping services,
- the core railway operations and infrastructure activities, but excluding peripheral functions such as construction and supply services,
- the airlines, airports and air traffic control functions, but excluding support services such as aircraft maintenance, ground and supply services.

Therefore while equitization is an important means of reforming SOEs, other reforms such as commercialization and corporatization have to be considered for the strategic SOEs, together with the public service SOEs and those SOEs which cannot be expected to be equitized for many years due to financial and other constraints. This section outlines the present situation regarding the government's equitization program in the transport sector, to provide a background for setting out a long-term overall strategy for SOE reform.

There are about 350 SOEs in the transport sector under central government (formerly under MOT), most of which are classified as business enterprises suitable for equitization. A further 300 or so are thought to be under the provinces, but this could not be confirmed. See Table 5.3.1 below for a summary of MOT enterprises, including those in the aviation sector. The legal basis for the SOEs is Government Decision No 90-TTg/1994 dated 7 March 1994, Government Decision No 91-TTg/1994, also dated 7 March 1994 and Prime Minister Directive No 500-TTg/1995 dated 25 August 1995. Each of these three legal measures established groups of transport enterprises subject to the law of state enterprises (as indicated in the table). Their implementation has, to a large degree, enabled separation of commercial state interests from regulatory ones.

Table 5.3.1
Number of SOEs in the Transport Sector

Type of Enterprise and Responsibility	Number of SOEs		
	Business	Public Service	Total
1. Corporations established under Decision No 91/TTg			
- VINALINES	27	0	27
- VINASHIN	24	0	24
- VAC	0	18	18
2. Corporations established under Decision No 90/TTg			
- Thang Long, CIENCOs, Inland waterway transport corporations, other construction, consultancy and industrial corporations	140	0	140
3. Enterprises established under Decision No 500-TTg/1995			
- Transport material and equipment, import/export and mechanical companies with boards of management	5	0	5
- Other enterprises with no board (services etc.)	11	0	11
4. Other enterprises under MOT line departments			
- VRA (road transport, construction, road maintenance)	13	48	61
- VR (engineering, service and maintenance)	28	20	48
- VIWA (ports, services)	4	1	5
- VINAMARINE (ports, safety, services)	5	5	10
TOTAL	257	92	349

NOTE: (1) Excluding 15 river maintenance units that have not yet been established as public service SOEs, four ferry groups and four material equipment supply enterprises under VRA, PMUs, port authorities, training schools, health units etc.

Under Government Decree No 56-CP/1996, dated 2 October 1996 each SOE is to be classified as either a business enterprise (able to be equitized) or a public interest enterprise (not to be equitized). Most transport enterprises have been categorized as business enterprises; it is mainly infrastructure maintenance units that have been classified as public interest enterprises.

Early attempts at equitization were made in the early 1990s but little progress was made. Consolidation of enterprises, including the combining of unprofitable units into profitable ones, has created enterprises that have a mix of activities (for example, passenger and freight transport) with differing business prospects. They are therefore not so easy to equitize.

The current equitization program is defined by Government Decree No. 28/CP/1996 dated 7 May 1996, Government Directive No 20/1998/CT/TTg dated 21 April 1998 and Government Decree No 44/ND-CP/1998 dated 29 June 1999. These provisions allow for the continued leading role of the state sector in key enterprises under the MOT with an accelerated equitization process through the following methods:

- selling new equities for expanding the enterprise,
- equitizing the entire enterprise,
- equitizing certain parts of an enterprise, and
- selling any state-owned shares in an equitized enterprise.

This allows for various methods of equitization, including complete transfer of assets to private owners. However, progress has been very slow. Equitization has come to be understood, to a large extent, as a means of transferring ownership from state to the workers and managers, encouraged by various incentives for share ownership for these groups. However, with a few exceptions, there has been little interest shown by the workers and management in the transport sector, who seem to fear the consequences of market competition and prefer to remain protected by government. Little interest has likewise been shown by outside investors, who do not seem to regard transport enterprises as attractive businesses. Only four MOT enterprises had been equitized by 1998.

2) Past achievements and future prospects

However, experience with the equitization process in general suggests that this can produce very good results, including more investment and business development. Government is apparently keen to accelerate the process. MOT Directive No 125/CT/1998 dated May 12, 1998 has requested subordinate organizations to prepare a list of 20% of their enterprises to be equitized in future. Nine MOT SOEs were planned for equitization in 1998, 10-15 were planned for 1999 and 30-40 planned for 2000. An equitization committee has been established in the ministry to coordinate activities and specific responsibilities for particular tasks have been assigned to implement the new plan.

However, MOT officials do not think that progress will be rapid in future due to several obstacles. No full-time team is being set up to handle equitization in the ministry, and this threatens to limit future progress. International assistance, through a World Bank assistance program, has been requested to help develop the program, but this would require a strong local team working full time. The main obstacles to the equitization process which have been identified so far include:

(1) there is no market-based mechanism to value assets - values are set by government officials and these are reported to be too high and there is often much argument about valuation which delays the equitization process (up to three years is common in the HCMC area, although delays are less in Hanoi),
(2) as described above, despite considerable incentives for workers and managers to buy shares, the disincentives are apparently higher (it is especially considered an advantage for transport enterprises to have close friendly links with government officials to protect them from market forces, so managers are reluctant to prepare business plans for equitization),
(3) the business prospects for many transport enterprises are low, suggesting that many are close to bankruptcy (certainly many are over-staffed, have poor equipment, continue to operate in traditional ways, are accumulating debt and do not invest, so their role is declining),
(4) equitization rules prevent individual investors from gaining controlling shares (there are percentage limits on individual shareholdings and a requirement to have several owners),
(5) authorities often do not know how to implement equitization (especially at local level),
(6) rules and procedures for equitization are unclear,
(7) there are fears among workers and managers about redundancies caused by equitization, and no suitable means for compensating them or providing retraining opportunities,
(8) there is even resistance to equitization of part of an enterprise because this is perceived by workers in other parts of the enterprise to be giving preferential benefits to certain workers,
(9) the issue of preferential shares to certain key officials in the SOE is possible and this makes the SOE very unattractive to outside investors,
(10) there is no financial support for equitization - like the private sector, in general, there is little credit available, so workers and managers find it difficult to buy the shares allocated to them (even when offered at huge discounts).

In response to these obstacles government is developing plans to give increased support to equitization, such as using proceeds from equitization to pay for compensation and training to redundant workers, and for the development of business plans. Pilot schemes are being considered to base the valuation of assets more realistically and to establish a credit agency to enable equitized enterprises to invest more easily. It is common for the MOT to allow the

equitization proceeds to be reinvested in the equitized enterprise (however, this merely dilutes state ownership and leaves it at a significant level rather than transferring it into private hands).

5.4 Other Institutional Issues

1) Lack of involvement of stakeholders

With the continuing high degree of centralization of policy-making and decision-making, the main way in which the MOT can seek the views of transport users is through normal political channels. There is scope for greater participation by transport users, both customers of transport services and providers of transport services in policy-making, planning and implementation.

This is clearly not a problem confined to the transport sector: The Deputy Prime Minister, Ngo Xuan Loc, at a meeting of senior state managers in Hanoi in August 1999, complained that SOEs do not advise government on ways to promote production, unlike joint ventures with foreign partners.

Several important policy initiatives proposed in the VITRANSS study raise difficult implementation problems - for example, how to improve enforcement of traffic safety programs and how to raise more finance from transport users for maintenance of infrastructure. It is therefore vital for the MOT to gain broader support from transport users to enable difficult decisions to be taken more easily.

2) Effectiveness of technical assistance in institutional strengthening

The large scale of change in transport policies since reforms began in the 1980s has required a considerable institutional strengthening program to enable organizations and individuals to accept radically new responsibilities and working methods. In administration of the transport sector this has been a particularly challenging experience and numerous foreign-financed projects have either aimed at institutional strengthening goals within the sector, or have included institutional strengthening as part of other activities.

The range of institutional strengthening projects in the transport sector is summarized in Table 2.2 of the Inception Report, covering 18 main projects [1]. The scope of each main project is indicated in Table 5.4.1.

[1] The table was updated and included in Appendix 5-A

Table 5.4.1
Summary of Main Areas of Technical Assistance in Institutional Strengthening

Aspect of Institutional Development	Main Technical Assistance Project	Scope of Assistance
Sector Management	No specific project. There have been many projects aimed at general administrative or specific policy matters (including CIDA Vietnam-Canada Policy Implementation Assistance Project aimed at environmental aspects). Some projects aimed at particular subsectors (e.g., roads) have also tried to cover the ministry.	Developing policy, legal framework and management information system
Roads Administration	ADB Institutional Strengthening of the Vietnam Ministry of Transport	Organizing and improving administration Assisting implementation of reforms Drafting legal documents Establishing a computer database
Railway Management	None	No specific project has yet focused on detailed institutional strengthening needs of railway.
Inland water administration	CIDA Vietnam-Canada Rural Infrastructure Inland Waterways Project	Commercializing VIWA operations Improving management systems and tools Providing operations support and equipment Implementing pilot projects of new market concepts Developing strategy for nationwide application of pilot results Community level infrastructure fund development
Maritime administration	CIDA Vietnam-Canada Maritime Project	Drafting legal documents Formulating maritime processes Providing training in law Assisting in the interpretation of international conventions and developing legal framework
Aviation administration	UNDP Civil Aviation Master Plan and French ODA project on legal development	Recommending institutional and legal changes
Provincial Transport Administrations	No significant projects apparently	Out of 14 provinces returning the VITRANSS provincial questionnaire, only one reported receiving any assistance from institutional development projects in transport (that one considered the project very helpful). However, most PTAs considered that inadequate local procedures and training were not major issues.

It is clear that the support for institutional strengthening has not been even throughout the sector: There has been no specific institutional strengthening projects within the railway, the aviation subsector or even in the ministry itself. Perhaps most seriously there appears to have been little assistance at provincial level.

The main areas of assistance have been legal reform, management systems, databases, and training. The pioneering study funded by the ADB encountered

many institutional problems that apparently beset the entire transport sector. However, many present projects are still at an early stage and the nature of the problems can be expected to change as circumstances in Vietnam change. This ADB project found that despite the existence of serious obstacles to institutional reform, significant changes could be introduced.

From discussions with a range of organizations in the transport sector, including recipient agencies, the following problems have occurred in trying to develop and implement institutional strengthening projects:

(1) constraints on human capacity to absorb recommendations, not surprisingly caused by lack of staff trained in modern management methods, with reasonable English ability,
(2) financial constraints, which frequently prevent much progress being achieved (especially after foreign consultants have left the country),
(3) resistance to accept recommendations (some Vietnamese staff attribute this to differences in cultural traditions between them and the foreign advisors),
(4) recommendations are presented badly, including voluminous manuals and reports which are hard to understand (not simplified to serve the needs of Vietnamese officials),
(5) recommendations ignore practical constraints in Vietnam (especially the need for other government agencies to accept the proposed changes)
(6) recommendations assume that implementation can take place far quicker than is possible,
(7) recommendations give far too optimistic implementation schedules (training programs to be completed in weeks when they may take months or more to establish),
(8) lack of appropriate recommendations - in some cases recommendations are too theoretical and read like a description written outside Vietnam of standard practice in foreign countries rather than written in the country taking account of local needs,
(9) unrealistic expectations of institutional strengthening projects related to the previous point - good advice can only be given by spending a long time working in the country with good local counterparts,
(10) lack of a strong feeling of ownership by the local organization, perhaps because they have been insufficiently involved in defining the terms of reference and the work itself (to relate it sufficiently to local traditions), or because implementing authority lies elsewhere,
(11) lack of involvement of local consultants (to make best use of existing human resources, one important element of an institutional strengthening project is to build on the knowledge already existing in local centers of expertise, rather than build up expertise from scratch in new organizations),
(12) poor donor coordination, such as making exchange of reports, ideas and information easy for other projects working in a similar area (for example, the original English copies of reports are hard to find and it makes no sense to work back from the Vietnamese in view of the translation difficulties).

5.5 Subsector Issues

Roads

1) Poor quality services

Government reforms have had major achievements in road transport because efficiency is quite high and costs are often very low. In particular, the cost of freight transport (at about US Cents 3 per ton km) is as low as found in any country in the world. This is achieved despite modest utilization rates, such as about 40,000 km operated per vehicle per year and average load factors of about 60%. Such tariff rates have been sustained for several years even though substantial new investment has taken place in trucks. This investment has been almost entirely within the private sector, which now dominates the business, although the state sector still has a significant proportion of large trucks and most private operators have only one or two trucks. Only 15 road transport service SOEs have been equitized so far (including some bus operators), although there are plans for many more in 1999. It is widely considered that many of the SOEs are difficult to equitize because they are not profitable enough and assets are overvalued. Many enterprises are burdened with unprofitable units that have been absorbed as part of past consolidations of the SOEs to avoid bankruptcies. Others have tried to diversify into activities such as vehicle maintenance services, catering and trading activities but these do not seem to be particularly profitable. It is clear that some road transport SOEs are close to bankruptcy.

The cost of bus transport varies considerably, apparently due to variations in competition, quality of service and local conditions (the officially approved fares for ordinary services vary between US Cents 0.8 and 1.2 per passenger km which are quite high compared to similar quality services provided in other countries. However in practice, under competitive condition, they can be as low as US Cents 0.5 per passenger km) which is low by international standards. The private sector is increasing its role in bus transport although, on scheduled services, the state sector appears to continue to dominate in many places, especially in the north, because of restrictions on the number of buses able to operate on the routes and the slow rate of equitization.

Despite the low costs the quality of services are rather poor. Although there are notable exemptions (such as the growing number of private operators with fleets of about 20 vehicles who can offer total transport services for customers, including special requirements such as container handling), few truck operators seem to be able to offer reliable services. There is an adequate level of supply, with plenty of trucks (including heavy trucks used for long distance and for specialized purposes such as container haulage). However, management is generally weak because many truck owners – within the dwindling state sector companies, in the cooperative sector and in most of the small-scale private sector – subcontract marketing to drivers who usually collect all revenues, pay owners

for monthly use of the vehicle, pay for running expenses, and keep the balance.

Almost all truck drivers interviewed in the terminal surveys complained about the roads (including the limited width and layout of roads at ports). Other complaints were made about road tolls, competition from other transporters, traffic conditions, and loading/unloading facilities (especially at ports).

Bus services are often unpredictable. Some services operate from designated bus stations at advertised times or at regular intervals, under the control of local cooperatives. However, once on the road the buses make frequent stops, often for lengthy periods, or even make diversions to find additional passengers. It is reported that on some long routes, passengers may be transferred from one bus to another if there are insufficient passengers on board. There is limited protection available to passengers from such maltreatment such as clear rules advertised in the buses and name/address of licensing authority to make reports of infringements. There is generally an adequate supply of buses, with little overloading on main routes according to the VITRANSS surveys (although overloading appears to be common on many minor routes). However, frequencies are often low because of low demand and there may be difficulties for passengers traveling to or from destinations in remote areas. An increasing number of high-quality buses are being introduced into the fleet for operation between major urban centers, charging higher fares. Nevertheless in general passengers appear to prefer the minimum cost option and the opportunity to carry luggage (many passengers carry large bags of rice, bicycles and even motorbikes carried on the roof, reflecting the fact that most passengers reach terminals by bicycle or motorbike).

Results from passenger interviews in bus stations (described in the Transport Survey Technical Report) suggest that passengers are far from happy about the state of bus stations, with many complaints about the overcrowded and dirty conditions for walking and waiting. However, almost all passengers rate most service aspects, such as availability, frequency, comfort, safety, and punctuality, quite favorably, with over 90% of people rating these aspects as good or fair.

2) Lack of stable funds for road construction and maintenance

The poor state of roads is widely blamed on insufficient finance. However, equally important are other factors such as the lack of a competitive road construction industry and maintenance organizations using modern maintenance systems with effective maintenance strategies and working methods, adequate management information and planning systems based on comprehensive road inventories and adequate financial and management accounting methods to control costs and performance.

Substantial road improvement programs that have been implemented with marked success in recent years have encouraged the development of

competition in the Vietnamese construction industry, although the extent of real competition appears to be limited. The international assistance involved has also resulted in training Vietnamese engineers and administrators in implementing agencies but, although this has helped staff to acquire skills, cumbersome procedures continue to slow down project implementation. However, none of the Vietnamese construction agencies has yet been equitized so the move toward consolidating a strong, competitive construction sector is far from complete. There are no plans at all for equitizing maintenance enterprises, which have been classified as State Public Benefit Enterprises, not for equitizing.

Efforts have been made to improve the management system, and a maintenance manual, based on modern practice, has been developed for application in Vietnam. However, this manual has yet to be applied in practice, partly because it involves major changes in work practices, many of which require additional finance and substantial training efforts at all levels to enable the staff to use the manual.

Although the VRA is responsible for managing the national road network through the RRMUs, it relies on provincial road management units for much of the network. However, the VRA has limited control over these provincial units and can do little to ensure that funds allocated for national road maintenance are actually spent on the roads as planned (even though the purposes of funds are specified in detail and distinguish between different kinds of maintenance), because the funds are transferred via provincial finance departments, which can delay disbursement, and the VRA has no effective way of monitoring the work carried out.

The situation is even more serious in the case of provincial roads, over which the PTAs, rather than the VRA, have direct management responsibility. For these roads, funds are allocated direct to the provinces without any direct involvement of the VRA (for example, to inspect and approve the plans). It is also not clear to what extent allocated funds are actually used for road maintenance or construction. There is no adequate road inventory and maintenance systems used on provincial roads are in an even more parlous state than those on national roads. Despite being responsible for planning and setting technical standards for all roads, the VRA is left with very limited oversight on provincial and other local government roads, other than advising on technical standards and other administrative matters, as and when required.

3) Lack of planning capacity

The capability of the VRA to propose and implement road plans is very limited because it lacks the management systems to plan and control implementation. Furthermore, it has not yet started to develop its important function of road network planning. The institutional weakness is because of lack of both management/planning systems and trained staff. It needs institutional

strengthening to develop the capacity to develop road network plans to present to the MOT.

In practice road construction projects are implemented through PMUs which are responsible to the MOT rather than the VRA. This deprives the latter of the chance to acquire and consolidate this expertise, which could mean that in the long term, after the PMUs have performed their function and are disbanded, there will be no residual project management expertise left in the road transport subsector.

In terms of road transport, VRA's ability to assess (mechanized) road-user needs is very weak because it lacks even rudimentary information, such as the characteristics of the vehicle fleet, due to a lack of effective cooperation between the VRA and the police and the lack of an effective computer database. VRA staff also lack expertise in monitoring road transport under market conditions, continuing to pursue conventional approaches. In particular, a completely new approach is required to monitor and collect statistics about the road transport industry. The present approach relies on detailed information being collected from all operators but is no longer feasible. Implementation would be complicated, apparently, by a lack of agreed division of responsibilities between MOT's Legal and Transport Department and the VRA.

A new approach is also required in planning and regulating bus services which continue to be based on a quantity licensing approach more reminiscent of the largely discredited approach to regulating international airline services by mutually agreed quotas rather than on a more effective approach that allows bus operators to plan and develop their own services in competition with other operators, provided they can fulfill minimum safety requirements. The perpetuation of this approach in Vietnam may reflect the understandable concern of ensuring that bus services in remote areas are available. The VRA tries to achieve this by restricting entry into profitable routes in the hope that operators will transfer operations into less profitable ones. This further ensures that profits earned on profitable routes can be used to cross-subsidize unprofitable ones. However, enforcement is so ineffective that such an approach seems impracticable. Illegal competition will inevitably deprive licensed operators from achieving the desired excess profits and they will be unable to cross-subsidize other services. Even if it were practical, this would not provide subsidy efficiently. Rather, it would (a) reduce competition and increase transport costs generally, and (b) protect existing, inefficient state operators from much needed commercial pressure to reform.

The problems with the current approach are illustrated by the conclusion of a recent conference by the VRA and PTAs in northern Vietnam (VRA Document No 1043/DBVN-VT dated 21 June 1999) which recommended that normal bus fares be raised to VND 145 per passenger km (about VND 20 higher than the average of about VND 125 found in the 1999 VITRANSS survey) and that VAT be charged

assuming this level of revenue even for efficient operators which can operate with lower costs. If such fare increases were to be implemented throughout the country on all interprovincial bus routes, the overall annual increase in interprovincial bus transport costs in Vietnam would be about VND 900 billion, based on the VITRANSS estimate of 120 million passenger km/day of bus transport (which is as much as 0.3% of GDP).

Until recently it was far from clear what the future role of the VRA would be. However, some of the doubt has been removed by the introduction of provisional Government Decision No 3525/QD-BGTVT/1998 dated December 23, 1998 which defined VRA's responsibilities and powers in more detail than in the past. This decision makes it clear that VRA's future role will include management of road construction projects and giving assistance to the MOT in developing road network plans, investment plans, policies, laws, and regulations. VRA also has the role of guiding and providing technical and professional assistance to the localities in planning and making plans for development of communications and transport in the localities. It also has the responsibility to organize and direct the management, maintenance and exploitation of the infrastructure of road communications, to observe the regimes, processes and rules on the management and exploitation of the system of local roads. However in practice there are no guidance documents or procedures to implement these powers at provincial and district levels.

4) Inadequate road safety programs

As motorization has increased in Vietnam during the last 10 years, the number of road accidents has increased three-fold (and deaths have more than doubled). The national fatality rate is about 11 deaths per 10,000 motor vehicles, which is similar to other southeastern Asian countries, but 10 times the rate found in many developed countries. It is estimated in "Vietnam Road Safety Improvement Study - Strategy and Priority Action Plan", Ross Silcock/TRL, May 1998, that the cost of road accidents in Vietnam is likely to be at least 1% of GDP (possibly 2% or more).

The ability of government to develop effective road safety programs is limited by the poor accident data available. Existing data are considered to be unreliable and incomplete, so the causes of accidents and the best methods to reduce them are difficult to define. Enforcement is also very weak, so many regulations do not achieve their intended effect. Vehicle inspection stations have inadequate equipment to test vehicles properly and driver testing is too theoretical in nature.

In the absence of a proper scientifically based approach to road safety, government has adopted a variety of measures that might have little justification on safety grounds. For example, a ban is proposed on old buses operating on provincial bus routes (no older than 12 years for buses which have imported truck chassis and local bus bodies) to reduce accidents. New technical standards have

likewise been introduced that would increase the cost of operating buses (MOT Decision No 890/1999/QD-BGTVT dated 4 April 1999). Transport operators are concerned that if the new standards are enforced strictly then most vehicles would have to be scrapped. Many of the technical requirements have little bearing on safety (being concerned with the temperature of the air-conditioning, the intensity of lighting inside the vehicle and visibility of the passenger entertainment video screen). Others have important safety implications (use of safety glass and provision of emergency exits and fire extinguishers), but sometimes fail to specify important conditions (such as the requirement that the fire extinguisher should actually work and that inflammable substances, such as petrol, should not be carried on the buses).

It seems that these regulations have been drafted without taking account of important technical considerations, costs of operation and their enforceability. The possible total cost of provincial bus route accidents can be roughly estimated as about 0.3% of GDP (assuming that total accident costs are 2% of GDP, that half of all accidents occur in rural areas and that buses are responsible for 30% of all accidents, in proportion to the number of motor vehicles recorded by VITRANSS traffic surveys). If higher technical standards and newer buses can reduce the accident rate by as much as, say 20%, then the total benefit would be 0.06% of GDP. However, this benefit would be outweighed by the increased costs of operation if the bus fare were to rise by as little as VND 4 per passenger km (based on the example described above for the effect of a VND 20 increase in bus fare causing a 0.3% increase in GDP). In fact, a much greater increase is possible if technical standards are raised too high.

Government recognizes the difficulty of implementing such higher standards and is believed to be proposing higher standards in a step-by-step manner. It is important that the transport industry is given a clear idea of how this will be done so that it has time to make adjustments at least cost (for example, avoiding making alterations to vehicles that will be scrapped soon after). This simple example demonstrates that there is a need to strengthen the capacity of both the VRA and MOT to develop cost-effective road safety programs, not just in terms of technical requirements but also in terms of capacity for economic evaluation of alternative road safety measures. As Vietnam enters into international transport agreements there will be increasing pressure to raise standards to those achieved in neighboring countries, and a careful balance will be required to ensure that those international obligations are met without prejudice to the domestic transport sector.

5) Inadequate legal framework

The legal framework for the road subsector is not yet established. There is a proposed road act that is now in its seventh draft but it is understood that further work is required to complete it. The final draft would have to take into account various other regulations introduced in recent years, requiring either replacement

within the framework of the act and/or amendment of the act itself.

However, even with the completion of the road act, much would need to be done to improve the implementing regulations. Road transport business licensing regulations involve time-consuming application procedures which impose high costs on the transport sector. For example, until recently, to operate a bus or truck required, in addition to the basic business license, a road transport license for each vehicle operated for business purposes (under MOT Decision No 2076/QD-BGTVT/1998 dated 18 July 1998). There are separate categories for vehicles used for public freight or passenger transport and for vehicles used for own-account purposes (for any vehicle with over nine seats), and there is a third category for vehicles used partly for own-account purposes and partly for public transport. Applications for these licenses require a completed application form, a valid business certificate and a vehicle registration certificate. Buses used on scheduled bus routes require permission to operate on particular routes from the responsible agency – the respective PTA for intraprovincial bus routes and some short interprovincial routes, and the VRA for longer interprovincial routes. They also require evidence of an agreement to operate from a bus station. Separate provisions apply for contract and tourist buses.

The licenses may be issued for one year for state-owned operators, transport cooperatives, joint ventures, limited companies, and private companies, whereas the maximum period for private individual operators is only six months. The licensing authority may issue licenses for shorter periods if they want and they may also specify the area of operation. In practice licenses are issued for shorter periods, especially for private operators, and restrictions on area of operation are often imposed. The restriction of scheduled buses to particular routes limits utilization of buses that could be efficiently scheduled to operate on more than one route. Operators report that it takes up to two days to renew their licenses because of complicated bureaucratic procedures and incurs additional administrative charges (about VND 30,000 per bus or truck plus unofficial payments if they want quicker processing).

If all licenses were to be issued for one year, total cost savings could amount to VND 30 billion, assuming that the number of licenses issued could be reduced by 50% from about 600,000 to 300,000 (from about two per vehicle to one per vehicle) and the cost of license issue is VND 30,000 (license charge) plus VND 70,000 (cost of management time, overheads and expenses). Even greater savings could be achieved if just one license were issued for each particular service, rather than for each bus. Further substantial benefits could be achieved from increased vehicle utilization if the area and route restrictions were removed, including greater incentives for operators to take commercial risks by opening up new services.

Under Prime Minister Decree No. 03/2000/ND-CP dated February 2000, all these

transport licenses have been scrapped, together with about 80 licenses in other sectors. If MOT/VRA wishes to reintroduce this kind of license it must reapply under the terms of the new Enterprise Law. This offers a good opportunity to simply the licensing system.

The VRA recognizes that there is a need for simplification of the licensing system not only in bus and truck licensing, but also in areas such as vehicle importation, vehicle registration and driver licensing where clarification is needed between the tasks of different agencies.

There are still tariff controls for movement of trucks in remote areas. For buses, the VRA has the power in principle to set fares for interprovincial services but detailed regulations have never been set. This gives some flexibility for operators to adjust their fares. Fares for services within provinces are set by provincial government although they cannot enforce these effectively.

In road safety there is a need to replace certain road engineering technical regulations to strengthen traffic safety aspects. Also cooperation between the VRA and the police must be placed on a firmer legal basis.

Railway

The railway subsector faces a number of serious organizational problems which hamper its efficient development. These can be summarized as follows:

1) Lack of clear legal status giving railway commercial remit

Under initial government reforms railway was established as a union of SOEs – separate enterprises being established for the many operating units such as the various workshops, depots and construction or maintenance units. It was subsequently intended to convert the railway into a commercial corporation, similar to those created in shipping (VINALINES and VINASHIN), but this was never done. Although the name of the railway was changed under MOT Decision No 575/QD-TCCB/LD dated 16 April 1990 to VR, it operates as a state-owned enterprise financed from government budget and responsible for managing the separate enterprises that make up the railway. There are 48 SOEs plus a number of other operating units, such as training schools and clinics. These SOEs are organized into:

- three blocks having 28 business SOEs (for construction, industry, and materials/tourism/hotels),
- one block having 20 public service SOEs (for track, signals and communications equipment maintenance),
- train service and operations section having four public service SOEs (consisting of three regionally based unions (I, II and III) and the ticket

printing enterprise),
- training schools, health care and newspaper organisations, and
- five PMUs.

The four SOEs in the operations section are directly controlled by headquarters (having dependent accounting), whereas the other SOEs have independent accounting. The infrastructure block (responsible for track, signal and communications equipment maintenance) is financed directly by government. The rest of the railway is required to be self-financing and pay 10% of revenue to the government for infrastructure maintenance.

The headquarters is managed by the general director plus five vice directors (see Figure 3.2 of Technical Report No. 13). Although some vice directors have line responsibilities (for locomotives, engineering, transport, business and administration), there are seven units reporting directly to the general director (including the Planning and Investment Department and the Railway Transport Inspection Board).

Under this organizational setup, the railway has limited autonomy and a lack of incentive to operate commercially. Rather its remit is to act as directly instructed by the MOT. The three regional unions have extremely limited autonomy and, although they can make suggestions to headquarters, they must act in practice in accordance with the plans of headquarters.

2) Lack of clear long-term objectives

For day-to-day matter the railway is guided by the requirement to cover operating costs by revenues (after deduction of the 10% infrastructure charge). However, the long-term financing basis for it is not clear. Even if the railway were to be given more financial autonomy it would still need a clearer statement of investment policy by government.

3) Deficient regulatory framework

There is no railway act which would provide a basic legal framework for regulating railway transport activities, although safety responsibilities are set out in Government Decree No 39-CP/1996 dated 5 July 1996 (supplemented by Government Decision No 76/ND-CP/1998 dated 26 September 1998).

Although railway freight tariffs may be negotiated between the railway and customers, some railway tariffs are still regulated by the Government Price Committee. In particular, movements of rice from the south to the north and fertilizer in the reverse direction are subject to maximum prices. Passenger fares are all subject to government approval, with fares for foreigners set at a higher level than for Vietnamese. If fares do not cover the costs incurred there is no mechanism for subsidizing the railway.

4) Lack of management information systems

As described in "Unterstutung bei der Restrukturierung von Vietnam Railways", GTZ, January 1996, there is a general lack of capacity in the VR to make timely and meaningful management decisions based on financial and service criteria. Information is woefully inadequate, with managers having to rely on handwritten notes, often transmitted orally over the telephone and mainly handled manually. Data are often incomplete and are unlikely to be particularly accurate. One principal source of difficulties is the tickets, which are usually hand-written. Computers are only used for summarizing and presenting information rather than for data handling.

5) Lack of transparency in accounts

The accounting system is not completely transparent and difficult to interpret. The present system was introduced on 1 January 1996, based on the International Accounting Standard introduced into Vietnamese law by the Ministry of Finance for all enterprises (see "Special Assistance for Project Implementation (SAPI) for Hanoi-HCMC Railway Bridges", OECF, March 1998). The operations section accounts (for the three regional unions, the ticketing unit and the headquarters) do not include the costs of infrastructure activities, which since 1995 have remained under government control. However, they do include the charge levied by government for use of the infrastructure (equal to 10% of revenue). The revenue from this charge is less than the costs of infrastructure provision and government makes up the balance in subsidy. Indeed part of the revenue from the infrastructure charge may be returned to the transport sector to cover the capital cost of transport equipment acquisition, maintenance and repair (if approved by the MOT). Separate accounts are produced for each of the main blocks (for construction, industry and services), and since the enterprises in these blocks have freedom to engage in nonrailway commercial activities, the accounts cover some nonrailway activities.

6) Poor management tools

Despite improvement in the accounting and budgeting systems since 1995, the railway still lacks an adequate management costing system that would give management even rudimentary information about costs of providing various types of services. Allocation of traffic and costs to particular line sections is not easy, so that it is not possible to assess the viability of different lines. Daily information on equipment utilization, short-term demand projections in relation to available capacity are also lacking.

7) Lack of marketing orientation

The marketing function is still poorly developed. Activities are located in the headquarters and in the three unions but the market strategy appears to be oriented more toward production aspects rather than customer requirements. The

railway's main freight customers remain much the same as in the past (large SOEs dealing in bulk commodities such as Apatite ore, coal, cement, other building materials, and fertilizer). Freight forwarders complain that there are no freight trains with guaranteed schedules. Delivery of empty wagons and final delivery of consignments are unpredictable and there is no information about the location of wagons with consignments. Basic improvements in passenger service, such as supplying through ticketing between trains and even selling return tickets, have still not been implemented. Tariff tables reflect the requirements of the centrally planned economy rather than the market economy and are very complicated for junior staff to understand.

8) Overstaffing

VR employs an excessive number of staff and it appears that many are employed more for social welfare reasons than for railway business interests. Experience with other SOEs in Vietnam suggests that if VR is reformed as a corporation, commercial pressures will reduce the workforce substantially. This could raise social concerns.

Inland Waterway

1) Lack of clear policy toward inland waterway transport

There is a particular lack of clarity in transport policy toward the inland waterway sector. Relatively little investment has been allocated to the subsector, especially in the Red River Delta where navigation is constrained by seasonal factors. A clear definition of the expected role of inland water transport based on the recommendations of this study would help to plan and develop the subsector.

2) Inadequate legal framework for the subsector

There is no inland waterway law or act and transport activities are governed by a variety of rules and regulations. Some of these regulations are obstacles to efficient operation – for example, transport licenses can specify particular routes that vessels can operate on to avoid them using unsuitable channels. These restrictions limit use on other suitable routes, reduce utilization and increase costs.

There is concern about the many unregistered small vessels, including many homemade, which are involved in river accidents. Operators complain that unregistered boat operators undermine competition in the transport business by not paying proper taxes and waterway fees.

Other licensing problems are the short validity of transport licenses and the minimum financial requirements which increase entry costs into the business.
There is no clear legal definition of the extent of responsibility and authority of

VIWA because of overlap with the maritime responsibilities of VINAMARINE. The MOT is fully aware of this difficulty and is drafting a decree to clarify the division of responsibilities.

3) Weak market mechanisms

There are still many state-owned transport operators, especially in the supply of services using large vessels, over 100 DWT. Traditional customer/transporter relations continue and so competition is not fully developed. The private sector is mainly small scale, operating vessels below 100 DWT in most cases. According to the VITRANSS survey, it carries large proportions of traffic, not only in the Mekong Delta but also in the Red River Delta (where it seems to be carrying the majority of traffic).

There are reported to be few if any large private ship repair or construction yards, at least in the north, and there is no significant private construction industry. More rapid development of the private sector is hampered by the slow rate of progress with equitizing transport operators and difficulties in obtaining credit.

4) Poor port management with weak incentives

Ports offer poor service and are considered by operators to be a major problem. The facilities are dirty and there are frequent service delays. Stevedoring and other services are not provided on a contractual basis, so there is little competition.

5) Inadequate mechanism for financing infrastructure and enforcement

VIWA has, in general, poorly developed management systems, including budgetary and financial planning systems. Waterway development and maintenance are financially constrained. There is no mechanism for improving efficiency of maintenance and construction, such as through contracting. Revenues from waterway users (mainly fuel tax receipts, but also waterway fees for vessels) are estimated to cover maintenance costs, but to develop the network would require increased user charges.

6) Weak PTAs

The provinces are responsible for providing the rural water network and play an important role in monitoring the sector and implementing plans. However they lack basic management tools and training.

7) Weak VIWA

The organization is still split into two parts for historic reasons, which leads to inefficient administration. VIWA lacks modern management systems of all kinds -

for example, for budgeting/financial planning, managing computer databases, maintenance of infrastructure, and business planning. Safety is considered an important issue; many accidents are caused at nighttime by the lack of navigation lights, by the operation of homemade boats that have not gone through the proper registration process, breaking of water rules, and excessive speed of small vessels using high-powered engines. However, safety programs are poorly developed.

Shipping

1) Weak competitiveness compared with foreign shipping companies

Large-scale shipping operators, all state-owned, find it very difficult to compete with foreign shipping operators because the latter are more efficient, use modern ships, have experienced management and established links with customers and marketing agents. They have tried to develop new services (using containers and other modern handling methods) and have invested in new (second-hand) ships but they are losing market share. Profit margins of VINALINES ship operators have decreased during the 1990s to 0-4% of turnover in 1997. Under ASEAN trade agreements to be implemented in future years, competition will intensify, placing strong pressure on Vietnamese operators to improve efficiency and creating opportunities for regional expansion of Vietnamese shipping companies that are able to capitalize on their comparative advantages such as low labor costs.

Faced with strong foreign competition, the business environment in maritime shipping is considered by Vietnamese operators to be uncertain and difficult, especially so for smaller operators outside VINALINES because they lack the influence and lobbying power of this dominant corporation. Their interests are represented through the Vietnam Ship Owners Association, but this organization is dominated by VINALINES members.

Four joint ventures with former Soviet Union partners were dissolved in recent years because they were not profitable enough. Current joint ventures of VINALINES are relatively profitable. These developments have tended to concentrate the shipping industry still further within VINALINES. Provincial government-owned operators are not developing and some are reported to be in serious financial difficulties. Many may be liquidated soon and their overall role could decrease. The cooperative sector also is not developing. However, the private sector is increasing dramatically in size, but from a very small base (3% of capacity in 1996 to 6% in 1998) and deploying almost entirely small vessels less than 500 DWT.

2) Lack of level playing field in coastal shipping

The lack of finance for purchasing new ships is a serious constraint and state

operators can receive assistance from VINALINES through credit guarantees. The state sector purchases second-hand foreign vessels (usually about 10,000 DWT) using bank loans, secured partly against their own asset base. The private sector purchases mainly new Vietnamese vessels with about 500 DWT and appears to fund investment from revenue and other sources outside the transport sector.

Members of VINALINES may benefit from additional support. For example, the Ocean-River-Going Corporation was saved from bankruptcy by transfers of ships from other VINALINES members (VINALINES has the power to transfer the amount invested with state capital, while the members must be compensated for the value of assets financed with reinvested profits). Each member contributes 0.3% of its revenues to VINALINES which provides a fund of about (VND 7 billion, or US$ 500,000) for supporting members. Since ports earn much more profit than shipping enterprises, there is a danger of cross-subsidizing shipping operations from profits earned in ports.

3) Strict regulations to entry into the industry

Following the recommendations of the Coastal Shipping Master Plan Study (1997), regulations have recently been liberalized to some extent - for example:

- sea vessel procurement procedures have been simplified (Government Decree No 99/1998/ND-CP dated 28 November 1998) to enable procurement permission to be given without the purchaser contacting several government agencies,
- specific regulations have been introduced defining more clearly the basis for allowing private operators to participate in the shipping industry (Government Decree No 40/ND-CP/1998 dated 10 June 1998), and
- procedures to issue passports to crews have been simplified and many unnecessary paper requirements have been removed (Government Decree No 91/CP dated 23 August 1997). The same decree removes previous restrictions on foreign-owned ships that are registered in Vietnam offering domestic coastal shipping services.

However, Government Decree No 40/ND-CP/1998 only applied to private operators, not to state operators, which remain outside the licensing regime. Minimum financial requirements are high - for example, VND 10 billion (US$ 700,000) of legal capital to receive a license for regional international shipping services - which increases entry costs into the business. (This license has now been scrapped under Decree No. 19/2000/ND-CP dated February 3, 2000).

4) Unfavorable environment for foreign investment in coastal shipping

Despite the removal of vessel registration restrictions, under existing foreign

investment law it is still very difficult in practice for Vietnamese shipping companies, with part foreign ownership, to be established. In particular, foreign investment laws make it difficult for Vietnamese-registered ships with minority foreign ownership to engage in coastal shipping. Under MOT Decision No 2054QD/PC dated 6 August 1996, on conditions for issuing permission to foreign shipping companies to operate liner services from Vietnamese ports (especially in the domestic market), VINAMARINE can set various conditions and, in practice, enforces minimum price floors to protect the Vietnamese shipping industry.

Even in the ship agency business, government policy is extremely restrictive toward foreign involvement. In contrast to other ASEAN countries, such as the Philippines and Thailand, Vietnam requires foreign shipping companies with a representative office in Vietnam to use a Vietnamese rather than a foreign shipping agency as its general agent to supply maritime agency services.

5) Constraints in freight forwarding business

On the other hand, the freight forwarding business in Vietnam is developing, is quite competitive, and there is an active Vietnam Freight Forwarders Association. However, the industry is still handicapped by various constraints such as:

- lack of a legal basis for freight forwarders to act as principals or multimodal transport operators (MTOs) who are responsible for cargo transported by more than one mode of transport. Rather, each carrier is separately responsible to the cargo owner under the general provisions of the Ordinance on Economic Contracts (1989),
- lack of other legal provisions in Vietnamese law in accordance with international practice (especially various ESCAP, ADB and UNCTAD proposals), lack of legal frameworks for road, inland waterway and railway transport, outdated maritime law provisions (the legal liability is defined in terms of an obsolete unit of currency used in colonial times rather than the conventional SDRs), and the lack of ratification of certain international conventions, such as the Hague Rules and Hague VISBY Rules, concerning bills of lading, provisions concerning certain maritime transport aspects about regulating ships and defining liabilities in case of ship collisions and oil spills,
- complicated licensing procedures which have required freight forwarders to have several licenses which have to be renewed frequently, potentially one for each ship agency agreement from VINAMARINE, one for freight forwarding from the Ministry of Trade, one for trading activities from the Ministry of Commerce, one for air cargo handling from the CAAV, one for express mail handling from the General Post and Communications Department, one from the VRA for road transport operations, and one for customs brokerage from the General Customs Department – however the situation has been considerably simplified following the scrapping of licenses under Decree No. 19/2000/ND-CP dated February 3, 2000.
- insufficient coordination among the MOT, Ministry of Trade, MOF, General Customs Department over policy matters to establish regulations and

procedures for handling trade and transport matters (the customs department does not appear to understand the role of freight forwarders in efficient transport),
- lack of insurance cover from Vietnamese insurance companies for goods handled by freight forwarders,
- restrictive policies on foreign freight forwarding firms in Vietnam.

6) Limited potential for equitization in the maritime sector

Current plans for equitizing members of VINALINE are limited to the service agencies. Although VINASHIP and other shipping companies are not excluded from the equitization process it is difficult see how they can be equitized because of the large amount of capital involved.

Nevertheless, some progress with equitization has been made. The GEMADEPT Container Transport and Forwarding Company was equitized back in 1993. Since the issue of Government Decree No 44/1998/ND-CP dated 26 July 1999, three small maritime enterprises under VINALINES have been equitized: the Safi Stock Company, which is part of VOSA, the INFACON forwarding company which was part of the Southern Container Company, and INLACO (International Labor Cooperation Company) in Hai Phong. According to VINAMARINE, the provincial government-owned Binh Dinh Ship and Boat Enterprise has also been equitized. A further 17 enterprises have been proposed for equitization in 1999 (eight under the MOT and the rest under other ministries and local governments). Included in this list are five VINALINES organizations (a) another part of the Southern Container Company, (b) Cargo and Passenger Transport Service Enterprise which is part of the Sea Transport Company III, (c) Hai Au Shipping Company which is a member of VOSCO, (d) Service Supply and Import/Export Enterprise which is member of VITRANSCHART, and (e) a branch of the Southern Container Company in Danang. As found elsewhere, there are financing difficulties which make progress difficult.

7) Strengthening regulatory capacity of VINAMARINE

Significant achievements have been made to strengthen VINAMARINE's regulatory capacity based on the Coastal Shipping Master Plan recommendations, including passing new regulations basing minimum technical standards of vessels on the MARPOL and SOLAS conventions, strengthening the vessel inspection system (to meet the conditions in the Tokyo Memorandum of Understanding (MOU) concerning Port State Control in Vietnamese ports) and implementing the STCW Convention on training standards and licensing of seafarers.

Under the institutional strengthening project financed by Canadian CIDA, important steps have been taken to identify needed changes to maritime law and regulations, define improved management procedures and propose mechanisms for deciding liability and compensation arising from oil spills. Specifically,

VINAMARINE is studying the implications of Vietnam's participation in the Convention on Civil Liability of Ship Owners for Oil Pollution (CLC92) and the Convention on the Establishment of an International Fund for Compensating Damage caused by Oil (FC2).

New regulations intended to strengthen enforcement of maritime safety have also been submitted by VINAMARINE to the MOT, and new procedures are being developed to tackle problems associated with environmental pollution from ships. However, there are important bottlenecks preventing implementation of policy, including the following:

- legal provisions for arresting/inspecting vessels in Vietnam have not yet been defined,
- financial constraints have limited implementation of several needed improvements (including drafting legal documents and translating important English documents into Vietnamese),
- lack of management information systems (for example, about characteristics of joint venture and other shipping operators)
- lack of human resources, especially among technical specialists (most of whom are still handicapped by an inadequate English ability). There is a particular need for training many more Port State Control inspectors because many Vietnamese vessels fail to meet minimum technical standards.

Ports

1) Weak policy-making and planning

Policy-making and national port planning is weak because there is a lack of coordination between various ministries involved, so the MOT does not have a comprehensive overview of the need for investment and the effectiveness of investment by other ministries and local government organizations. The apparent weakness of the MOT and its subsector agency, VINAMARINE, to carry out national port planning is a very serious problem because there is a danger that ports will be developed without proper consideration of overall costs and development implications (for other infrastructure, for regional development policies, etc.). This problem is recognized by government and resulted this year in the issuing of Gov. Decree No 588/VPCP-CN dated 8 February 1999 to support the authority of the MOT and VINAMARINE to plan ports in the HCMC area.

VINAMARINE's ability to develop plans for submission to the MOT is constrained by a lack of clear oversight authority (there is no clear demarcation of responsibilities between VINAMARINE and VIWA for infrastructure development and management). Because of its perceived weakness in planning ports, VINAMARINE finds it difficult to obtain information about port plans being developed by other organizations.

2) Unclear responsibilities and authority

Port investment management is not always delegated to VINAMARINE as allowed in law. In practice, investment is often managed by the MOT rather than VINAMARINE, contrary to the principle of decentralizing such activities.

The separation of regulatory and commercial functions has not yet been completed in the maritime sector, with VINAMARINE retaining management of three main ports, following the transfer of five others to VINALINES. The transfer of responsibility to VINALINES cannot be considered a satisfactory arrangement because it means that the main shipping operator is also the main operator of all the main public ports. Further reorganization is clearly necessary to separate the shipping and port interests of VINALINES.

A clear demarcation of responsibility and authority is required between the regulatory/planning concerns of VINAMARINE and the business concerns of public port enterprises – for infrastructure planning and development, for intra-port operations, such as port handling, and for external port operations such as pilotage.

Port management is too centralized with insufficient autonomy and delegation of authority at local level. There is little involvement of the private sector. Moreover, there is no national shippers council in Vietnam which can represent the views of users on port planning and other related issues.

Ports are not generally allowed to operate as commercial organizations with freedom to offer services and set prices in response to customer demand and the need to recover returns on investment. The low cargo handling efficiency of Vietnamese ports discourages deployment of efficient shipping services and development of containerization.

There is insufficient coordination between various government agencies in the ports to offer smooth flow of goods. Customs and other procedures are unduly complicated and time-consuming. Delays to cargo are excessive.

3) Inappropriate bases of port charges

Port charges set by government discriminate between international and domestic traffic and between foreign and Vietnamese operators. They do not encourage efficient use of port facilities. For example, waterway or tonnage charges are always levied on a per-trip basis instead of on an annual basis, which severely handicaps liner operations. This results in effective charges per ship call in Saigon port being about three times those in Bangkok and other Asian ports (partly due to higher navigation charges associated with the longer access channels in Vietnam - see Table 5.5.1). In practice, inefficient port service results in excessive times spent by ships in Vietnam ports (often twice as long as other ports in the region, although this is partly due to navigational constraints caused

by the limited draft of the channels). To expedite port processes, shipping companies often have to pay additional unofficial charges, which may be easier for foreign shipping companies than Vietnamese ones to pay.

Table 5.5.1
Comparative Charges paid by Foreign Ships at Saigon and Bangkok

	Amount Paid per Ship Call		
Charge	Saigon	Bangkok	
	US$	Baht	(US$)
Tonnage Dues	1,410	83,650	2,390
Channel Dues[1/]	3,970	1,600	46
Pilotage Dues	4,010	20,360	581
Towage	800	20,000	571
Dockage	1,110	7,310	209
Others	210	450	13
Total	11,510	133,370	3,810

Source: NYK Line
1/ Known as Maritime Safety Fee in Vietnam

4) Unrefined equitization procedures

Although government plans to equitize some maritime ports (initially Dong Nai and Ben Nghe in HCMC), raising finance is very difficult because of the huge investments involved. The equitization procedures have not yet been refined into workable rules for successful transfer of ownership of large entities such as ports.

5) Uncertain financial sources for improvement

There is uncertainty about the scope for raising finance for developing the ports, especially through involvement of the private sector. Although there have been plans for BOT type projects, no such projects have been implemented yet and the regional economic decline has reduced their attractiveness.

6) Unqualified staff

VINALINES consider that the ports have perhaps twice the number of staff that are really required. Many of these staff are unskilled. Adopting new cargo handling techniques will require training for some of these, but many of the older ones will probably not be suitable for training. How to deal with the surplus labor in these and other SOEs is a major social issue in Vietnam.

Despite the surplus of unskilled staff, ports have a shortage of qualified professional port managers, engineers and supervisors. The staff has insufficient knowledge of the latest cargo handling techniques.

There is a Vietnam Port Association but this does not seem to be as effective as

it could be in promoting professional standards in the industry. VICT, the new private container port in HCMC, applied to join earlier in the year but there has been absolutely no response from the association.

7) Unreliable industry data

Management information is unreliable, lacking in required scope, detail, consistency, and timeliness. Better, computer-based information is needed both for port managers to assess their operational and financial performance and for VINAMARINE to monitor safety/environmental standards, competition, fairness of treating users, and utilization of infrastructure. Basic information such as ship queuing and service times are routinely collected but are not presented to decision-makers in a useful way.

Air

1) Competitive environment for air services

Although there is more than one Vietnamese airline, all are members of Vietnam Airlines Corporation (VAC). Domestic scheduled services are almost entirely provided by Vietnam Airlines. Its main competitor, Pacific Airlines, is a joint venture that is 30% owned by VAC and serves less than 20% of the domestic market, on a single route (HCMC - Hanoi). Operation of aircraft in Vietnam requires authorization from the Prime Minister but the detailed conditions for permission to be given are not yet defined in law.

Government does not allow foreign direct investment in air services, so the only way to tap into foreign business investment is through joint venture arrangements.

Domestic fares are set by government in accordance with Prime Minister Decision No. 818/TTg/1995 dated 13 December 1995. Foreigners pay about double those paid by Vietnamese. Fares on some short domestic routes are estimated to be lower than costs and so there is a cross-subsidy from other more profitable routes.

Vietnam has pledged to move toward a free market in airline services by creating a "fair and competitive" environment for the sustained development of Vietnamese airlines, according to the statement by Mr Nguyen Tien Sam, Director General of CAAV, at the 35th annual conference of civil aviation directors on 20 September 1999. This will place huge challenges on the Vietnamese airline industry.
In international markets, competition is limited in accordance with bilateral agreements. Vietnam Airlines operates most services authorized for Vietnamese airlines, but Pacific operates one route from HCMC to Taipei. These routes are regarded as relatively profitable for these airlines.

2) Increasing financial losses

Recent economic problems have had an adverse impact on the Vietnamese airline industry. Domestic services have been cut (reducing the aircraft fleet of Pacific Airlines from two to one)

The VAC is reported to be not financially viable at current cost and tariff levels, and the airline has insufficient commercial freedom to deal with the matter (especially to increase fares on domestic routes). The loss in 1998 was US$ 4.5 million and is expected to rise to US$ 38 million in 1999, according to General Manager Dao Manh Nhuong. As Vietnam enters into an increasingly liberalized international air transport environment, pressure will intensify to develop attractive international services and to match domestic fares and service levels to costs. This situation deserves urgent attention to avoid accumulation of debt and the risk of bankruptcy.

3) Inadequate cost recovery for infrastructure

Airport and navigation charges do not seem to be based on costs and so the extent of cost recovery differs between airports. There is apparently a net transfer from air traffic management revenues to airports, although this is impossible to confirm in detail because financial accounts are not made available.

It is understood that charges for over-flying aircraft generate significant revenue and this might exceed the cost of service provision. Since, under ICAO guidelines, charges should reflect costs, this situation is unsustainable.

A further difficulty in assessing cost recovery is that airports are often shared with the military, which makes it difficult to apportion shared fixed costs.

4) Limited scope for equitization

No plan has yet been developed for equitizing organizations in the air subsector and there may be limited scope for this because of the large amounts of finance involved.

However, the government is encouraging the SOEs involved in airport services to develop commercial activities, with the purpose of allowing them to develop related business interests such as shops, hotels, advertising, etc. A number of joint venture operations are engaged in hotel, food processing, forwarding, and storage activities, but many have financial difficulties. All these activities are under VAC.

5) Implementing ICAO agreements

Implementing international agreements on safety and technical standards is a

major challenge to the Vietnamese aviation sector, which has responded with major improvements in recent years.

The introduction of the new CNS/ATM system proposed for Vietnam will increase the challenge still further, requiring upgrading of management systems and personnel.

6) Inadequate environmental capacity

Airports have inadequate means of dealing with sewerage and solid waste. The problem is growing and requires serious attention in view of the growing traffic levels. Although not an issue at present, the amount of noise from aircraft will grow and this will particularly affect communities around the airports at Danang and Tan Son Nhat.

7) Lack of separation of regulatory and commercial functions

To ensure safe, effective and economic air transport, the regulatory and commercial functions must be clearly separated. This has occurred to a large extent through separating VAC and CAAV.

However the separation has not yet been achieved in airport services. In this case, both commercial and regulatory functions are still provided by the three airport authorities, which are public service SOEs (and therefore given only limited financial autonomy). To establish truly independent oversight of airport operations it is necessary to review and restructure the airport authorities.

8) Complicated interagency coordination

The CAAV is under the Office of Government rather than the MOT. While it simplifies administration of the aviation subsector this arrangement has fundamental problems:

- it is inconsistent with overall government policies for decentralization of administration,
- it makes development of an integrated transport network and overall policy framework for transport more complicated (especially regarding setting investment priorities), and
- regulatory oversight is largely left to CAAV and so there is a danger that CAAV becomes the judge of its own management activities - a dangerous situation where major technical safety issues are involved.

The weakness of regulation oversight is particularly important because, like all specialized government departments, CAAV has significant powers over the appointments of the directors of business organizations and their development plans - in particular CAAV has such powers over VAC and, together with a limited supply of senior personnel in aviation management, this makes it difficult for

CAAV to deal with VAC at arm's length.

Planning coordination is not satisfactory in the aviation sector. For example:

- the new Terminal 1 at Hanoi Noi Bai Airport obscures the view of a large portion of the taxiway to the threshold of Runway 11, and
- the current development of the new area control center at HCMC appears to be taking place without regard to the fact that it will be superceded within a few years by a new national center using new technology.

In future there will be even more users of airports whose interests must be taken into account when planning airports. Therefore there is a need to develop new planning processes that involve users and a need so strengthen the capacity of CAAV to take into account all social and environmental factors when carrying out project evaluations.

In particular better cooperation is required between CAAV and the Post and Telecommunications Department, to ensure that secure and reliable telecommunications services are provided for airports.

Furthermore at joint civil/military-use airport, improved operational coordination is required to minimize potential problems that might arise if communications is lost between the two organizations. This problem is particularly serious from a safety point of view at Noi Bai airport where there is a danger of military operations being given precedence over civil operations, contrary to normal international practice.

Appendices

Appendix 3-A

Interregional Passenger Movement by Mode

		1	2	3	4	5	6	7	8	Total
1	Car	12.9	12.7	14.7	13.2	6.9	0.2	1.6	5.8	12.3
	Bus	75.3	82.1	84.5	75.3	51.9	99.8	38.7	94.2	77.4
	Inland Waterway	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	Railway	11.8	4.5	0.0	10.6	24.6	0.0	23.0	0.0	8.8
	Air Transport	0.0	0.0	0.8	0.9	16.6	0.0	36.6	0.0	1.3
	Total	57,811	95,939	10,560	22,190	3,091	4,188	6,778	312	258,680
2	Car		11.2	20.4	4.3	8.6	0.0	6.6	0.0	12.1
	Bus		73.4	79.6	94.6	81.2	100.0	93.4	100.0	80.3
	Inland Waterway		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
	Railway		15.3	0.0	1.1	10.2	0.0	0.0	0.0	7.2
	Air Transport		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total		17,542	716	3,426	379	342	638	190	136,714
3	Car			32.0	6.3	11.5	0.0	0.0	0.0	15.1
	Bus			68.0	93.8	88.5	0.0	0.0	0.0	84.2
	Inland Waterway			0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Railway			0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Air Transport			0.0	0.0	0.0	0.0	0.0	0.0	0.7
	Total			194	672	122	0	0	0	12,458
4	Car				6.3	6.5	8.4	3.9	3.7	9.5
	Bus				75.7	56.4	91.6	59.7	96.3	75.3
	Inland Waterway				0.0	0.0	0.0	0.0	0.0	0.0
	Railway				17.9	36.0	0.0	28.4	0.0	14.2
	Air Transport				0.0	1.0	0.0	7.9	0.0	1.0
	Total				6,047	3,379	838	2,737	108	45,444
5	Car					1.4	1.9	4.2	9.7	2.8
	Bus					92.8	97.3	78.2	90.3	86.3
	Inland Waterway					0.0	0.0	0.0	0.0	0.0
	Railway					5.3	0.0	12.5	0.0	8.6
	Air Transport					0.5	0.8	5.2	0.0	2.4
	Total					15,524	11,934	14,359	554	64,866
6	Car						15.7	5.6	0.0	4.8
	Bus						84.3	91.3	0.0	94.1
	Inland Waterway						0.0	0.0	0.0	0.0
	Railway						0.0	0.0	0.0	0.0
	Air Transport						0.0	3.1	0.0	1.1
	Total						2,116	6,976	0	28,510
7	Car							9.3	4.8	8.0
	Bus							90.1	94.3	89.9
	Inland Waterway							0.3	0.9	0.5
	Railway							0.2	0.0	0.9
	Air Transport							0.0	0.0	0.7
	Total							185,005	117,968	519,466
8	Car								4.4	4.7
	Bus								71.6	90.0
	Inland Waterway								24.0	5.2
	Railway								0.0	0.0
	Air Transport								0.0	0.0
	Total								13,596	146,324
Total	Car									8.7
	Bus									85.5
	Inland Waterway									0.9
	Railway									4.1
	Air Transport									0.8
	Total (pass/day)									1,212,462

1) The numbers from 1 to 8 refers to the origin and destination regions

Appendix 3 - B (2)

Interregional Goods Movement by Mode (Paddy and Food Crops)

		1	2	3	4	5	6	7	8	Total
1	Road (%)	99.9	100.0	100.0	100.0	94.7	100.0	99.2	100.0	99.7
	Inland Waterway (%)									
	Railway (%)	0.1								0.0
	Coastal Shipping (%)					5.3		0.8		0.2
	Air Transport (%)									
	Total ('000 Tons/Year)	572	296	84	126	42	1	96	24	1,241
2	Road (%)	97.9	98.1	100.0	100.0	100.0		100.0	100.0	98.3
	Inland Waterway (%)	2.1								1.0
	Railway (%)		1.9							0.7
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	237	177	1	0	3	0	51	15	485
3	Road (%)	100.0	100.0	100.0						100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	152	8	13	0	0	0	0	0	173
4	Road (%)	100.0	100.0		100.0	100.0		100.0		100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	163	31	0	12	41	0	7	0	254
5	Road (%)	100.0	75.6		99.0	99.3	100.0	100.0	100.0	94.2
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)		24.4		1.0	0.7				5.8
	Air Transport (%)									
	Total ('000 Tons/Year)	169	153	0	38	147	53	77	36	672
6	Road (%)	100.0	100.0		100.0	100.0		95.7	53.0	96.0
	Inland Waterway (%)									
	Railway (%)							4.3	47.0	4.0
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	65	9	0	4	184	0	93	24	380
7	Road (%)	12.7	100.0		38.5	86.8	100.0	100.0	88.4	68.7
	Inland Waterway (%)								11.6	2.7
	Railway (%)									
	Coastal Shipping (%)	87.3			61.5	13.2				28.6
	Air Transport (%)									
	Total ('000 Tons/Year)	1,453	141	0	204	207	116	1,680	1,164	4,964
8	Road (%)	12.5	100.0		32.4	100.0	100.0	53.5	18.8	48.0
	Inland Waterway (%)							46.5	81.2	41.5
	Railway (%)									
	Coastal Shipping (%)	87.5			67.6					10.5
	Air Transport (%)									
	Total ('000 Tons/Year)	514	61	0	135	126	75	3,734	483	5,126
Total	Road (%)	48.2	95.4	100.0	58.2	95.9	100.0	69.7	69.2	67.7
	Inland Waterway (%)	0.2						30.2	30.2	17.0
	Railway (%)	0.0	0.4					0.1	0.6	0.1
	Coastal Shipping (%)	51.7	4.3		41.8	4.1		0.0		15.1
	Air Transport (%)									
	Total ('000 Tons/Year)	3,324	875	97	519	750	245	5,738	1,745	13,295

Appendix 3 - B (3)

Interregional Goods Movement by Mode (Sugar and Sugarcane)

		1	2	3	4	5	6	7	8	Total
1	Road (%)	100.0	100.0	100.0	100.0					100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	34	75	12	46	0	0	0	0	166
2	Road (%)	100.0		100.0						100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	7	0	0	0	0	0	0	0	7
3	Road (%)	100.0	100.0	100.0						100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	69	6	2	0	0	0	0	0	76
4	Road (%)	100.0			100.0	100.0		100.0		100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	100	0	0	7	26	0	1	0	134
5	Road (%)	100.0			100.0	100.0	100.0	100.0		100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	23	0	0	24	92	28	115	0	281
6	Road (%)				100.0	100.0		100.0		100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	1	72	0	13	0	87
7	Road (%)	100.0			100.0	100.0	100.0	100.0	85.5	96.7
	Inland Waterway (%)								14.5	3.3
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	18	0	0	1	38	20	955	310	1,341
8	Road (%)							100.0		54.1
	Inland Waterway (%)								100.0	45.9
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	104	89	193
Total	Road (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	66.5	94.2
	Inland Waterway (%)								33.5	5.8
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	249	81	14	79	228	48	1,188	399	2,286

Appendix 3 - B (4)

Interregional Goods Movement by Mode (Wood and Forestry Products)

		1	2	3	4	5	6	7	8	Total
	Road (%)	100.0	95.6	100.0	100.0			100.0		99.2
	Inland Waterway (%)									
1	Railway (%)		4.4							0.8
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	54	25	3	23	0	0	27	0	132
	Road (%)	59.4	87.1			100.0		100.0	100.0	66.1
	Inland Waterway (%)	38.0								29.7
2	Railway (%)	2.6	12.9							4.2
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	170	37	0	0	5	0	3	1	217
	Road (%)	100.0								100.0
	Inland Waterway (%)									
3	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	32	0	0	0	0	0	0	0	32
	Road (%)	95.7	64.5		97.1	83.3		80.9		92.4
	Inland Waterway (%)									
4	Railway (%)	4.3	35.5		2.9	15.0		6.4		6.1
	Coastal Shipping (%)					1.7		12.7		1.5
	Air Transport (%)									
	Total ('000 Tons/Year)	278	11	0	12	22	0	40	0	364
	Road (%)	87.5			100.0	98.8	100.0	62.3		60.9
	Inland Waterway (%)									
5	Railway (%)	12.5	100.0			1.3		36.1		7.8
	Coastal Shipping (%)							1.6	100.0	31.3
	Air Transport (%)									
	Total ('000 Tons/Year)	9	0	0	5	146	21	70	113	364
	Road (%)	100.0	100.0			100.0		100.0	100.0	100.0
	Inland Waterway (%)									
6	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	13	5	0	0	28	0	74	1	121
	Road (%)	95.2	94.7					99.8	81.9	98.5
	Inland Waterway (%)								18.1	1.2
7	Railway (%)	4.8	5.3			100.0		0.2		0.3
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	8	7	0	0	1	0	1,143	82	1,241
	Road (%)					100.0		100.0	54.3	77.8
	Inland Waterway (%)								45.7	22.2
8	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	3	0	21	23	47
	Road (%)	85.4	87.7	100.0	99.1	97.0	100.0	97.4	37.3	89.1
	Inland Waterway (%)	11.4							11.5	3.6
Total	Railway (%)	3.2	12.3		0.9	2.9		2.1		2.6
	Coastal Shipping (%)					0.2		0.5	51.2	4.7
	Air Transport (%)									
	Total ('000 Tons/Year)	564	86	3	41	205	21	1,378	220	2,518

Appendix 3 - B (5)

Interregional Goods Movement by Mode (Steel)

		1	2	3	4	5	6	7	8	Total
	Road (%)	98.7	98.4	100.0	100.0	97.4	100.0	18.8	100.0	82.4
	Inland Waterway (%)									
1	Railway (%)	1.3	1.6			1.3				0.9
	Coastal Shipping (%)					1.3		81.2		16.7
	Air Transport (%)									
	Total ('000 Tons/Year)	329	112	29	59	28	7	146	3	712
	Road (%)	50.0	24.0		75.7	100.0				39.0
	Inland Waterway (%)									
2	Railway (%)	50.0	76.0		24.3					61.0
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	476	658	0	74	31	0	0	0	1,238
	Road (%)	100.0								100.0
	Inland Waterway (%)									
3	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	3	0	0	0	0	0	0	0	3
	Road (%)	17.2	22.0		1.3	2.1		67.6		14.6
	Inland Waterway (%)									
4	Railway (%)	82.8	78.0		98.7	97.9		32.4		85.4
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	70	45	0	28	68	0	14	0	224
	Road (%)	100.0			100.0	100.0	100.0	94.9		95.9
	Inland Waterway (%)									
5	Railway (%)		100.0					0.6		1.1
	Coastal Shipping (%)							4.6		3.0
	Air Transport (%)									
	Total ('000 Tons/Year)	6	1	0	4	22	1	64	0	98
	Road (%)					100.0		100.0		100.0
	Inland Waterway (%)									
6	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	1	0	30	0	32
	Road (%)	6.9	100.0		100.0	100.0	100.0	100.0	100.0	79.3
	Inland Waterway (%)									
7	Railway (%)									
	Coastal Shipping (%)	93.1								20.7
	Air Transport (%)									
	Total ('000 Tons/Year)	174	1	0	5	20	7	233	342	783
	Road (%)							88.6	17.9	56.3
	Inland Waterway (%)							11.4	82.1	43.7
8	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	54	45	99
	Road (%)	56.3	34.2	100.0	73.4	60.4	100.0	75.5	90.5	59.8
	Inland Waterway (%)							1.1	9.5	1.4
Total	Railway (%)	28.4	65.8		26.6	39.4		0.9		29.9
	Coastal Shipping (%)	15.3				0.2		22.5		8.9
	Air Transport (%)									
	Total ('000 Tons/Year)	1,057	817	29	170	170	14	540	390	3,188

Appendix 3 - B (6)

Interregional Goods Movement by Mode (Sand, Stone, Iron Ore and Others)

		1	2	3	4	5	6	7	8	Total
	Road (%)	40.1	68.7	100.0	100.0	33.9	100.0	47.9		46.7
	Inland Waterway (%)	49.6	29.3							40.2
1	Railway (%)	10.3	2.0			0.4		2.5		7.9
	Coastal Shipping (%)					65.7		49.6	100.0	5.2
	Air Transport (%)									
	Total ('000 Tons/Year)	2,697	403	37	211	99	12	87	81	3,627
	Road (%)	19.5	53.1		100.0	85.7		100.0		38.0
	Inland Waterway (%)	78.0	44.5							59.6
2	Railway (%)	2.5	2.4			14.3				2.5
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	1,681	1,737	0	55	20	0	5	0	3,499
	Road (%)	100.0		100.0						100.0
	Inland Waterway (%)									
3	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	53	0	2	0	0	0	0	0	54
	Road (%)	97.2	97.7		5.5	66.7		56.3	100.0	69.2
	Inland Waterway (%)									
4	Railway (%)	2.8	2.3		94.5	33.3		0.8		25.5
	Coastal Shipping (%)							42.9		5.3
	Air Transport (%)									
	Total ('000 Tons/Year)	184	32	0	87	21	0	46	4	374
	Road (%)	90.0			100.0	86.0	100.0	96.0		91.1
	Inland Waterway (%)									
5	Railway (%)	10.0				14.0		4.0		8.9
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	7	0	0	43	267	8	182	0	508
	Road (%)					100.0		100.0		100.0
	Inland Waterway (%)									
6	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	16	0	28	0	43
	Road (%)	93.5			100.0	83.1	100.0	99.1	30.1	68.0
	Inland Waterway (%)								69.9	31.3
7	Railway (%)	6.5				16.9		0.9		0.7
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	11	0	0	2	43	16	2,200	1,840	4,112
	Road (%)	100.0						98.6	4.7	14.8
	Inland Waterway (%)							1.4	95.3	85.2
8	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	3	0	0	0	0	0	121	1,023	1,146
	Road (%)	35.8	56.7	100.0	79.4	74.3	100.0	96.5	20.5	50.9
	Inland Waterway (%)	57.1	41.0					0.1	76.7	43.4
Total	Railway (%)	7.0	2.3		20.6	11.8		1.1		4.1
	Coastal Shipping (%)					13.9		2.4	2.7	1.6
	Air Transport (%)									
	Total ('000 Tons/Year)	4,636	2,172	38	399	466	36	2,669	2,947	13,364

Appendix 3 - B (7)

Interregional Goods Movement by Mode (Cement)

		1	2	3	4	5	6	7	8	Total
	Road (%)	48.5	76.8	100.0	34.0	1.6	100.0	2.8		36.3
	Inland Waterway (%)	51.1								21.0
1	Railway (%)	0.4	23.2							2.0
	Coastal Shipping (%)				66.0	98.4		97.2		40.7
	Air Transport (%)									
	Total ('000 Tons/Year)	967	183	117	332	650	2	103	0	2,354
	Road (%)	99.0	92.4			12.8				96.4
	Inland Waterway (%)									
2	Railway (%)	1.0	7.6							2.1
	Coastal Shipping (%)					87.2				1.5
	Air Transport (%)									
	Total ('000 Tons/Year)	1,474	329	0	0	31	0	0	0	1,834
	Road (%)	100.0		100.0						100.0
	Inland Waterway (%)									
3	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	32	0	31	0	0	0	0	0	64
	Road (%)	85.5	100.0	100.0	33.3	71.4		100.0		68.6
	Inland Waterway (%)									
4	Railway (%)	14.5			66.7	15.6				29.7
	Coastal Shipping (%)					13.0				1.8
	Air Transport (%)									
	Total ('000 Tons/Year)	257	5	48	199	84	0	24	0	616
	Road (%)				88.9	100.0	100.0	29.8		83.7
	Inland Waterway (%)									
5	Railway (%)				11.1			0.6		0.3
	Coastal Shipping (%)							69.6	100.0	16.0
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	7	176	84	66	8	341
	Road (%)					100.0	100.0			100.0
	Inland Waterway (%)									
6	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	12	4	0	0	16
	Road (%)	95.8	100.0				100.0	100.0	25.0	70.2
	Inland Waterway (%)								75.0	29.8
7	Railway (%)									
	Coastal Shipping (%)	4.2								0.0
	Air Transport (%)									
	Total ('000 Tons/Year)	9	2	0	0	0	21	919	625	1,576
	Road (%)							1.2	8.5	2.1
	Inland Waterway (%)							98.8	91.5	97.9
8	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	3,995	505	4,500
	Road (%)	79.9	87.0	100.0	34.4	27.5	100.0	19.9	17.5	40.8
	Inland Waterway (%)	18.0						77.3	81.8	47.5
Total	Railway (%)	2.0	13.0		24.8	1.4		0.0		2.4
	Coastal Shipping (%)	0.0			40.8	71.1		2.9	0.7	9.3
	Air Transport (%)									
	Total ('000 Tons/Year)	2,739	518	196	537	954	111	5,107	1,139	11,301

Appendix 3 - B (8)

Interregional Goods Movement by Mode (Fertilizer)

		1	2	3	4	5	6	7	8	Total
	Road (%)	67.3	85.0	100.0	82.0	4.5	100.0	4.4		49.1
	Inland Waterway (%)	16.9								6.1
1	Railway (%)	15.9	15.0		17.8	41.1		0.1		13.0
	Coastal Shipping (%)				0.3	54.4		95.6	100.0	31.8
	Air Transport (%)									
	Total ('000 Tons/Year)	596	235	81	123	153	7	419	44	1,658
	Road (%)	21.4	47.7		9.5	5.6				23.2
	Inland Waterway (%)	30.0								19.1
2	Railway (%)	48.6	52.3		52.9	94.4		100.0		51.4
	Coastal Shipping (%)				37.6					6.3
	Air Transport (%)									
	Total ('000 Tons/Year)	645	167	0	169	26	0	6	0	1,013
	Road (%)									
	Inland Waterway (%)									
3	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	0	0	0
	Road (%)	100.0				30.6		47.4		43.2
	Inland Waterway (%)									
4	Railway (%)		100.0		100.0	2.3				5.2
	Coastal Shipping (%)					67.1		52.6		51.5
	Air Transport (%)									
	Total ('000 Tons/Year)	12	6	0	3	63	0	118	0	203
	Road (%)				16.3	100.0	100.0	100.0		88.1
	Inland Waterway (%)									
5	Railway (%)									
	Coastal Shipping (%)				83.7					11.9
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	38	65	154	9	0	266
	Road (%)					100.0		100.0		100.0
	Inland Waterway (%)									
6	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	22	0	17	0	39
	Road (%)	4.3				65.8	100.0	100.0	10.1	47.5
	Inland Waterway (%)								89.9	48.0
7	Railway (%)					0.6				0.0
	Coastal Shipping (%)	95.7			100.0	33.5				4.5
	Air Transport (%)									
	Total ('000 Tons/Year)	170	0	0	19	59	128	1,695	2,367	4,437
	Road (%)					100.0		100.0	2.0	10.5
	Inland Waterway (%)								98.0	89.5
8	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	7	0	20	287	314
	Road (%)	39.3	68.5	100.0	35.0	40.7	100.0	79.5	9.1	44.8
	Inland Waterway (%)	20.7							89.3	34.1
Total	Railway (%)	28.7	31.5		32.5	22.6		0.3		9.4
	Coastal Shipping (%)	11.4			32.4	36.7		20.3	1.6	11.7
	Air Transport (%)									
	Total ('000 Tons/Year)	1,423	408	81	352	396	288	2,285	2,698	7,931

Appendix 3 - B (9)

Interregional Goods Movement by Mode (Coal)

		1	2	3	4	5	6	7	8	Total
	Road (%)	82.8	7.4	100.0	76.1	100.0				31.4
	Inland Waterway (%)		90.7							59.1
1	Railway (%)	17.2	1.9		23.9					8.9
	Coastal Shipping (%)							100.0		0.7
	Air Transport (%)									
	Total ('000 Tons/Year)	23	1,222	35	582	1	0	13	0	1,876
	Road (%)	6.3	9.2		6.0			0.7		6.9
	Inland Waterway (%)	85.4	87.7							79.5
2	Railway (%)	8.2	3.1		26.1	1.1				7.2
	Coastal Shipping (%)				67.9	98.9		99.3		6.4
	Air Transport (%)									
	Total ('000 Tons/Year)	7,928	3,426	0	472	131	0	342	0	12,298
	Road (%)			100.0						100.0
	Inland Waterway (%)									
3	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	5	0	0	0	0	0	5
	Road (%)	100.0	100.0		83.3					29.8
	Inland Waterway (%)									
4	Railway (%)				16.7					0.8
	Coastal Shipping (%)							100.0		69.4
	Air Transport (%)									
	Total ('000 Tons/Year)	31	2	0	7	0	0	90	0	130
	Road (%)									
	Inland Waterway (%)									
5	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	0	0	0
	Road (%)					100.0				100.0
	Inland Waterway (%)									
6	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	6	0	0	0	6
	Road (%)									
	Inland Waterway (%)									
7	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	0	0	0
	Road (%)							100.0		100.0
	Inland Waterway (%)									
8	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	4	0	4
	Road (%)	6.9	8.8	100.0	45.0	5.3		16.6	100.0	11.1
	Inland Waterway (%)	84.8	88.4							75.4
Total	Railway (%)	8.2	2.8		24.8	1.1				7.3
	Coastal Shipping (%)				30.2	93.7		83.4		6.2
	Air Transport (%)									
	Total ('000 Tons/Year)	7,982	4,650	40	1,060	138	0	530	35	14,435

Appendix 3 - B (10)

Interregional Goods Movement by Mode (Petroleum Products)

		1	2	3	4	5	6	7	8	Total
	Road (%)	97.7	62.8	100.0	97.0				100.0	79.8
	Inland Waterway (%)		30.1							15.4
1	Railway (%)	2.3	7.1		3.0	100.0				4.8
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	235	507	57	192	0	0	0	1	992
	Road (%)	43.4	7.9							16.9
	Inland Waterway (%)	56.6	92.1							77.0
2	Railway (%)									
	Coastal Shipping (%)				100.0	100.0				6.1
	Air Transport (%)									
	Total ('000 Tons/Year)	95	240	0	20	1	0	0	0	357
	Road (%)	100.0								100.0
	Inland Waterway (%)									
3	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	13	0	0	0	0	0	0	0	13
	Road (%)	100.0			100.0					100.0
	Inland Waterway (%)									
4	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	76	0	0	25	0	0	0	0	101
	Road (%)				99.6	99.8	100.0			99.8
	Inland Waterway (%)									
5	Railway (%)				0.4	0.2				0.2
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	98	394	168	0	0	660
	Road (%)						100.0	100.0		100.0
	Inland Waterway (%)									
6	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	3	33	0	37
	Road (%)					100.0	100.0	100.0	11.3	33.4
	Inland Waterway (%)								88.7	49.6
7	Railway (%)	100.0			100.0					0.2
	Coastal Shipping (%)		100.0							16.8
	Air Transport (%)									
	Total ('000 Tons/Year)	11	974	0	1	195	105	1,271	3,247	5,803
	Road (%)							100.0		8.1
	Inland Waterway (%)								100.0	91.9
8	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	25	287	313
	Road (%)	83.7	19.6	100.0	91.7	99.6	100.0	100.0	10.4	43.8
	Inland Waterway (%)	12.5	21.7						89.6	43.5
Total	Railway (%)	3.8	2.1		2.2	0.2				0.7
	Coastal Shipping (%)		56.6		6.1	0.2				12.0
	Air Transport (%)									
	Total ('000 Tons/Year)	430	1,721	57	336	590	276	1,329	3,535	8,274

Appendix 3 - B (11)

Interregional Goods Movement by Mode (Industrial Crops - Coffee, Tea, Rubber, etc.)

		1	2	3	4	5	6	7	8	Total
	Road (%)	95.2	22.8				100.0	91.7		59.5
	Inland Waterway (%)									
1	Railway (%)	4.8	77.2			100.0		8.3		40.5
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	23	29	0	0	1	1	9	0	63
	Road (%)	56.5				60.0				53.1
	Inland Waterway (%)									
2	Railway (%)	43.5	100.0			40.0		100.0		46.9
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	54	3	0	0	7	0	1	0	65
	Road (%)									
	Inland Waterway (%)									
3	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	0	0	0
	Road (%)	100.0	60.9		100.0	100.0		100.0		87.8
	Inland Waterway (%)									
4	Railway (%)		39.1							12.2
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	11	17	0	2	8	0	15	0	54
	Road (%)	50.0	90.9		85.2	100.0	100.0	28.6		90.5
	Inland Waterway (%)									
5	Railway (%)	50.0	9.1		14.8			71.4		9.5
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	3	4	0	10	28	6	3	0	54
	Road (%)		100.0			100.0		100.0		100.0
	Inland Waterway (%)									
6	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	10	0	0	1	0	327	0	338
	Road (%)	11.0	77.1		42.2	92.5	100.0	100.0	100.0	92.4
	Inland Waterway (%)									
7	Railway (%)	89.0	22.9		57.8	7.5				7.6
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	60	13	0	23	29	7	697	111	941
	Road (%)							100.0		100.0
	Inland Waterway (%)									
8	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	5	0	5
	Road (%)	47.3	53.1		57.3	91.3	100.0	99.7	100.0	90.8
	Inland Waterway (%)									
Total	Railway (%)	52.7	46.9		42.7	8.7		0.3		9.2
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	150	76	0	35	76	15	1,057	111	1,520

Appendix 3 - B (12)

Interregional Goods Movement by Mode (Manufacturing Goods)

		1	2	3	4	5	6	7	8	Total
	Road (%)	95.0	78.5	100.0	98.8	85.1	100.0	47.3	100.0	82.6
	Inland Waterway (%)	2.2								0.6
1	Railway (%)	2.7	21.5		1.2	13.8		6.5		9.7
	Coastal Shipping (%)					0.4		44.5		6.8
	Air Transport (%)					0.7		1.8		0.3
	Total ('000 Tons/Year)	697	865	51	411	98	13	388	31	2,553
	Road (%)	74.1	92.5	100.0	98.2			8.2		60.5
	Inland Waterway (%)									
2	Railway (%)	25.9	7.5		1.8	12.6		2.2		13.5
	Coastal Shipping (%)					87.4		89.6		25.9
	Air Transport (%)									
	Total ('000 Tons/Year)	492	160	5	182	93	0	252	0	1,183
	Road (%)	100.0	100.0	100.0	100.0				100.0	100.0
	Inland Waterway (%)									
3	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	33	4	7	13	0	0	0	4	61
	Road (%)	83.6	82.6		82.6	94.2		77.6		84.0
	Inland Waterway (%)									
4	Railway (%)	0.6	17.4		17.4	2.9		1.3		2.7
	Coastal Shipping (%)	15.8				2.9		21.1		13.3
	Air Transport (%)									
	Total ('000 Tons/Year)	438	50	0	17	62	0	55	0	623
	Road (%)	25.8			56.8	99.6	100.0	89.5	100.0	60.2
	Inland Waterway (%)									
5	Railway (%)	0.4	100.0		1.9	0.4		1.6		1.1
	Coastal Shipping (%)	73.6			41.3			8.4		38.6
	Air Transport (%)	0.2						0.5		0.2
	Total ('000 Tons/Year)	379	3	0	96	195	42	135	5	855
	Road (%)	100.0				100.0		100.0	100.0	100.0
	Inland Waterway (%)									
6	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	21	0	0	0	9	0	30	1	61
	Road (%)	53.7	76.3		60.7	90.2	100.0	99.9	86.0	90.6
	Inland Waterway (%)								13.9	2.7
7	Railway (%)	19.9	23.7		39.3	4.6		0.1		3.2
	Coastal Shipping (%)	23.1				5.0				3.0
	Air Transport (%)	3.3				0.3		0.0	0.1	0.4
	Total ('000 Tons/Year)	426	14	0	39	273	87	2,140	725	3,703
	Road (%)	100.0						100.0	19.7	64.9
	Inland Waterway (%)								80.3	35.1
8	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	11	0	0	0	0	0	359	287	657
	Road (%)	71.5	80.6	100.0	91.0	81.0	100.0	86.1	68.5	80.1
	Inland Waterway (%)	0.6							31.5	3.6
Total	Railway (%)	9.4	19.4		3.8	5.5		1.1		5.7
	Coastal Shipping (%)	17.9			5.3	13.3		12.5		10.4
	Air Transport (%)	0.6				0.2		0.2	0.0	0.3
	Total ('000 Tons/Year)	2,496	1,096	62	758	729	142	3,360	1,052	9,695

Appendix 3 - B (13)

Interregional Goods Movement by Mode (Fishery Products)

		1	2	3	4	5	6	7	8	Total
1	Road (%)	100.0	100.0	100.0	100.0	100.0		100.0		100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	79	20	2	7	11	0	1	0	120
2	Road (%)	100.0			100.0					100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	2	0	0	14	0	0	0	0	16
3	Road (%)									
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	0	0	0
4	Road (%)	100.0	100.0					100.0		100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	48	27	0	0	0	0	8	0	84
5	Road (%)	100.0	100.0			100.0	100.0	100.0	100.0	100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	41	4	0	0	0	0	23	5	74
6	Road (%)					100.0		100.0	100.0	100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	0	0	7	15	22
7	Road (%)	100.0	100.0		100.0	100.0	100.0	100.0	100.0	100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	61	38	0	19	36	24	436	120	735
8	Road (%)	100.0			100.0	100.0	100.0	100.0	20.3	82.0
	Inland Waterway (%)								79.7	18.0
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	14	0	0	4	22	63	353	133	589
Total	Road (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	61.2	93.5
	Inland Waterway (%)								38.8	6.5
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	245	90	2	45	69	87	829	273	1,640

Appendix 3 - B (14)

Interregional Goods Movement by Mode (Animal Meat and Others)

		1	2	3	4	5	6	7	8	Total
	Road (%)	93.6	89.8	100.0	94.8	65.0	100.0	100.0	100.0	92.9
	Inland Waterway (%)									
1	Railway (%)	6.4	10.2		5.2	35.0				7.1
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	155	147	23	146	22	1	53	15	563
	Road (%)	84.4	68.3	100.0	78.6			100.0		80.7
	Inland Waterway (%)									
2	Railway (%)	15.6	31.7		21.4					19.3
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	115	61	1	5	0	0	17	0	199
	Road (%)	100.0						100.0		100.0
	Inland Waterway (%)									
3	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	11	0	0	0	0	0	2	0	13
	Road (%)	93.0	97.9					100.0	100.0	85.6
	Inland Waterway (%)									
4	Railway (%)	7.0	2.1		100.0	100.0				14.4
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	89	18	0	10	22	0	130	2	271
	Road (%)	27.6	44.4			97.6	100.0	100.0		66.0
	Inland Waterway (%)									
5	Railway (%)	72.4	55.6		100.0	2.4				34.0
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	42	16	0	27	15	12	85	0	197
	Road (%)					100.0		100.0		100.0
	Inland Waterway (%)									
6	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	0	0	0	0	12	0	39	0	51
	Road (%)	96.1	96.1		95.6	99.8	100.0	100.0	100.0	99.6
	Inland Waterway (%)									
7	Railway (%)	3.9	3.9		4.4	0.2				0.4
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	104	19	0	41	152	46	813	538	1,712
	Road (%)	100.0	100.0		100.0			100.0	100.0	100.0
	Inland Waterway (%)									
8	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	11	14	0	7	0	0	162	128	322
	Road (%)	87.0	83.8	100.0	79.8	86.3	100.0	100.0	100.0	94.2
	Inland Waterway (%)									
Total	Railway (%)	13.0	16.2		20.2	13.7				5.8
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	527	274	24	237	223	58	1,302	683	3,328

Appendix 3 - B (1)

Interregional Goods Movement by Mode (All Goods)

		1	2	3	4	5	6	7	8	Total
1	Road (%)	63.3	57.5	100.0	82.3	20.5	100.0	34.2	37.1	60.1
	Inland Waterway (%)	30.2	33.5							20.7
	Railway (%)	6.5	9.0		8.0	7.8		2.1		6.8
	Coastal Shipping (%)				9.7	71.6		63.2	62.9	12.4
	Air Transport (%)					0.1		0.5		0.0
	Total ('000 Tons/Year)	6,461	4,119	530	2,259	1,105	44	1,342	199	16,059
2	Road (%)	26.5	31.4	100.0	35.6	19.2		14.7	100.0	28.0
	Inland Waterway (%)	62.8	57.2							55.3
	Railway (%)	10.7	11.4		23.7	12.5		2.4		11.3
	Coastal Shipping (%)				40.7	68.3		82.9		5.4
	Air Transport (%)									
	Total ('000 Tons/Year)	13,377	6,991	7	992	350	0	681	16	22,414
3	Road (%)	100.0	100.0	100.0	100.0			100.0	100.0	100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	397	18	59	13	0	0	2	4	493
4	Road (%)	89.2	74.8	100.0	36.3	59.1		64.1	100.0	74.4
	Inland Waterway (%)									
	Railway (%)	6.9	25.2		63.7	27.6		1.5		16.5
	Coastal Shipping (%)	3.9				13.2		34.4		9.1
	Air Transport (%)									
	Total ('000 Tons/Year)	1,759	243	48	408	419	0	549	5	3,431
5	Road (%)	53.7	72.0		73.6	97.3	100.0	88.0	27.4	83.3
	Inland Waterway (%)									
	Railway (%)	5.2	7.4		8.0	2.6		4.5		3.6
	Coastal Shipping (%)	41.0	20.5		18.4	0.1		7.4	72.6	13.1
	Air Transport (%)	0.1						0.1		0.0
	Total ('000 Tons/Year)	679	181	0	391	1,548	576	829	167	4,370
6	Road (%)	100.0	100.0		100.0	100.0	100.0	100.0	100.0	100.0
	Inland Waterway (%)									
	Railway (%)									
	Coastal Shipping (%)									
	Air Transport (%)									
	Total ('000 Tons/Year)	100	24	0	6	363	8	687	29	1,217
7	Road (%)	25.7	18.6		50.5	91.9	100.0	99.8	38.6	67.6
	Inland Waterway (%)								61.4	22.4
	Railway (%)	6.3	1.5		9.0	2.2		0.2		0.8
	Coastal Shipping (%)	67.4	79.9		40.5	5.8				9.1
	Air Transport (%)	0.6				0.1		0.0	0.0	0.0
	Total ('000 Tons/Year)	2,508	1,219	0	355	1,052	576	14,263	11,509	31,482
8	Road (%)	18.6	100.0		37.3	100.0	100.0	36.5	12.7	31.7
	Inland Waterway (%)							63.5	87.3	64.3
	Railway (%)									
	Coastal Shipping (%)	81.4			62.7					4.1
	Air Transport (%)									
	Total ('000 Tons/Year)	552	75	0	146	157	138	8,959	3,289	13,316
Total	Road (%)	41.8	40.6	100.0	63.5	70.8	100.0	72.6	33.1	53.2
	Inland Waterway (%)	40.1	41.8					20.8	65.3	33.8
	Railway (%)	8.4	9.8		16.1	6.2		0.4		5.0
	Coastal Shipping (%)	9.6	7.9		20.4	23.0		6.1	1.6	8.1
	Air Transport (%)	0.1				0.0		0.0	0.0	0.0
	Total ('000 Tons/Year)	25,833	12,872	643	4,568	4,994	1,342	27,312	15,219	92,783

1) The numbers from 1 to 8 refers to the origin and destination regions

APPENDIX 3-D: COMPARISON OF INTERREGIONAL TRAFFIC MOVEMENT BETWEEN NTSR (1992) AND VITRANSS (1999)

Table 3D-1
Interregional Passenger Movement, NTSR (1992)

(1,000 Passengers/year)

NORTH							SOUTH			
	NM[1]	RRD[2]	NC[3]				SC[4]	ENB[6]	MKD[7]	
NM	1,672	11,256	76				57	31,384	3,403	MKD
RRD		9,567	2,768	N	3,650	S	2,228	30,354		ENB
NC			422				3,150			SC
								70,576		
								5,950		WH[5]
Total		25,761		N	3,650	S		76,526		
%		24.3			3.4			72.2		

Table 3D-2
Interregional Freight Movement, NTSR (1992)

(1,000 tons/year)

NORTH							SOUTH			
	NM[1]	RRD[2]	NC[3]				SC[4]	ENB[6]	MKD[7]	
NM	1,173	7,951	333				196	7,530	1,042	MKD
RRD		2,925	1,758	N	1,483	S	1,047	1,927		ENB
NC			174				665			SC
								12,407		
								1,991		WH[5]
Total		14,314		N	1,483	S		14,398		
%		47.4			4.9			47.7		

Table 3D-3
Interregional Passenger Movement, VITRANSS (1999)

(1,000 Passengers/year)

NORTH							SOUTH			
	NM[1]	RRD[2]	NC[3]				SC[4]	ENB[6]	MKD[7]	
NM	6,500	36,600	1,200				400	42,200	5,000	MKD
RRD		23,600	8,400	N	8,600	S	7,400	57,700		ENB
NC			2,200				7,000			SC
								119,700		
								14,500		WH[5]
Total		78,500		N	8,600	S		134,200		
%		35.5			3.9			60.6		

Table 3D-4
Interregional Freight Movement, VITRANSS (1999)

(1,000 Passengers/year)

NORTH							SOUTH			
	NM[1]	RRD[2]	NC[3]				SC[4]	ENB[6]	MKD[7]	
NM	7,000	18,000	900				400	20,200	3,300	MKD
RRD		6,900	3,800	N	4,500	S	2,500	11,700		ENB
NC			400				1,800			SC
								39,900		
								4,200		WH[5]
Total		37,000		N	4,500	S		44,100		
%		43.2			5.3			51.5		

Table 3D-5
Increase in Interregional Passenger Movement, 1992-1999

NORTH							SOUTH			
	NM[1]	RRD[2]	NC[3]				SC[4]	ENB[6]	MKD[7]	
NM	3.9	3.3	15.8				7.0	1.3	1.5	MKD
PRD		2.5	3.0	N	2.4	S	3.3	1.9		ENB
NC			5.2				2.2			SC
								1.7		
								2.4		WH[5]
Total		3.0		N	2.4	S		1.8		

Table 3D-6
Increase in Interregional Freight Movement, 1992-1999

NORTH							SOUTH			
	NM[1]	RRD[2]	NC[3]				SC[4]	ENB[6]	MKD[7]	
NM	6.0	2.3	2.7				2.0	2.7	3.2	MKD
PRD		2.4	2.2	N	3.0	S	2.4	6.1		ENB
NC			2.3				2.7			SC
								3.2		
								2.1		WH[5]
Total		2.6		N	3.0	S		3.1		

Notes:

NM (Northern Mountains) includes Northeast and Northwest in VITRANSS.
RRD (Red River Delta) is identical with Red River Delta in VITRANSS.

NC (North Coastal) is identical with North Central Coast in VITRANSS.

SC (South Coastal) includes South Central Coast and a part of Northeastern South in VITRANSS.

WH (Western Highlands) includes Central Highland and a part of Northeastern South in VITRANSS.

ENB (East Nam Bo) is identical with a part of Northeastern South in VITRANSS.

MKD (Mekong Delta) is identical with Mekong River Delta in VITRANSS.

APPENDIX 5-A : TRANSPORT PROJECTS WITH SPECIFIC INSTITUTIONAL DEVELOPMENT COMPONENTS

Name of Project	Financing Agency	Implementing Agency	Completion Date
Highway Rehabilitation Project	IDA	MOT/VRA	
Rural Transport (Roads)	IDA	MOT	
Inland Waterway & Port Rehabilitation Project	IDA	IWB	
Urban Transport Improvement Project	IDA	Hanoi and HCMC	16/12/97
3rd Road Improvement Project	ADB (JSF)	PMU 1	30/3/98
MIS for Saigon Port	ADB (JSF)	Saigon Port	31/8/97
Institutional Strengthening	ADB	MOT/VRA	31/8/97
2nd Road Improvement Project	ADB (JSF)	MOT	17/1/98
Red River Waterways	ADB (JSF)	IWB	Yet to start
Transport Improvement and Strategy Planning	ADB (JSF)	VRA	Ongoing
Technical Assistance for the New Noi Bai International Airport	French ODA	CAAV	Yet to start
Vietnam Inland Waterways Project	CIDA	IWB	1999
Vietnam-Canada Policy Implementation Assistance Project	CIDA	MOT	1998
Vietnam-Canada Maritime Project	CIDA	VINAMARINE	Ongoing
Upgrading of Inland Waterways School No.1	Netherlands ODA	MOT/STC	1997
Training for Staff of Dredging Companies and Ports	Netherlands ODA	MOT/ VINAMARINE/STC	Ongoing
Civil Aviation Training	Netherlands ODA	CAAV	March 1998
Vietnamese Railways Maintenance Training	Belgium ODA	VINH	