

# Impact Assessment of Transport Infrastructure Projects in the Northern Vietnam

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## 1. Objectives

In a country like Viet Nam that is characterized by its large-scale population and high population density, it can be said that attention is being focused upon the poverty issues at the early stages of economic development. For this reason, it would be appropriate to set the poverty reduction issue within the objectives of the early stages of development. As this means that the results of economic development will be distributed to the poor class, it can be said to be desirable from a variety of standpoints.

However, what are the development strategy and development policy for accomplishing this objective? In this respect, there are various opinions and it has even been a controversial issue. It can broadly be divided into two views. The first view is that the importance of development in the social sector (such as health care and education) that targets the poor class should be stressed. The other view is that growth through the development of large-scale maintenance of infrastructure should be accelerated, and fruits of the growth should be also delivered to the poor class. In this evaluation report, firstly while bearing in mind and clarifying the initial conditions for Viet Nam, the development strategy for poverty reduction will be considered. Although both the development of the social sector and construction of the large-scale infrastructure can be considered necessary from the standpoint of the third-party evaluators, the next issue is how to consider the prioritization of infrastructure construction. In other words, although the needs for infrastructure construction exists in each region of the entire country, the question is rather, in a given timeframe and with limited finance, what type of regions should be given priority for the infrastructure construction project. By looking at the pro-

cesses in land development and the progress status of Viet Nam from the standpoint of unbalanced growth strategy, the positioning of the transport infrastructure project in northern area of Viet Nam will be considered.



National Highway No. 5 (at the 17 km point)



Container Positioning Crane in Hai Phong Port

## 2. Evaluation Results

### 1. General Overview and Analytical Framework

#### 1) Development strategy and poverty reduction: The Viet Nam Perspective

This evaluation targeted projects that were undertaken with Japanese ODA loans, namely the National Highway No.5 Improvement Project in the northern region and the Hai Phong Port Rehabilitation Project.

At the time of the decision and commencement of the project (in the first half of the 1990's), there were two characteristics as the early condition of the Viet Nam economy. Firstly, the transitional period from a socialism economy to a market economy, and secondly, an extremely high labor force per unit of arable land area, meaning an agricultural nation with surplus labor. Both of these characteristics still persist today.

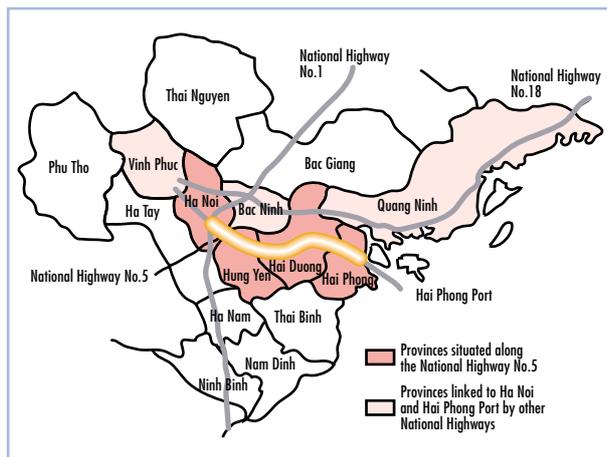


Figure 1. The Projects for Evaluation in the Red River Delta Region

The first characteristic reveals the need for Viet Nam to establish a market economy. In order to consider the manner in which to build a market economy, it would be useful to underline its specific content. According to Ishikawa (1990 1st Chapter), there are three basic concepts that determine the development or under-development of a market economy (i.e. the degree for market economy formation). (a) The social division of labor during production (The occupational specialization of market participants and the development of internal and external institutionalization). (b) The state of development of physical infrastructure relating to the market such as transportation, communication, storage and trading areas. (c) Market exchange systems (The formation and refinement

of market trade rules, which stress the importance of market participants to abide by the conditions of trade that are fixed with property rights and terms of contracts.) Among them, (b) demonstrates that the development of transport infrastructure is indispensable.

The second characteristic of the early condition implies that industrialization must be promoted for economic development. The development process consists of a rural society that is traditional, which is in equilibrium with industry belonging to the modern sector, and is a process in which a labor force is transferring from the rural sector to the industrial sector. This is acknowledged as “Two sector development model” of development economics or the “Lewis model” (for details please refer to Watanabe 1986). The drive for industrialization is certainly no less connected to the promotion of investment by companies that leads to industrial development. In order for this to occur, besides the political and institutional environment, the development of the transport network that will allow the procurement of raw materials and the transport of goods is essential.

Thus, the necessity of transport infrastructure development is demonstrated from both perspectives of market economy development and the industrialization of a surplus labor economy. However, it is not necessarily the case that the poverty issue can be solved with only these factors. Therefore what are the sufficient conditions? That would be the need for a strategy / policy, which will allow the involvement of the poor class in the developmental and industrialization processes of the market economy. Regarding this matter, attention should be given to the following three points:

Firstly, in order for industrial development to assimilate much of the labor force from the agricultural sector, the development of labor-intensive industries must be promoted. Since Viet Nam stands in comparatively advantageous position in this field, through effective incentive policies, it should seek direct investments from abroad and active investment from domestic small and medium-sized companies. This will not only lead to exports of its goods to foreign market, but also contribute to resolving the poverty issue. The investment funds of governments and investments of state owned companies must avoid extreme inclinations towards capital intensive sectors. On the other hand, the acquisition of foreign currency due to export expansion of industrial products

makes the future repayment of loans required for infrastructure construction possible. Therefore an export-orientated industrialization strategy that focuses upon direct foreign investment is preferable.

Secondly, in order to smoothly transfer labor from the agricultural sector to the industrial sector, it is necessary to raise the educational and cultural standards. One cannot expect farmers who only have sub-primary school education to work immediately within the industrial sector. In this respect, the necessity for developing the social sector mentioned at the beginning can be reaffirmed.

Thirdly, for a country such as Viet Nam where 70% of its population lives in rural areas, even if the two points stated above are taken heed, it will only be in the long term that industrialization would contribute to poverty reduction. In order to solve the poverty issue in a relatively shorter time, rural development and the modernization of the agricultural sector should be promoted concurrently with industrialization. Specifically, there is need for the rise in agricultural productivity, the diversification of agricultural products (expanding the production of value-added products such as vegetables and stockbreeding), and the expansion of markets for agricultural products and encouragement of access to markets (Regarding this point, please refer to the experiences in Taiwan analyzed by Oshima 1987). Even here, the *raison d'être* for the development of the transport infrastructure can be identified. However, not only large-scale transport infrastructure but also the rural routes is required. It goes without saying that rural development and the modernization of the agricultural sector also increases rural income and spending power; forms the markets for industrial products; provides investment resources to industrial development in the form of surplus agriculture, and performs the task of supporting industrialization.

## **2) Unbalanced growth strategy and the location of infrastructure project**

The previous section explained the necessity for constructions of infrastructure such as transport one for the development of Viet Nam's market economy and industrialization. Although the condition of physical infrastructure is not a sufficient condition, it demonstrated that it was a necessary condition for poverty reduction. The next issue is how to consider the priority ranking for this particular infrastructure construction project. In other

words, since finance such as construction funds is limited, first of all, due consideration needs to be given as to which regions should be given priority. It would be imprudent to construct infrastructure simultaneously in each area throughout the entire country aiming for the avoidance of regional differences. Instead of such a balanced growth strategy, an unbalanced growth strategy should be promoted, that constructs infrastructure with due prejudice on only regions that show the maximum effects of economic development (a region that has a high potential rate of growth), and then promote the next regional development by using the development results of that region as a leverage.

Bearing in mind the issues that were stated in 1), the regions with the following effects can be considered to have a large potential growth rate. For example, the effect of diversification of agricultural production, the effect of market formation that triggers another market supply, the effect of promoting investments by foreign companies and private companies, the effect of location that promote export, industrial agglomeration effects through rearward and forward effects of a certain investment that trigger associated investments or strong "spill over" effects. Moreover, the region has to be advantageous also from the aspect of being able to supply human resources that supports industrial development.

In viewing Viet Nam from these criteria, the region with the greatest potential growth capacity is the southeast area that has Ho Chi Minh City in its center. The next promising region would be the Northern Triangular Zone that has in its center the Red River Delta including Ha Noi and Hai Phong. However, the former, from the early stage of Doi Moi (from the late 1980's to the 1990's) have intensively accommodated public investments, private investments and foreign investments, and became the driving force through the 1990's of Viet Nam's industrial development. (From 1988 to 1998, this region had a 52% share of Viet Nam's authorized direct investment. In 1997 it occupied a 43% share of the industrial output of the entire country). For this reason, from the late 1990's, the Northern Triangular Zone would have been anticipated to be the new growth region. This zone not only connects the capital city Ha Noi with Hai Phong, the third city with harbor, but also has strong external effects, as a neighboring region of the south China economic bloc which has sharply grown (Guangdong, Fujian, Hong Kong and Tai-

wan). Since the south China economic bloc was foremost in rapid development and production cost such as wages increases, the possibility was high that comparative advantages of labor-intensive industries would shift from the south China economic bloc to the Northern area of Viet Nam. In addition, a foreign company would have probably felt it necessary for diversified investments, as excessive direct investment focusing towards China involved excessive risks. With such a background, from the perspective of the division of labor in the south China economic bloc, the northern area of Viet Nam would become one of the most suitable locations for diversified investments. It can be concluded that the Northern Triangle Area is Viet Nam's second largest potential growth region, and is an area that should be prioritized for investment in the latter half of the 1990's.

## 2. Industrial Agglomerations in the northern area of Viet Nam through Capacity Building

Next, the growth through industrial agglomerations as one of the growth strategies will be examined. It is the typical growth strategy model that has been seen in Asia. "Industrial Parks" are built, and through capacity building of the development of physical infrastructure and institutions, the conditions are satisfied that would attract "anchor companies". The anchor companies enter the industrial parks, and associated companies such as the parts industry follow them, and then an industrial agglomeration is created around the industrial

parks. This in turn results in the growth of the macro-economy and contributes to poverty reduction. Such case was witnessed in the northern area of Viet Nam.

The well-known industrial parks of Northern Viet Nam are; Thang Long Industrial Park in Hanoi, and the Nomura-Hai Phong Industrial Zone in Hai Phong. The development of "National Highway No.5" that links Hanoi and Hai Phong and the rehabilitation of "Hai Phong Port" as a part of capacity building became the key. In terms of institutional development, the streamlining of investment procedures is crucial. Thus, capacity building through the development of physical infrastructure and institutional reforms, became the prerequisite for attracting foreign investment. The decision by Canon to begin production of printers for export, became the catalyst for the industrial agglomerations of the northern area of Viet Nam. In other words, Canon performed the role as the "anchor company". This role of Canon as the "anchor company" was called "Canon Effect".

Since the completion of physical infrastructure construction and institutional development and from the aspect of systems in the year 2000, industrial agglomerations have spread with industrial parks at their centre. This has produced employment and contributed to poverty reduction.

## 3. Impact on Agricultural Economy

Next, the impact of the development of the National Highway No.5 and Hai Phong Port upon the farm economy of the regions along the National Highway No.5 will be examined. The enlargement

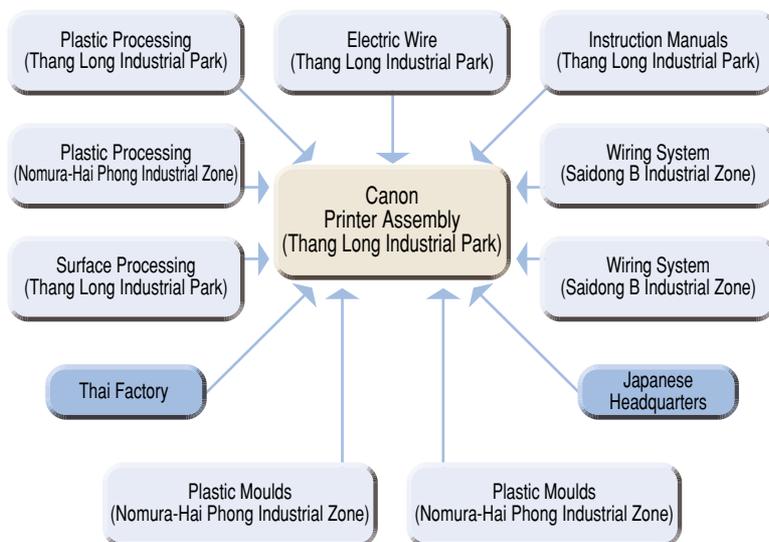


Figure 2. Industrial Agglomeration with Canon at its Centre.

of the National Highway No.5 and the rehabilitation of Hai Phong Port, in particular the former is beginning to exert both direct and indirect large impact upon the agricultural and rural economic development of the part of, not whole of Red River Delta region that is second to the southern Mekong River Delta as a grain store region. Especially, in Hai Duong and Hung Yen provinces located halfway between the capital city Hanoi and Hai Phong city, the rapid progress in the structural change of agricultural production and expansion of a new economic activity are conspicuous.

Since the intensive introduction by Viet Nam government of the Doi Moi policy in 1988 in the agricultural sector, based

on a consistent tapping of land and potential labor force, they have implemented a manifold agricultural management that aims for the increase of rural households' income, the creation of employment and management risk dilution and a diversification policy towards crop cultivation and animal breeding. However, despite a large number of farms acknowledging such policies as being useful, they do not have the art of choosing an alternative crop for rice that can promise conversion into money. In addition, they are placed in a situation where there is insufficient production capital, knowledge and technology, and moreover lacking a sales market. The government, in order to seriously drive the agricultural structure reform policy, is under pressure of the necessity to resolve the above issues simultaneously which are faced by farmers. The projects of National Highway No.5 and Hai Phong Port resulted in connecting the production of farms along the highway with markets of, for example, Hanoi City, Hai Phong City and Hai Duong City in which urbanization is rapidly progressing. Moreover, these projects have led to export from Hai Phong Port and opened a kind of breakthrough for conversion to farming based on the marked needs. It can be therefore concluded that the National Highway No.5 and the rehabilitation of Hai Phong Port are exerting an significant impact for speeding up the development of a series of policies "industrialization and modernization of agriculture and rural villages" of the Viet Nam government.

#### 4. Impact on Poverty Reduction in the Rural Areas

Finally, the poverty reduction impact in rural village areas will be examined. According to data of income and poor household economic ratio of the two cities (Ha Noi and Hai Phong) and two provinces (Hung Yen and Hai Duong) located along the National Highway No.5, rapid growth and poverty reduction that exceeds the national average can be observed.

Such changes were caused by the changes in structure of the economy that occurred in those regions. Particularly in case of Hung Yen and Hai Duong provinces, the expansion and diversification of the economic opportunities in the rural village areas have worked out. The reason for such changes is the structural change in the rural village brought by the development of National Highway No.5, specifically, the spread of urbanization and subsequent expansion of new economic activity, as well

as the structural change of the agricultural product market brought by the change in distribution structure.

Table 1. Comparison of the growth rate and poverty reduction rate of each province in the Red River Delta region

	Location	Annual eEconomic growth rate per capita (%) 1995-2000	Reduction rate of poor household (%) 1998-2000
Ha Noi	A	6.9	61
Hai Phong	A	4.2	40
Hai Duong	A	6.0	42
Hung Yen	A	7.6	23
Bac Ninh	B	8.8	44
Vinh Phuc	B	11.9	46
Quang Ninh	B	5.1	32
Ha Tay		5.4	42
Ha Nam		5.7	18
Nam Dinh		4.1	27
Tay Binh		4.2	4
Ninh Binh		5.0	44
Thai Nguyen		2.3	34
Phu Tho		5.3	39
Bac Thuan		4.7	37
Red River Delta Regional Average		6.1	35
National Average		5.7	27

N.B. The top five provinces of both headings

A: Provinces located along National Highway No/5

B: Provinces that are connected with Ha Noi, Hai Phong Port by other National Highways.

Source: General Statistics Office of Viet Nam

Table 2. The changes in income structure in surveyed household

(%)	1997	2002
Stockbreeding	24.6	21.7
Fishery	11.7	15.9
Handicraft	5.1	5.5
Commerce	7.0	12.1
Real Estate	0.3	1.2
Factory Labor	1.8	5.9
Remittance	0.5	1
Other	9	12.8
Agriculture	39.9	23.9
Total	100	100
(1million dong)	1,526	3,528

Source: Household Survey of 200 rural village households in the provinces of Hung Yen and Hai Duong (March-April 2003)

### 3. Recommendations

Based on the foregoing examinations, lessons learned and recommendations shall be extracted and, as a result of the comprehensive evaluation of the completed transport infrastructure projects of the northern area of Viet Nam, considerations will be made as to what types of efforts should be added in order to enhance the effects of poverty reduction.

## 1. The Importance of "Capacity Building" and "Participation" in Development Strategy

The importance of "capacity building" and "participation" in development strategy can be illustrated with the development experiences of the northern area of Viet Nam. Firstly, in capacity building, it is only after the development of physical infrastructure and institution that industrial agglomerations start. Secondly, for both to be developed, the participation of various economic players are indispensable. The economic players that participated in the development of the northern area of Viet Nam were including, but not limited to, the followings: (1) International Organizations: World Bank, Asian Development Bank (2) JBIC, JICA (3) Private companies: trading firms, securities houses (4) Viet Nam central government, local government (5) public development aid organizations of Korea and Taiwan. The industrial agglomerations of the northern area of Viet Nam have spread through the participation of such private, governmental, international and ODA organizations. Such a case would become a reference for future development.

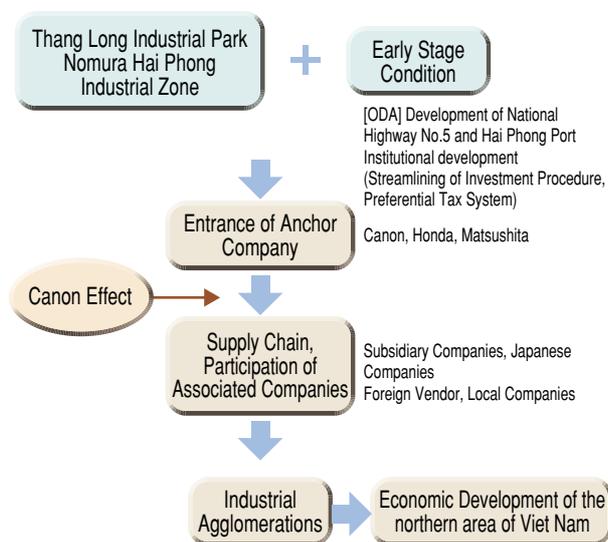


Figure 3. Economic Development Model of Viet Nam's Growth

As indicated in Figure 3, even in the northern area of Viet Nam, the growth strategy model that is typical in Asia can be observed. In Thang Long Industrial Park and Nomura Hai Phong Industrial Zone, the physical infrastructure of National Highway No.5 and Hai Phong Port and the institutional development relating to investment, namely "capacity building" existed first, and then Canon as an "anchor company" entered and industrial

agglomeration of companies relating to Canon progressed. This industrial agglomeration has promoted the growth of the macro-economy and contributed to poverty reduction. This process started in the year 2001.

## 2. Securing Sustainable Income Growth Opportunities

In the regions along the National Highway No.5 after its expansion, the most apparent change, especially among of the economic and social influences in rural villages, is not the employment increase by foreign companies along the highway, but rather the expansion of local markets resulting from the urbanization of the surrounding rural villages. Taking advantage of the new economic opportunities resulting from the highway expansion construction, establishment of foreign companies, and subsequent population influx, the inhabitants of rural areas raised their income for the short-term. The creation of systems to promote and support this new economic activity is the issue to be addressed for the short-term. In rural villages of Viet Nam, the low interest rate loan by "Vietnam Bank for Agriculture and Rural Development" and social trust funds have boosted these new economic activities by inhabitants of the area. Besides financing, activities such as vocational training are desired in future.

However, for the sustainable medium to long-term income increase and poverty reduction for the inhabitants in peripheral region, the increase in employment opportunities of the companies established around the highways is crucial. The policy efforts that assure the generation of industrial agglomerations would be necessary by means of the influx of labor-intensive type foreign companies and the establishment of their supporting industries (In 10 year socio-economic development strategy for 2001-2010, the goal is indicated to reduce the share of rural village labor force from 63% in 2001 to 50% by the year 2010.). On the other hand, to increase the quality of labor force in the future, expanding education for the poor class is also necessary.

## 3. Action towards Urbanization

In response to the rapid increase in road traffic accident resulting from the increase of traffic volume in the national highways, the enlargement of road width and population influx, policies such as supplementary development of infrastructure,

transportation management systems and comprehensive traffic safety education are urgently required. In the short-term, the development of socio-economic infrastructure that supports the urbanization of areas and companies along National Highway No.5 is required. Especially the population influx from other regions would result in increasing the demand for health care/medical services and the expansion of education (particularly higher education).

As the medium to long-term issues to be addressed, the action shall be taken towards the deterrence of further expansion of economic difference between urban and rural areas. The initiatives of poverty reduction policy including a safety net would be necessary. In implementing poverty reduction planning, decentralization is essential in order to undertake the exact targeting of the poor and efficient supply of social services. (The World Bank has criticized that the poorest class cannot sufficiently access the poverty reduction programs organized by Vietnam Bank for Agriculture and Rural Development etc.). The system of such social service supply including human development and the securing of financial resource for this (for example, utilization of tax revenue from foreign investment and transfer of authority to the provincial level) are important issues.

#### **4. Increasing Efficiency of the Agricultural Product Distribution Structure**

Until now, the expansion of local markets for agricultural produce has spread because of the urbanization of the area along the highway, leading to the rise in income of rural households. The short-term issue is the participation of the poor class in the agricultural product market. The rise in access opportunity to the markets of agricultural produce for rural households who live in the regions far from the highway is an important issue, and therefore, the development of feeder roads is necessary. From a medium to long-term perspective, it is desired that efficient agricultural product distribution structure be established aiming for not only the supply towards regional cities along the highway, but supply to large city zone markets of Ha Noi and Hai Phong. Through development of market environment (such as cargo-collection facilities and the establishment of wholesale markets etc.) of regions that have the potential of becoming “hubs” for physical distribution (for example, the junction of Highways No.5 and No.39 in Hung Yen

province or the junction of highways No.5 and No.183 in Hai Duong province), efficient collection of the agricultural produce from remote regions and shipping to regional cities along the highways and metropolitan zones would be possible. In addition, through the market development in Ha Noi and Hai Phong (Presently a public wholesale market for agricultural and fishery produce does not exist in Ha Noi), the development of an environment is required that enables the demand increase in agricultural product in urban areas to efficiently link with production and distribution systems.

Furthermore, the establishment along the Highway No.5 of the export-orientated food processing companies that are currently focused in the southern part of Viet Nam would expand the supply ends for the local agricultural products. Generally, the assistance for technology, infrastructure development (especially irrigation) and marketing would be further required for the establishment of a stable supply system for agricultural products with strict standards in quality and safety for export.

#### **5. Conclusion**

The selection of National Highway No.5 Improvement Project and the Hai Phong Port Rehabilitation Project was regarded as relevant as stated above from the view of developmental background of Viet Nam. The comprehensive conclusions can be summarized as follows:

Firstly, from around the year 2000, the economic development within the provinces of Hung Yen and Hai Duong where Highway No.5 extends, showed better results than the other provinces of the northern area. The increase of income per capita is conspicuous, due to the diversification of agricultural products, the promotion of access to the large markets of Hanoi, the increase of foreign direct investments, advanced industrial structures. Secondly, as a result of the rehabilitation of Hai Phong Port, the freight handling volume at the port rapidly increased. It can be commented that not only the companies in Nomura Hai Phong Industrial Zone in Hai Phong but also foreign companies in Thang Long Industrial Park and around Hanoi have frequently used the Hai Phong Port, thereby increasing foreign direct investment and lubricating industrial activities and export/import. Therefore, the port rehabilitation project has contributed to the economic development of northern area of Viet Nam.

Thirdly, there are two points that need to be given due attention. The first point is that, since both projects have only just been completed, it is difficult to fully evaluate their impact at this current stage. In future, for example in five years time, it would be appropriate to reevaluate the effects. Moreover, since it is difficult to evaluate the effect of economic development at one region by addressing only one infrastructure project, although this evaluation report largely achieved satisfactory results, there still remains room for improvements. In future, evaluation methods will be further improved for reevaluation, thereby more accurate and persuasive conclusion will be expected. The second point for attention is that, in order to increase the effects of poverty reduction, there is necessity to invest not only the large-scale projects as evaluated in this evaluation, but also smaller projects additionally. For example, further construction of many rural roads needs to be undertaken so that rural households can access the arterial roads. Moreover, without the rise in the standards of education and culture of the rural villages, the poor class would not be able to enjoy the economic opportunities resulting from the large scale infrastructure projects.

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## **Summary of Evaluation Projects (produced by JBIC)**

### (1) National Highway No.5 Improvement Project

Section	(1)	(2)	(3)
Project Outline	Detailed planning, rehabilitation construction, width enlargement construction, bridge rehabilitation construction and consulting service. 1st section area (0-47km), 2nd section area (62-93km), 3rd section area (93-106km)		
Loan Agreement	January 28, 1994	April 18, 1995	March 29, 1996
Loan Amount	¥8,782 million	¥5,470 million	¥6,709 million
Disbursed Amount	¥8,168 million	¥5,281 million	Not complete
Interest (%) pa	1.0	1.8	2.3
Repayment Period (Grace Period)	30 years (10years)	30 years (10years)	30 years (10years)
Executing Agency	Ministry of Transport of Viet Nam		
Completion Date	January 1999	January 1999	June 2000
Final Disbursement Date	February 2000	March 2003	Not complete

NB: 47-62km area section constructed by Chinese (Taiwan) loans

### (2) Hai Phong Port Rehabilitation Project

Section	First Phase	Second Phase
Project Outline	Civil work (Rehabilitation of the port facility) Procurement of tug boats / container cranes Consulting service	Civil work for port development (berth, water way) Procurement of loading/unloading facility ( container crane etc.) Consulting service
Loan Agreement	January 28, 1994	March 29, 2000
Loan Amount	¥3,975 million	¥13,287 million
Disbursed Amount	¥3,740 million	Not complete
Interest (%) pa	1.0	0.75
Repayment Period (Grace Period)	30 years (10 Years)	40 years (10 Years)
Executing Agency	Viet Nam National Maritime Bureau	Ministry of Transport of Viet Nam
Completion Date	August 2001	Under implementation
Final Disbursement Date	February 2002	Not complete