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**Aid Effectiveness to Infrastructure:
A Comparative Study of East Asia and
Sub-Saharan Africa**

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**Aid Effectiveness to Infrastructure:
A Comparative Study of East Asia and
Sub-Saharan Africa**

Vietnam Case Study

Tran Van Tho
Waseda University

Yoko Koseki
JBIC Institute

with the collaboration of
Duong Duc Ung
ODA expert, Hanoi

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Acronyms and Abbreviations

ADB	Asian Development Bank
AFD	Agence Française de Développement
BME	Benefit monitoring and evaluation
CPMU	Central Project Management Unit
CPRGSP	Comprehensive Poverty Reduction and Growth Strategy Paper
CPRSP	Comprehensive Poverty Reduction Strategy Paper
FDI	Foreign direct investment
HEPRP	Hunger Eradication and Poverty Reduction Program
IECDF	International Economic Cooperation Development Fund
JBIC	Japan Bank for International Cooperation
KEI	Katahira and Engineering International
MARD	Ministry of Agriculture and Rural Development
MOF	Ministry of Finance
MOT	Ministry of Transport
MPI	Ministry of Planning and Investment
NH5 Project	National Highway No. 5 Improvement Project
NH10 Project	National Highway No. 10 Improvement Project
ODA	Official development assistance
OECF	Overseas Economic Cooperation Fund
PMU	Project Management Unit
PPMU	Provincial Project Management Unit
RIS Project	Rural Infrastructure Sector Project
RRMU	Regional Road Management Unit
SAPS	Special Assistance for Project Sustainability
TCQM	Transport Construction Quality Control and Management Bureau
TEDI	Transport Engineering Design Incorporated
TIPHACO	Tien Phat
VCP	Vietnam Communist Party
VRA	Vietnam Road Administration
WTO	World Trade Organization

1. INTRODUCTION

Among contemporary developing countries with transition economies, Vietnam has so far shown itself to be one of the successful cases in terms of economic growth and stability witnessed during its transition and development process. In Vietnam, a reform strategy (for the transition from a socialist system to a market economy) was adopted in late 1986, and reform measures have been comprehensively implemented since 1988. After several years of trial and error, since the early 1990s, the Vietnamese economy has shown fairly good growth performance. From 1993 to 1997, the average annual growth rate was 8.5%. Under the impact of the Asian financial crisis, the economic growth of Vietnam slowed down, but on an average, it continued to stay in the range of 5%–6% per annum for 1998–2001. The growth rate recovered to 7.5% per annum in 2001–2005 and has accelerated to more than 8% in recent years (2005–2007). In terms of macroeconomic stability, Vietnam also displayed good performance. Consumer price indices declined from three-digit to two-digit figures in 1989 and have further declined to one-digit figures from 1996 onward. The exchange rates of the Vietnamese dong have mostly been stable since the mid-1990s. Efforts have also been made toward poverty reduction. The ratio of the population under the poverty line (as defined by the World Bank) declined from 58% in 1993 to 37% in 1998 and 20% in 2004.

This fairly good performance by Vietnam can be attributed to a number of factors. One major factor is the government's strategy to promote the inflow of foreign resources, which enables the expansion of investment and provides expertise to facilitate the reform process. Since 1993, official development assistance (ODA) and other resources from advanced countries (mainly Japan) and international financial institutions have been allocated to Vietnam on a steady basis. This has not only facilitated the construction of infrastructure and provided intellectual input for further reforms but also reduced uncertainties in the investment atmosphere of Vietnam. Such concessional financial resources have been effective in the sense that they have been followed by a substantial inflow of foreign direct investment (FDI), which has stimulated growth and directly and indirectly reduced poverty.

This paper attempts to analyze and assess the role of ODA in the development and transition process of the Vietnamese economy. Positive impacts of ODA, particularly

ODA's contribution to poverty reduction, have been confirmed by a number of studies.¹ In this paper, we adopt a new approach, which focuses on institutional factors in the processes of selection, planning, and implementation of ODA projects. Specifically, the interplay among institutions and actors involved as well as the changes and improvement in such interplay in the implementation process will be hypothesized as major determinants of the success of such projects. The success of ODA projects can also be viewed from a broader perspective. The experience of project A can spill over to the implementation of project B. In that sense, the management of data and other documents of completed projects is also an important point to be considered.

The remainder of the paper is organized as follows: Section II provides a background of the issues on the role of ODA in the Vietnamese economy and discusses the methodology adopted in this paper to analyze those issues. Sections III and IV analyze one ODA project each, which have been selected for case studies. Section V highlights the fact findings from the two case studies, which focus on how institutional factors have affected the performance of ODA projects.

¹ A few examples of such studies are the JBIC (2003) and GRIPS Development Forum (2006) on the Highway No. 5 Project, which is one of the main case studies analyzed in this paper. Ishikawa (1990) is indicative of the role of ODA in the transitional process. According to the approach discussed in this work, one of the conditions for creating a market economy is the development of physical infrastructure such as transportation networks that enable the distribution of goods from one area to another, thus promoting the social division of labor in the economy. Without such physical infrastructure, each area in the country remains an isolated self-sufficient economy.

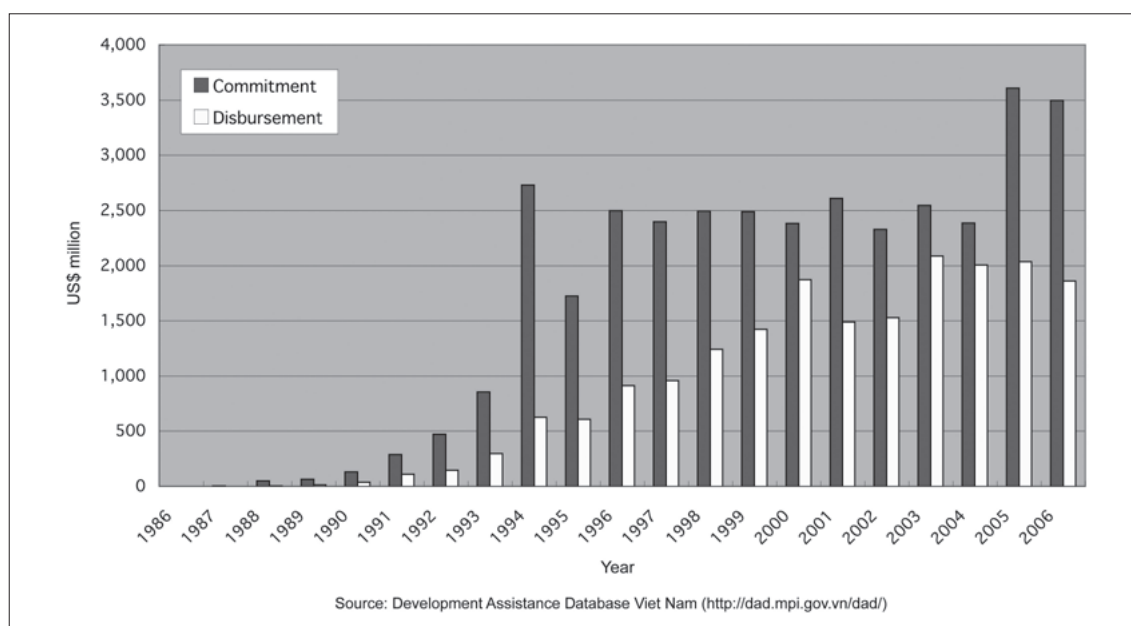
2. BACKGROUND AND METHODOLOGY

2.1 Overview of the position of ODA in the development and transition process in Vietnam

Immediately after the end of the Vietnam War (1975) and the reunification of the country (1976), Vietnam received ODA mainly from the former Soviet Union and several Eastern European countries. Along with the economic depression in these countries and the collapse of the Soviet Union, ODA flows to Vietnam substantially decreased from the 1980s onward and completely stopped in 1991. With the improvement in the international environment with regard to Vietnam, in November 1993, the Donor Conference for Vietnam, with the participation of 22 countries and 17 international organizations, opened in Paris, marking the integration of Vietnam into the world donor community. Since then, the Vietnamese social and economic development strategy has been supported by substantial ODA flows from Japan and other advanced countries and from international financial institutions such as the World Bank, the International Monetary Fund, and the Asian Development Bank (ADB).

In this regard, two major characteristics of Vietnam as an ODA recipient can be observed. First, due to the international circumstances and political environment mentioned above, the ODA inflow, in terms of the number of projects and the amount of commitment and disbursement, suddenly increased in the mid-1990s and has been maintained at high levels since then (Figure 1). From this characteristic, we may hypothesize that Vietnam had to have an initial absorptive capacity in terms of the planning, designing, and management of aid projects, and that the learning experience acquired from early projects spilled over to subsequent projects. These are hypothesized conditions for absorbing large amounts of ODA resources.

Figure 1: Aid to Vietnam



Second, even though the ODA flow has suddenly increased and has been maintained at a high level, its contribution to the national economy has not been very high. As shown in Table 1, the implemented ODA has accounted for a little more than 10% of the total investment in Vietnam. In the five-year economic plans, this share was 11% and 15% in the first and second half of the 1990s, respectively, and 11% in 2001–2005. The shares of ODA in total public investment in 1996–2000 and 2001–2005 were 24% and 17%, respectively. In other words, Vietnam has not substantially depended on ODA as a source of infrastructure. Along with introducing ODA projects, Vietnam has executed a much larger number of infrastructure-related projects with its domestically mobilized resources.

Table 1: Public Sector Investment and Implemented ODA, 1995–2002

Years	State (US\$ mil.)	ODA (US\$ mil.)	ODA/State	ODA/Total Investment
1995	2758	737	0.27	0.11
1996	3888	900	0.23	0.11
1997	4585	1000	0.22	0.11
1998	4902	1242	0.25	0.14
1999	5519	1350	0.24	0.14
2000	5898	1650	0.28	0.16
2001	6452	1500	0.23	0.14
2002	6178	1528	0.25	0.13
Average			0.25	0.13

Note: Here, ODA indicates disbursed amounts.

Source: MPI 2003

However, the role of ODA has been more important than it appears in terms of quantity. Knowledge, management know-how, and international practices acquired from ODA projects may have been transferred to the projects independently financed by Vietnam.

ODA flows also appeared to be effective in the sense that they have been followed by a substantial inflow of FDI. FDI accounted for 25%, 23%, and 17% of the total investment in 1991–1995, 1996–2000, and 2001–2005, respectively. In earlier years, FDI was concentrated in real estate, tourism, and other tertiary industries; however, along with the improvement in transportation networks and telecommunication services and the stable supply of electric power, which have been made possible by ODA flows, FDI in manufacturing industries expanded in subsequent years.²

The largest share of disbursed ODA has been accounted for by electric power, followed by transport and rural development. The projects chosen for case studies in this paper are in the areas of transport and rural development.

2.2 Institutional aspects of ODA projects in Vietnam

Next, let us summarize major organizational and institutional characteristics regarding the decision and implementation processes of ODA projects.

Five ministries or ministry-equivalent agencies in charge of the state management of ODA are the Ministry of Planning and Investment (MPI), Ministry of Foreign Affairs (MOFA), Ministry of Finance (MOF), Office of the Government, and the State Bank of Vietnam. The MPI coordinates among ministries, and between donors and the Vietnamese side. The formation and implementation of an ODA project usually involves the following steps:

First, an ODA project is initiated by the expected beneficiary agencies (local governments and ministries) with the support of donors.

Second, the MPI gathers all requested ODA projects from expected beneficiary agencies, taking into account Vietnam's economic and social development needs (reflected in the socioeconomic development strategy already decided or under preparation) and the conditions pledged by donors, and consulting with donors when

² Even though ODA has accounted for a relatively small share in the total investment (Table 1), its investment trend showed that it tended to encourage FDI. Out of a cumulative ODA (commitment basis) of US\$37 billion acquired by the end of 2006, electric power and telecommunication as beneficiaries accounted for 52%.

necessary. Upon the agreement of the donors, the MPI presents the requested list of projects to the prime minister for approval.

Third, upon the approval of the prime minister, the MPI sends a list of approved projects to the beneficiary agencies.

Fourth, the beneficiary agencies formulate the documents of their projects.

Fifth, the head of the line agencies (ministries or provincial and municipal authorities) to which the beneficiary agency is associated, reviews and approves the project documents.

Sixth, the project owner formulates a schedule and takes the necessary steps for the implementation of the project. According to Decree No. 17/2001/ND-CP (issued on May 4, 2001)³ on the management and use of ODA (which was in force until March 2007), the ministry or provincial and municipal authority was the owner of the project).⁴ The owner commissioned the implementation to an organization called the Project Management Unit (PMU). With the supervision of the owner, the PMU must call for bidding on technical consultation; purchase of equipment, materials and other inputs; and construction.

Seventh, the PMU transfers the completed works to the project owner who is also responsible for the maintenance of the works.

Eighth, the evaluation of the completed project is carried out by the MPI. However, until the promulgation of Decision No. 131/2006/ND-CP (November 9, 2006), which included a clause stating that within three years of the completion of the project, its significance and sustainability must be evaluated, there had been almost no postevaluation of projects owing to budgetary constraints.

The PMU system has been adopted since 1993 to manage the implementation of ODA projects. Currently, there are 700 PMUs in operation. Under this system,

³ Before May 2001, there had been two decrees on ODA projects: Decree 20/CP (March 1994) and Decree 87/CP (August 1997). The Highway No. 5 Project, one of the two case studies analyzed in this paper, was planned and implemented on the basis of these two decrees. However, there was no substantial difference between these two decrees and Decree No. 17/2001/ND-CP (May 2001) in terms of organizational and institutional characteristics.

⁴ According to the new regulations promulgated in March 2007, ministries and provincial and municipal authorities cannot be the owners of projects. Their role must be confined to administration. In this regard, for highway projects, MOT appoints the General Corporation of Highway Construction as the owner.

the owner commissions the entire project to a PMU, including fund management, calling for bids on technical consulting and construction, and management of the full implementation process. Without the effective supervision of the owner or other parties, the PMU can prove to be inefficient and result in a waste of funds. In principle, the PMU is supervised by the owner organization (which is a ministry or a provincial authority in most cases), but managers and directors of PMUs are mainly selected from among ministerial bureaucrats. Consequently, a cozy relationship can develop between a PMU and its owner, such as in the case of the PMU18 scandal in early 2006.⁵ After the scandal became public, the PMU system was revised. On March 12, 2007, the MPI announced Circular No. 03/2007/TT-BKH, which strengthened the role of the project owner and, at the same time, clarified the owner's responsibility. Consequently, the PMU's power was reduced to that of the owner's assisting agent, and its duties were limited to those assigned to it by the owner. However, as for the PMUs in the two projects studied in this paper, no such cozy relationship or other serious problems were witnessed.

2.3 Selection of project cases

In addition to the overall requirements set forth by the Japan Bank for International Cooperation (JBIC) research project, the following criteria have also been taken into consideration in selecting projects as successful case studies in Vietnam. First, the management body of the project, that is, the PMU, must continue to exist; otherwise access to documents and the people to be interviewed would be extremely difficult. Second, the quality of the PMU is also crucial. Quality, in this context, refers to the quality of the managers and administrative system of the PMU. In PMUs having high quality, the documents of the completed projects are well organized and carefully preserved for future reference.

In this study, two projects were selected for investigation: the National Highway No. 5 Improvement Project (hereafter, NH5 Project) and the Rural Infrastructure Sector Project (RIS Project). The analysis of documents and the results of our field surveys on these projects will be presented in Sections III and IV, respectively. NH5 was the first large-scale ODA project that was successfully implemented in Vietnam. In the meantime, the project was considered "successful" in the sense that it was completed as scheduled and, judging from secondary sources of information, it met major targets set out before the implementation of the project. Completed in 2000, the

⁵ In this case, PMU18 wasted funds without the supervision of the owner and transparency. Wasteful and illegitimate expenditures included offers of more than 100 high-class cars to bureaucrats of MOT.

NH5 considerably reduced the travel time between Hanoi and Haiphong, the third-largest city in Vietnam. In terms of economic impact, as will be noted in more detail later, thanks to the construction of NH5, which stimulated the inflows of FDI and investment by domestic firms, the provinces surrounding NH5 have shown positive economic growth, structural transformation, and poverty reduction.

In the context of NH5, one particular project that will be referred to is the National Highway No. 10 Improvement Project (NH10 Project). NH10 connects Haiphong Port (the largest port in northern Vietnam) and Cai Lan Port (a deepwater port supplementing Haiphong Port) with Ninh Binh Province at the southern end of the Red River Delta. The road measuring 230 km passed through five provinces in the coastal areas of northern Vietnam. The purpose of the project was to improve access for the coastal areas in the Red River Delta to market areas such as Haiphong, by constructing new bridges and repairing roads. This was expected to stimulate development in these areas. Having institutional aspects similar to those of NH5, the performance of the NH10 Project can be suggestive. In addition, since NH10 had been designed and implemented some years later than NH5, we may expect a transfer of experience and technical and management expertise from the NH5 Project to the NH10 Project.

The second main project selected for this study is the RIS Project, which differs from the first project in many respects. While the NH5 and its reference (NH10) were large-scale projects implemented for a single purpose (transportation) and financed by Japan's concessional loans, the RIS Project is a small-scale project that serves multiple purposes and is financed by other donors (ADB and the French government). This project has been selected as a case study in this research because of the following reasons. First, this has been considered a good project in terms of efficient management, and the central management in Hanoi still exists (for implementing other rural development projects), thereby facilitating access to documents, materials, and the people involved in the project. Second, this case provides a good example on the interplay between the central and local governments. In addition, this project is expected to help identify the ownership of the ODA recipient at the local level.

2.4 Main research issues and research approach

The framework paper by Jerve and Nissanke (2008) suggests useful concepts for analyzing the effectiveness of aid, by focusing on the sustainability of the project and on the institutional performance, which can lead to that sustainability. Related key concepts include ownership, human resource development, knowledge transfer, and spillover effect. Keeping in mind these concepts and taking into account the

availability of data and information, in this paper, we will limit ourselves to a number of issues that seem particularly interesting and possible to analyze. The selected issues to be addressed and the methodology adopted to approach these issues can be summarized as follows:

First, was the project selected on a subjective basis and on the recipient's initiative? In other words, it is important to determine whether the project was incorporated in the entire socioeconomic development strategy of the central government or of the local government (the ownership issue). The approach to this issue included intensive interviews with both owners and donors of the project, and a review of documents pertaining to the socioeconomic development plan.

Second, in relation to the ownership issue, the participation of beneficiary agencies (such as local governments and inhabitants) in the project planning stage is also important since it will contribute to the sustainability of the project in the sense that the project can meet the demands of the beneficiaries. In this context, the entry of local firms or local inhabitants in the implementation of the project is also significant since the "local contents" of the implementation are supposed to be based on local needs. The review of related documents and interviews with the people concerned should take these points into account.

The ownership and participation mentioned above can also be discussed in the context of the sustainability of the project. The sustainability of a project depends on two factors. It depends on (1) how the service meets the beneficiaries' demand, which is affected by the participation of beneficiaries themselves, and (2) the organizational and management capacity of the owner and the financial resources allocated for the maintenance of the project. With respect to the second factor, we may hypothesize that the stronger the ownership is, the stronger is the consciousnesses of the recipient to improve the management and organizational capacity for better maintenance of the project.

Third, how was the interplay among government agencies, PMU, and engineering consulting firms? In more concrete terms, what were the problems that occurred in the process of designing and implementation, and how have the people involved responded to those problems? The focus here is on the absorptive capacity of the local side (government agency and PMU) and the transfer of knowledge and technical skill from the foreign side (consulting firms). A similar question can be raised on the relationship between foreign and local subcontractors; that is, to what extent have the management skills, know-how, and other knowledge been transferred from foreign to local subcontractors? These questions are related to the institutional structure and

institutional dynamics of the project.

Fourth, regarding the spillover effects of the studied ODA projects on the recipient country or a region within the country, how was the experience of previous projects acquired and how has the experience and the acquirement of new knowledge spilled over to other projects? The approach to this problem is to see how the documents of the projects have been stored and how they have been made available to those who are planning, designing, and implementing similar projects. One more aspect worth examining is the workplace mobility of engineers and middle-class managers after the completion of the project. The hypothesis here is that new know-how of these engineers and managers could have been transferred to the rest of the sector if they continued to utilize their experience and knowledge.

Our field surveys on the two main projects have focused on these issues.

3. THE NATIONAL HIGHWAY NO. 5 IMPROVEMENT PROJECT (NH5 Project)

3.1 Overview and institutional aspects of the project

Originally, NH5 was a two-lane trunk road measuring approximately 100 km, connecting Hanoi and the gateway port city of Haiphong. This road was used for the transportation of export and import goods that were used as raw materials and products manufactured and consumed in northern Vietnam. It is the most important road for sustaining economic and social activities in this region. The renovation work on this road was funded by the national budget and first started in 1987. Owing to a lack of funds, however, repair work could be completed only for 9.7 km in five years and was completely discontinued in 1992. Given the importance of NH5 for maintaining and accelerating the economic and social activities of this region, the Vietnamese government continually attached the utmost priority to the renovation project of NH5.⁶

In 1992, Vietnam requested Taiwan for financial assistance.⁷ However, Taiwan's International Economic Cooperation Development Fund (IECDF) was able to offer a loan of only US\$30 million. Later, upon the request of the Vietnamese government, Japan's Overseas Economic Cooperation Fund (OECF, the predecessor of the JBIC) offered a loan of ¥21 billion (about US\$200 million), and thus, the construction of the entire length of this road was realized. Of the total length of 106 km, a 15-km section (from Km 47 to Km 62) was funded by Taiwan's IECDF. Construction of this section started in October 1993 and was completed and opened for traffic in 1996. The remaining 91-km road section was funded by Japan's OECF, and the project was divided into three packages: Package 1 for Km 0 to Km 47, Package 2 for Km 62 to Km 93, and Package 3 for Km 93 to Km 106. Loan agreements between Japan and Vietnam for the three packages were signed in 1994, 1995, and 1996. The construction of the first two packages started in 1996 and was completed in 1998. Work on Package 3 started in September 1997 and was completed in May 2000 (See Table 2).

The project components included the construction of a four-lane road (partly a six-lane road) and bridges. NH5 passes through two cities (Hanoi and Haiphong) and two provinces (Hung Yen and Hai Duong), which include 10 districts and 55 communes. By the time the project was fully completed, about 370,000 inhabitants had started

⁶ Information on NH5 is based on the Ministry of Transport (2002), JBIC (2003), and the results of our field survey conducted in Hanoi in May and September 2007.

⁷ Until the Donor's Conference for Vietnam held in Paris in November 1993, in many aspects, Taiwan had been virtually the only source of concessional funds for Vietnam.

living along NH5 within a distance of 1 km on both sides.

Table 2: Chronology of the National Highway No. 5 Improvement Project

2.1993	First visit of the OECF Sector Research Mission
3.1993	Second visit of the OECF Sector Research Mission
3.1993	Completion of feasibility studies by TEDI
4.1993	OECF Project Formulation Mission
5.1993	Submission of loan request for FY 1993
5.1993	Loan Agreement (L/A) of IECDF (Taiwan) section (US\$30,000,000)
6.1993	Japanese Government Mission
6.1993	OECF Project Formulation Mission
8–9.1993	OECF Appraisal Mission
11.1993	Donor meeting in Paris (prior notification of ODA loan) (Total ¥52,304,000,000, including ¥8,782,000,000 for VNI-4)
1.1994	Exchange of Notes (E/N) (VNI-4), L/A (VNI-4)
3.1994	Started tendering for consulting service of VNI-4
5.1994	Submission of loan request, including VNII-4
6.1994	Japanese Government Mission for ODA loan
9.1994	OECF Appraisal Mission for ODA loan
11.1994	Prior notification of ODA loan for FY 1994 (Total ¥58,000,000,000, including ¥5,470,000,000 for VNII-4)
1.1995	Contracting consultants (Katahira & Engineers International)
3.1995	Provision of consulting service (Katahira & Engineers International)
4.1995	E/N (VNII-4), L/A (VNII-4)
6.1995	Submission of loan request, including VNIII-4
9.1995	Japanese Government Mission for ODA loan
10.1995	OECF Appraisal Mission for ODA loan
11.1995	Prior notification of ODA loan for FY 1995 (Total ¥70,000,000,000, including ¥6,709,000,000 for VNIII-4)
3.1996	Contracting a contractor for Package 1 (Taisei-Taisei Rotec JV)
3.1996	E/N (VNIII-4), L/A (VNIII-4)
4.1996	Commencement of construction of Package 1
5.1996	Commencement ceremony
9.1996	Contracting a contractor for Package 2 (Fujita/NECCO/CIENCO 1)
11.1996	Commencement of construction of Package 2
8.1997	Contracting a contractor for Package 3 (Sumitomo Construction/CINECOS)
9.1997	Commencement of construction of Package 3
10.1998	Completion of Package 2
12.1998	Completion of Package 1
1 & 8.1999	Conduct of the SAPS study
10.1999	Implementation of supplemental project recommended by the SAPS study
5.2000	Completion of Package 3

Package 1: Km 0~Km 47

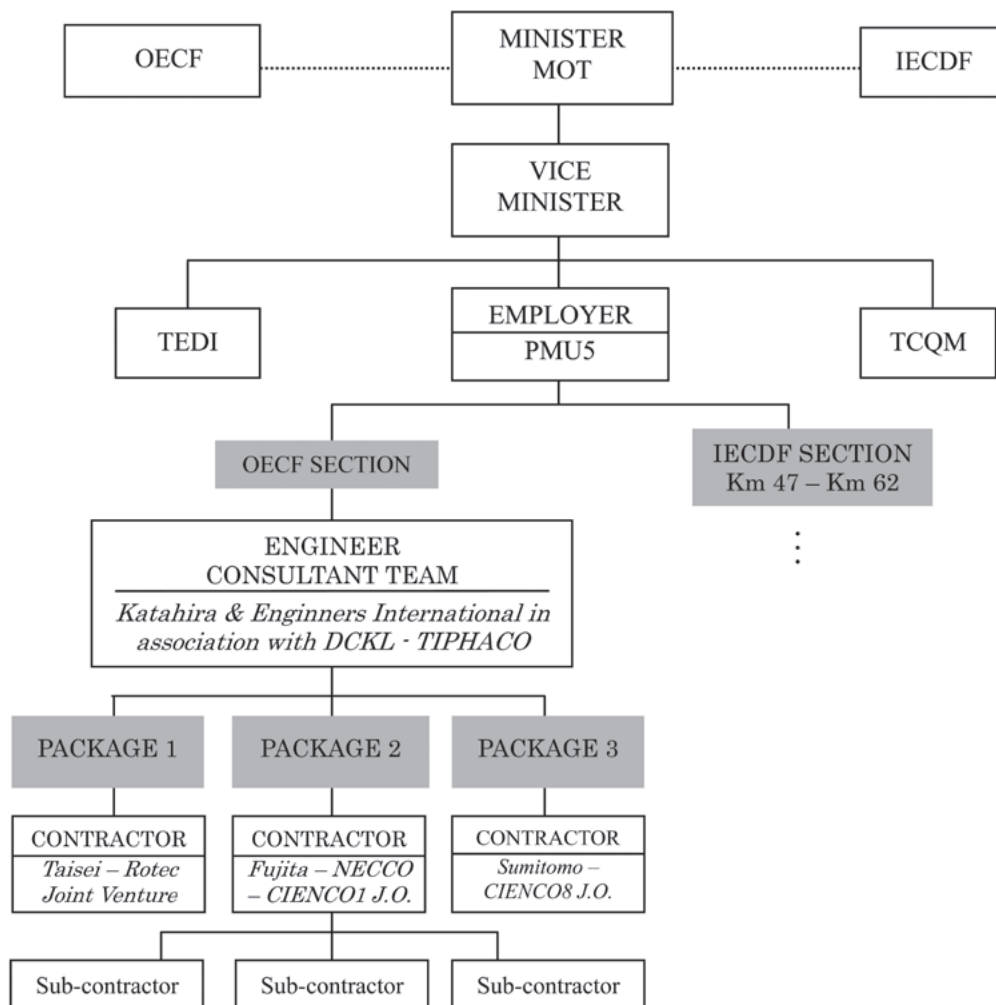
Package 2: Km 62~Km 93

Package 3: Km 93~Km 106

Chart 1 illustrates the organization structure of the NH5 Project. The Ministry of Transport (MOT) is the owner of the project. At the initial stage, Transport Engineering Design Incorporated (TEDI) and the Transport Construction Quality Control and Management Bureau (TCQM) of MOT were involved in the feasibility studies, detailed engineering, and quality control during the construction process. TEDI was set up in 1962 as a body in MOT, and in 1995, it was reorganized into a general corporation having 10 subsidiaries. The roles of TEDI and TCQM in the NH5 Project were limited to the planning and designing stages, and PMU5 was responsible for the implementation of the project. The performance of the project, therefore, depended largely on the capabilities of TEDI and TCQM and the management capacity of PMU5 during the implementation process.

As the project's owner, MOT established PMU5 as the implementing body of NH5. For designing the project and organizing the bidding for construction, TEDI, TCQM, and PMU5 conducted a bidding to hire a consulting firm. Katahira and Engineering International (KEI) and two other firms participated in the bid, wherein KEI emerged the winner. In addition to its technical expertise, the main reason for the success of KEI is that it jointly applied for the bid with Tien Phat (TIPHACO), a local consulting firm. Tien Phat, in fact, was jointly set up by KEI and a former vice minister of MOT. KEI was able to make contact with the former vice minister through a Japanese general trading company, and proposed a consulting joint venture with initial capital provided by KEI. There was no law or government decision facilitating foreign firms to enter into a joint venture with a local partner, but the government, specifically, the owner of the project (MOT), tended to encourage foreign firms to carry out joint operations with local firms. The purpose for this encouragement was to strengthen the capability of local firms through the transfer of technology from foreign firms and by imparting on-the-job training. This point will be discussed in more detail later. With respect to foreign firms, joint operations with local firms provided an advantage in terms of accessing information and understanding formal and informal local practices. In particular, this proved to be advantageous when local firms were state-owned enterprises or firms set up by former leaders of the concerned ministry.

Chart 1: Organizational Chart of the National Highway No. 5 Project



Source: 1996 “Commencement Ceremony for the National Highway No.5 Improvement Project Package (KM0 – KM47) under OECF Loan”

KEI reviewed the engineering details, prepared the tender documents for civil works, and supervised the construction activities. In addition, the consulting team organized by KEI was also in charge of preparing and carrying out all contracts, controlling the schedule, and providing solutions for technical and contractual problems. The consulting team also helped solve social and environmental problems such as land acquisition, and institutional problems such as those arising from the difference in views among related agencies (MOT, PMU5, JBIC, and Provincial People’s Committees).

In consultation with KEI, PMU5 called for construction bids. As noted earlier, except for the part funded by Taiwan, the construction of the NH5 Project was divided

into three packages that had separate construction bids. The call for participation in the international bidding for construction was announced in Vietnam News, the then major English newspaper. The documents and forms for bidding were reviewed by the State Review Committee headed by the chairman of the State Planning Committee (the predecessor of the MPI). On the basis of the report prepared by the review committee, the prime minister approved the documents and forms for bidding.⁸

There were more than 20 applicants to this bidding. An examination committee headed by a deputy minister of MOT reviewed the applications and selected a list of candidates, which was submitted to the prime minister. The prime minister made a final decision on the basis of the results of the final reviews of the State Review Committee.

The joint venture of Taisei and Taisei Rotec won the contract for Package 1; the joint operation of Fujita, NECCO, and CIENCO 1 for Package 2; and the joint operation of Sumitomo and CIENCO 8 for Package 3 (See Chart 1). We observed that the winners of the bids tended to be consortiums of foreign and local partners.

The winning contractors delegated the construction to subcontractors. However, in the cases of CIENCO 1 and CIENCO 8, which are general construction corporations, most subcontractors had their own subsidiaries.

As illustrated in Chart 1, for all the three packages, the successful bidding contractors were Japanese construction firms. After the resumption of Japanese ODA for Vietnam (in late 1992), almost all major Japanese construction firms set up local offices in Hanoi (and some offices were also set up in Ho Chi Minh City) and competed against each other for business. Fujita and Sumitomo, jointly with local general construction firms (CIENCO 1 and CIENCO 8, respectively) succeeded in bidding for the construction of Package 2 and Package 3, respectively. Taisei tied up with Taisei Rotec (an enterprise specializing in road building), which was also a Japanese firm that participated in the bidding for Package 1. Without the joint participation of a local firm, Taisei was put at a disadvantage, at least in terms of information gathering, as pointed out by an interviewee in our survey conducted in July 2007. However, Taisei was finally successful in the bidding due to its low offered cost. The cost offered by Taisei was ¥3.8 billion, compared with ¥4.8 billion offered by the second-lowest bidder, which was also a Japanese construction firm. Eventually,

⁸ From February 7, 2005 (Decision 16/2005/ND-CP) onward, such approvals were decentralized to ministers associated with the projects. Moreover, according to this decision, the ministers or other government authorities who decided on the investment would approve the bidding plan and the results of the bidding.

the construction cost amounted to ¥5.8 billion, and thus, Taisei suffered a huge loss.⁹ The company, however, considered the loss as an initial investment for entering a new market, which was expected to grow rapidly.

While preparing documents to bid for the position of a contractor, construction firms had to decide which firms would be subcontractors and provide such information in the documents. CIENCO 1 and CIENCO 8 used their respective subsidiaries as subcontractors for Package 2 and Package 3, respectively. After investigating 12 local construction firms, Taisei and Taisei Rotec in Package 1 finally selected LICOGI (a firm affiliated to the Ministry of Construction), CIENCO 1 (affiliated to MOT), Bridge Company 12 (affiliated to MOT), and Truong Son (affiliated to the Ministry of Defense) as their subcontractors. Our interviewees in Taisei pointed out that there was no pressure from related ministries, and the choice of subcontractors was therefore made on a competitive basis.

Since its completion, NH5 has been managed by the Road Transport Management and Repairing Co. No. 240 (240 Co.), which is a state-owned enterprise affiliated with the Regional Road Management Unit (RRMU). The RRMU is responsible for the management of national highways and is a division of the Vietnam Road Administration (VRA) of MOT. The VRA is the agency in charge of the management of road transportation at the national level. The 240 Co. undertakes all the maintenance work required for maintaining NH5.

Two depots were set up to undertake maintenance work. One depot was located at Km 23 and covered the stretch from Km 0 to Km 47, while the other depot was located at Km 59 and was responsible for the stretch from Km 47 to Km 93. Two poll booths were set up for NH5 and operated by the 240 Co.

3.2 The sustainability of the NH5 Project

The construction of NH5 has largely contributed to the development of the region between Hanoi and Haiphong. In 2003, the JBIC organized a committee to assess the impact of this project on the development of the area surrounding NH5.¹⁰ According to this assessment, the project has positively influenced the economic and social activities of this region. The improvement of this road stimulated FDI inflows into Hung Yen and Hai Duong, thereby enabling these two provinces to achieve a much

⁹ According to the reference made by the examination committee (with the estimates of KEI), the ceiling cost of construction was set at ¥6 billion.

¹⁰ The committee was chaired by the main author of this paper.

higher growth rate than those located far away from the highway. The background survey for this assessment also indicated that NH5 has substantially contributed to the reduction of poverty in the communes surrounding the highway. The construction of the highway also promoted the development of the market economy in this region, and consequently, traditional products such as vegetables, fruits and other products now have access to the markets in Hanoi and Haiphong. It is also interesting to note that along with the completion of NH5, many households in the area located along the highway established new businesses to exploit this opportunity brought about by market access. As a result of these economic impacts, the sources of income of the surveyed rural households are found to be highly diversified.

On the other hand, a number of problems related to the sustainable use of the road aggravated. The biggest problem was that the specifications of the road could not meet the traffic demands. NH5 was planned as a highway, but in fact, the vehicular speed and traffic volume were at levels suitable for an expressway. Consequently, the number of traffic accidents exceeded the expectations of the planners. From 1999 to 2002, the number increased from 251 to 376, and the number of deaths caused by accidents rose to 41 in 1999 and 49 in 2002.¹¹

Another problem was that as compared to the period prior to the construction of NH5, the inhabitants living nearby were inconvenienced while traveling. They faced difficulties in crossing the highway. These inconveniences resulted from the insufficient consideration of local road networks connected with NH5. The safety of pedestrians, bicyclists, and motorists crossing the highway has been jeopardized since the completion of NH5. In particular, the safety of school children has been a cause for concern. Since there are many schools along NH5, students have to cross NH5 everyday; however, no safety measures have been provided. The planners and designers of NH5 did not formulate a more comprehensive and sophisticated plan for a highway, which took these problems into account. Japan's OECF (predecessor of the JBIC), the donor of the project, in the initial stage of the project, also appeared to focus only on the main purpose, i.e., simply improving transportation from Hanoi to Haiphong. In 1999, about one year before the completion of Package 3 of the project, the OECF commissioned a survey called Special Assistance for Project Sustainability (SAPS) in order to identify and analyze the deficiencies and problems related to the safety conditions on NH5 and introduce measures for enhancing the sustainability of the project. The recommendations by the OECF-SAPS team covered a wide range of issues on traffic safety such as management, operation, and maintenance systems; safety facilities; and the formulation of related laws and regulations. The team

¹¹ MPI and MOFA (2006), pp. 3–78.

also conducted traffic safety seminars and campaigns wherein all related agencies participated. In line with these recommendations, the following supplemental projects were carried out: (a) building or upgrading of 100 km of frontage roads and provincial roads; (b) construction of 44 flyovers and 1 medium span bridge across a river; (c) construction of 1 operation and maintenance office, 1 maintenance station, and 1 traffic emergency station.

The completion of these supplemental projects brought about an improvement in the traffic situation. However, it should be pointed out that the economic growth in the area surrounding NH5 far surpassed planners' expectations. Consequently, the amount of traffic rose so rapidly that it necessitated the construction of a highway that was wider and more sophisticated than NH5. The construction of such a highway that ran parallel to NH5 started in early 2008 and is scheduled for completion in 2013.¹²

In short, NH5 has been sustainable in the sense that it has met the growing traffic demand in one of the most dynamic regions in Vietnam. However, the highway has also encountered problems owing to the insufficient consideration given to the transportation and safety of the nearby inhabitants. In addition, in the planning stage, planners were unable to anticipate the rapid growth in the region's economic and social activities. However, as the first full-fledged large highway to be built in Vietnam, NH5 provided many valuable lessons (both positive and negative) for subsequent projects. We will return to this point in the section that discusses the spillover effects brought about by NH5 to other projects.

3.3 Ownership of Vietnam in the NH5 Project

The significance of NH5 for the development of Vietnam's northern economic triangle has been obvious. This infrastructure project has surpassed the demand of the region's economic activities. This performance stemmed from the fact that the project was an integral part of a long-term comprehensive socioeconomic development plan envisioned by the Vietnamese government. The project was incorporated into the building plan of a transportation network in which NH5 was given high priority.

In June 1991, the National Congress of the Vietnam Communist Party (VCP) announced the long-term economic targets aimed at ending the earlier economic

¹² The feasibility of this new highway was approved by the prime minister in 2004, but due to the difficulty in finding financial resources, it was finally decided that the project would be carried out in the form of BOT (build-operate-transfer), and it started several years later than originally planned.

crisis characterized by low growth, high inflation, and mass poverty.¹³ Along with the subsequent instant recovery of the economy, the Vietnamese government became more confident and set up a high target for economic growth for the second half of the decade. Consequently, the potential demand for sophisticated services of transportation and other infrastructures has been strong.

In the 1991–1995 Social and Economic Development Plan, the Vietnamese government decided to carry out a substantial improvement in NH5 on account of its important position in the northern economic zone. The documents of the Seventh National Congress of the VCP (December 1991) state that Vietnam will “concentrate efforts on the recovery and upgrade of major transportation lines such as national highways No. 1A, No. 5, No. 18, No. 51, No. 10, No. 14....”¹⁴

Out of the public investment planned for 1996–2000, the transport sector accounted for about 25% (about US\$ 4 billion). In order to cope with the demand for transportation services in the northern part of the country, the Vietnamese government signed Decision No. 139/TTg on April 1, 1993 for the Feasibility Study Report of the National Highway No. 5 Improvement Project, which was part of the road transport master plan for up to 2010. The goal of this improvement project was to upgrade the road category from third class to first class.

Prior to the annual Donor Conference for Vietnam, which started in 1993, the Vietnamese government prepared the basic report on the current economic situation and provided a vision for future development, including the needs for infrastructure. An annex to this report included a list of priority projects for which Vietnam requested financial assistance from donors. NH5 was placed first on the 15-page list of the immediate priority projects prepared for the Donor Meeting in 1993. The preparation for the engineering design of this project was already underway, and the Vietnamese government planned to implement the project during 1993–1996.

Thus, prior to receiving ODA, Vietnam had its own socioeconomic development strategy, which clarified the priority areas. In line with this strategy and upon the request of the Vietnamese government for assistance from Japan, a master plan for the transport sector up to 2010 was formulated under the JICA development study scheme titled “the Master Plan Study on the Transport Development in the Northern Part of Viet Nam,” which was conducted during 1993 and 1994. Under the consultation of Japanese engineers, the Vietnam’s “broader development plan” was

¹³ According to the World Bank, in 1993, 58% of the population lived under the poverty line.

¹⁴ Vietnam Communist Party (1991), p. 504.

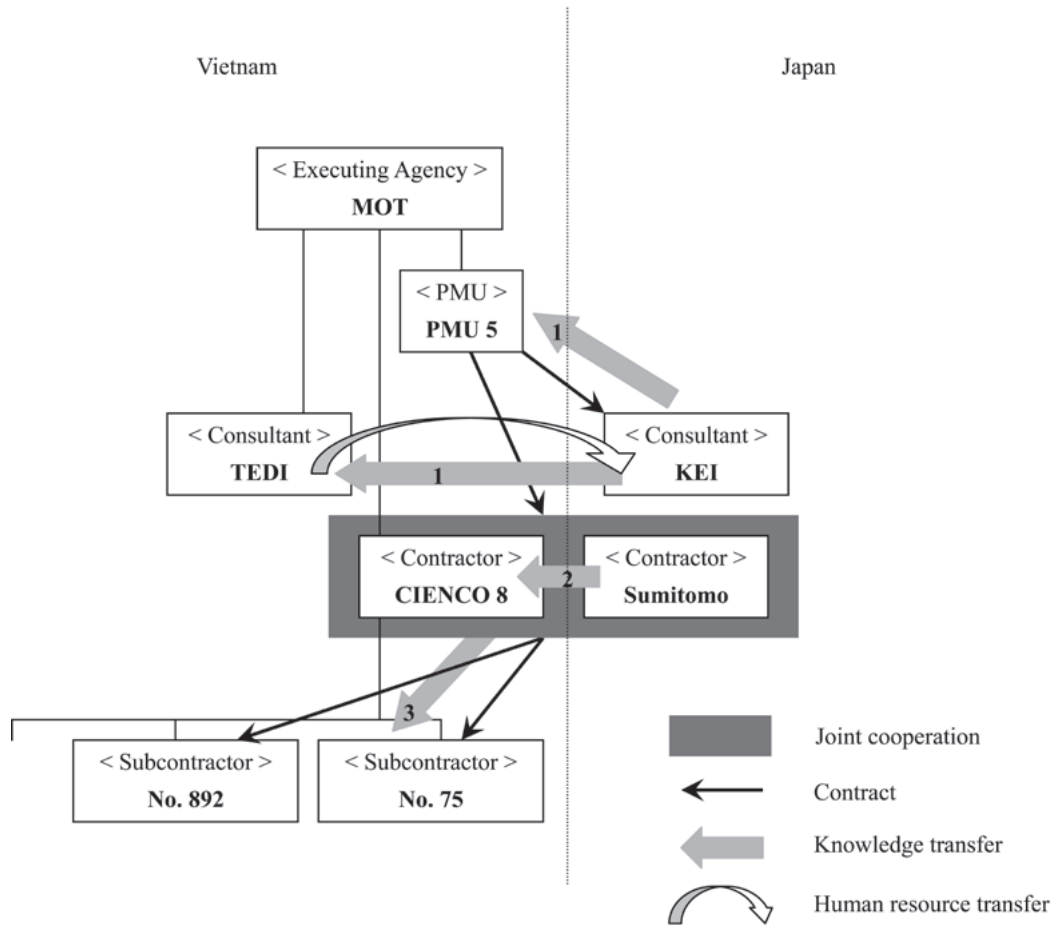
transformed into a more technically feasible “sectoral master plan.” It is noteworthy that the NH5 Project was listed in both plans.

Along with this initiative by the recipient, there was no pressure on Vietnam from the donor in the planning, designing, and implementing processes. NH5 was originally planned by the government, and MOT had an initiative in designing the details of the project. In this sense, the construction of NH5 can be highly evaluated. However, if we broaden the concept of ownership to the grassroots level of beneficiaries of the infrastructure service, there remain a number of problems. As noted earlier, even though NH5 stimulated economic growth and reduced poverty in the region, the daily life of the inhabitants living near the highway was adversely affected due to the inconvenience caused in crossing the highway and the dangers posed by the traffic. In the feasibility study of the project, the planners should have carefully surveyed the inhabitants and incorporated their needs and opinions in the design.

3.4 Transfer of technology and knowledge and human development in the NH5 Project

As suggested in Chart 2, there are three levels of human development and technological and knowledge transfer in the NH5 Project. The first level (arrow 1 in Chart 2) is the transfer of technology and knowledge from KEI to TEDI, the local agency responsible for planning and designing, and to PMU5, the implementing agent of the project. The second level (arrow 2 in Chart 2) is the transfer of technology and knowledge from foreign contractors to local contractors through joint ventures or joint operations. The third level (arrow 3 in Chart 2) is the transfer of technology and knowledge from contractors to subcontractors. The policy and institutional structure affected the channels and performance of these levels of transfer, which in turn impacted the performance of human development in the local agencies or firms.

Chart 2: Three Directions of Knowledge Transfer



With respect to the first level, the human resource development in TEDI is noteworthy. As mentioned earlier, TEDI first conducted feasibility studies of NH5, and KEI reviewed and revised it to meet international standards. Most of TEDI's staff and engineers in the early 1990s were graduates of Vietnamese or former Soviet or other Eastern European universities. They worked under a socialist system and consequently lacked knowledge on the rules and experience on the practices of a market economy; for example, the feasibility study originally presented by TEDI was just a report showing only the scale of budget and major items for expenditure, and it lacked a detailed explanation of the feasibility of factors such as technical and cost conditions. Furthermore, regarding the design standard, the local firms had only applied a local standard called the "Vietnam Highway and Bridge Design Standards" (TCVN 4054-85), which did not meet international standards. The international design standard—the AASHTO highway design standard—was first introduced to the local firms through the implementation of the NH5 Project.

By sending a large number (20–30) of staff and engineers to work temporarily at KEI or by conducting intensive consultation and coordination with KEI, human resources in TEDI have been developed in the areas of planning and designing skills. Institutional improvement also included the insurance of construction works, preferential tax treatment, and the unification of criteria for international bidding. Several years later, during the construction of NH10—the reference project of this study—TEDI further strengthened its human capacity by learning from Nippon Koei, the consulting firm of the NH10 Project.

Thus, KEI and Nippon Koei helped Vietnam to improve its legal and institutional framework for transport construction projects.

In 1993, PMU5 was a unit spun off from the Thang Long Project Management Committee associated with MOT.¹⁵ In the initial stages of the implementation of the NH5 Project, PMU5 had 60 employees (120 employees as of May 2007). Except for those on the board of directors who were mainly on leave from MOT on the basis of tenure, most employees were working on short- or long-term (more than one year) contracts. According to a deputy director, since most employees had previously worked at MOT or other organizations associated with MOT, they had experience in the construction management of transport facilities. However, as in the case of TEDI, the employees had acquired experience under a socialist planning system. In the NH5 Project, the staff and engineers of PMU5 had a chance to learn modern management and practices.

The construction of NH5 was carried out in coordination with a consulting firm (KEI), PMU5, and contractors. KEI and the contractors had monthly meetings, whereas PMU5 participated in such meetings once every quarter, except in extraordinary cases. In addition, PMU5 sent more than 10 engineers and staff to work temporarily at Tien Phat where technical and management skills had been transferred from KEI.

According to interviewees from KEI, Vietnamese engineers and staff were capable in terms of technical specialization, but their management skills, at the time of joining KEI or Tien Phat, were poor. However, they clearly made progress by learning from KEI.

The second level of the transfer of knowledge and skills is from foreign contractors to local contractors and also involves human resource development of the local

¹⁵ This committee was set up in 1970 for managing the construction of Thang Long Bridge.

contractors. At first, let us review the institutional background. According to Article 10 of the Regulations on Tender Decree No. 88/199/ND-CP effective from 1999, foreign contractors participating in international tenders in Vietnam must be associated with a Vietnamese contractor or must undertake to use Vietnamese subcontractors. The Decree No. 66/2003/ND-CP (issued on June 12, 2003) also included similar requirements for foreign contractors (Clause 8, Article 1). Exceptions are allowed only when approved by the prime minister. In 2005, Vietnam promulgated a Law of Bidding, which does not include the requirement to work with local contractors. This was aimed at opening domestic markets in preparation of accession into the World Trade Organization (WTO).

The bidding for the construction of NH5 was conducted before the enforcement of Decree No. 88/199/ND-CP (1999). No formal regulation for bidding practices existed before 1999. However, informally, the Vietnamese government preferred joint ventures or joint operations between foreign and local contractors. In fact, as illustrated in Chart 1, such joint ventures appeared in the cases of Package 2 and Package 3, but not in Package 1.

The reason for which Vietnam required foreign consulting firms and contractors to conduct joint operations with domestic firms was to encourage the participation of local management and staff in the planning, designing, and implementation of the projects. Through joint coordination and close contacts, it was expected that the transfer of technical capability and management know-how from foreign to local firms would be promoted.¹⁶ In the case of Sumitomo and CIENCO 8, for example, in addition to joint management at high levels, they set up a joint operation team comprising 15–20 staff members out of which 4 were from Japan. The team had an office located near the construction site to supervise the implementation and to solve ongoing problems.

Our interviews with TEDI, PMU5, and CIENCO8 confirmed a substantial improvement in the capability of their staff and an increase in the volume of knowledge in their organizations. In the NH10 Project, which had a structure and institutional aspects similar to those of the NH5 Project, many engineers and middle managers who had experience in working with foreign partners were promoted to higher positions in subsequent projects.

¹⁶ Similar discussions also appear in the literature on FDI and technology transfer. Many scholars argue that for promoting technology transfer from multinational corporations (MNCs) to host developing countries, joint ventures are more desirable than wholly owned subsidiaries of MNCs. See Tran (2006) for a discussion of the literature and on the case of Vietnam.

It is interesting to compare the capability of CIENCO 1, CIENCO 4, and CIENCO 8 with CIENCO 5 and CIENCO 6. Even though all of them are general corporations affiliated with the Ministry of Construction, CIENCO 5 and CIENCO 6 were considered as less capable than CIENCO 1, CIENCO 4, and CIENCO 8. The former two were located in the central region where there were few ODA projects, and hence, the opportunities for them to acquire managerial and technical resources from foreign contractors were limited.

The third level of transfer of knowledge, management, and technical know-how is from foreign contractors to local subcontractors. The former must supervise the latter in order to control quality and manage schedule. Let us discuss the case of Taisei as an example. For each subcontractor, Taisei assigned one Japanese staff (Taisei's office in Hanoi at that time had five Japanese engineers and one Japanese administrative staff) to supervise the construction site. In addition, two to three Japanese engineers were assigned to conduct overall supervision for the entire Package 1. Every week, at least one meeting in which all staff (both Japanese and Vietnamese) participated was held to examine the construction process and identify the problems to be solved. According to the then deputy director of Taisei's office in Hanoi, because of the collaboration with Japanese engineers and staff, the capabilities of Vietnamese counterparts had been substantially improved, especially in the field of management. As in other cases in the NH5 Project, the transfer to local staff, quality control, and quality management were particularly emphasized.

One institutional characteristic of Vietnam is the existence of general corporations in which the holding company has many subsidiaries. CIENCO 1 and CIENCO 8, the local contractors in Package 2 and Package 3, respectively, are general corporations. As noted earlier, they tended to use their own subsidiaries as subcontractors except in cases where their subsidiaries could not offer the necessary technical capability. This practice results in a vertical intrafirm transaction between the contractor and subcontractors. This characteristic tended to save transaction costs; however, it may have limited the spillover effects of knowledge and technology to the entire industry. It is difficult to estimate the net benefit of this vertical transaction. However, since the quality and capacity of subcontractors have also been considered in the review of application documents for the construction bids, the vertical transaction does not seem to have negatively affected the performance of the project.

3.5 Spillover effects from the NH5 Project

NH5 is the first project in the area of infrastructure construction in Vietnam in which an international bidding form (prepared by FIDIC, the International

Federation of Consulting Engineers) was used. For the first time in Vietnam, the application of technical standards was supervised by international consultants, and new construction management methods and disbursement procedures were adopted. Construction technology and new construction materials were also applied. As seen in the previous subsection, the transfer of knowledge and know-how from foreign firms to local organizations and firms were conducted through various channels.

If the new knowledge and skills acquired in planning, designing, and implementing processes had spilled over to the rest of the sector, the outcome of the ODA project would have been very substantial. The spillover effects depended on two channels: the storage of and easy access to documents of completed projects and the movement of knowledge and skills of engineers and administrative staff from old to new projects.

The State Archives Ordinance promulgated on April 4, 2001 prescribed rules for the preservation of documents according to agencies and project types. For the NH5 Project, which had been implemented before the promulgation of the State Archives Ordinance, the preservation of documents was based on the decisions of the government or the prime minister.

The Technical Office of TEDI is responsible for the storage of the documents pertaining to the project's design. In MOT, each bureau stores the documents for a certain period and then relocates them to the ministry for storage. After a certain period, depending on the type of document, the ministry relocates them to the State Center on Archives.

People responsible for ODA have usually referred to these stored documents when designing a new project or preparing documents for financial or other negotiations with the donors. Documents of old projects are also useful for new projects with similar features. NH10 wisely referred to the experience acquired during the construction of NH5 for resolving technical problems concerning soft or muddy land in some sections. On the other hand, the learning experiences of NH5 were also useful. In the design stage of the NH5 Project, the planners and designers did not carefully consider the issue of traffic safety, as a result of which many traffic accidents occurred and inconvenience was caused to the inhabitants living near the highway. In the feasibility study for the NH10 Project, TEDI and the donor referred to the experience acquired during the development of the NH5 Project, thus improving the outcome of the NH10 Project.

With respect to the second channel of spillover effects, unfortunately, we have been unable to gather enough information; however, the following observations can be made.

First, as seen in the case of general construction corporations (for example, CIENCO), the transfer of skills and knowledge tended to occur within the firms (intrafirm transfer). As noted earlier, the relatively weak capability of CIENCO 5 and CIENCO 6 in the central region as compared with CIENCO 1 and CIENCO 8, which participated in the construction of NH5, suggested that inter-CIENCO transfer of know-how had not occurred. Intensive interviews with Japanese consulting and construction firms as well as with PMUs suggested that the inter-PMU (horizontal) movement of knowledge and skills had also not been significant. The weak horizontal spillover effect may have stemmed from problems in the labor market (lack of information on demand, high cost of movement, etc.). Second, in Vietnam, PMUs are not dissolved after the completion of projects, whereby skills and experience accumulated from the old projects can be utilized in the new projects. Similar accumulations in TEDI and CIENCO have also shown the same effects. Before the introduction of large-scale ODA projects, TEDI, PMU, CIENCO, and other local organizations and firms only handled small-scale domestic projects, which did not require sophisticated management. With the design and implementation of such large-scale projects as NH5, they benefited from the transfer of management skills from foreign consulting and construction firms. Improvement in management was the most significant learning for them. On the level of human resources, many Japanese interviewees pointed out that Vietnamese engineers and administrative staff were very capable in terms of scientific knowledge but they lacked managerial skills and experience in working in a market economy. These vertical spillover or interproject dynamics appeared to characterize the pattern of resource development in the implementation of ODA projects in Vietnam.

4. THE RURAL INFRASTRUCTURE SECTOR PROJECT

4.1 Overview of the project and hypotheses on the performance

Along with a growth-oriented reform strategy, Vietnam adopted some public safety net programs to target the more difficult segment of the population to help them participate in the development process. After having emerged haphazardly since the late 1980s, in 1998, these programs were consolidated into one national poverty countermeasure program called the Hunger Eradication and Poverty Reduction Program (HEPRP). A portion of ODA funds was allocated to this program.

One such case is the RIS Project in which the main donor is the ADB. Since the ADB's policy was to provide up to 70% of the required funds, Vietnam requested the assistance of Agence Française de Développement (AFD), a French governmental organization, and encouraged the participation of local governments and beneficiaries. The total budget of US\$150 million was shared by the following donors and contributors:

ADB: US\$105 million (loan)

AFD: US\$15 million (loan)

Local governments (of 23 provinces): US\$15 million

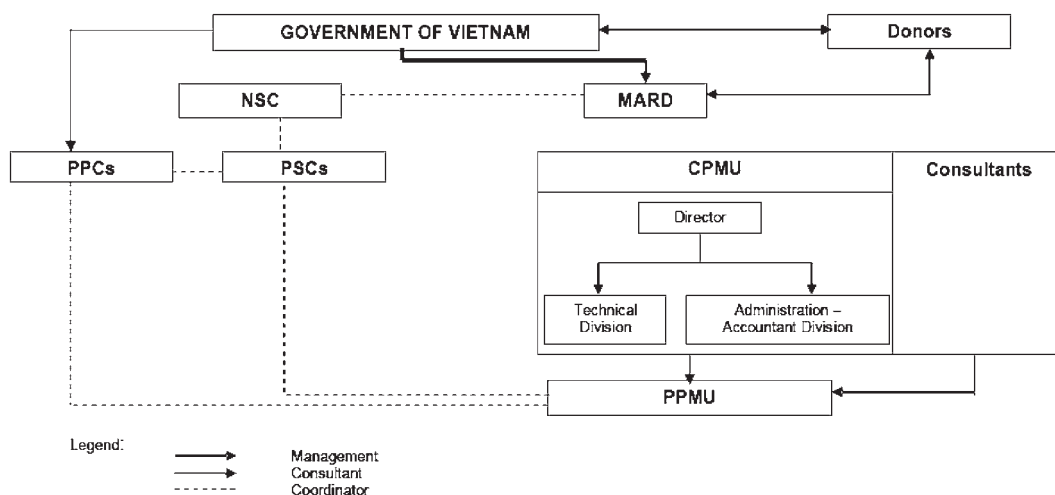
Beneficiaries: US\$15 million

The project targeted 23 (out of 56) provinces that were considered particularly poor and had a small per capita ODA. It was implemented over six years from April 1998 to December 2004.

The executing agency was the Ministry of Agriculture and Rural Development (MARD). Direct management had been conducted by the Central Project Management Unit (CPMU), which was set up by MARD, but its board of directors consisted of deputy ministers from MARD, MPI, and MOF, and the deputy governor of the State Bank of Vietnam. The CPMU was responsible for the administration, finance, benefit monitoring and evaluation (BME), and other matters pertaining to the coordination of the project implementation in the 23 participating provinces. The CPMU was located in MARD's campus and consisted of 20 full-time staff members (nearly half this number is accounted for by engineers or technicians). The project implementation in each participating province had been carried out and managed by a Provincial Project Management Unit (PPMU) with a staff of about eight.

Charts 3 and 4 illustrate the general structure of the project and the organization of the CPMU, respectively.

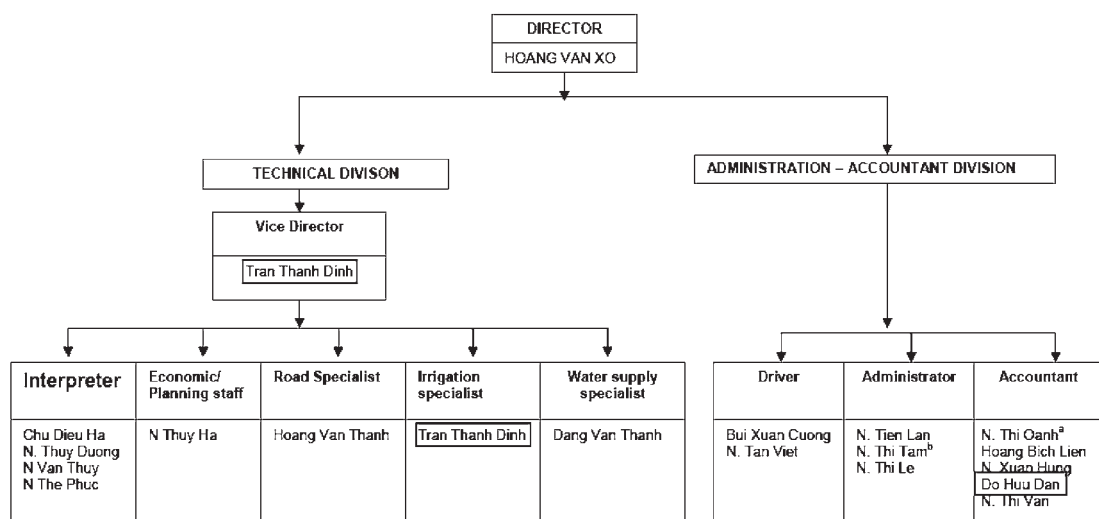
Chart 3: Project Management Structure of the Rural Infrastructure Sector Project



CPMU = Central Project Management Unit, MARD = Ministry of Agriculture and Rural Development, NSC = National Steering Committee, PPC = Provincial People Committee, PPMU = Provincial Project Management Unit, PSC = Provincial Steering Committee

Source: ADB (Sep/2006) Completion Report “Socialist Republic of Vietnam: Rural Infrastructure Sector Project”

Chart 4: Organization Chart of CPMU



Note: ^aHead of Accountant
^bStore Keeper

Source: ADB (Sep/2006) Completion Report “Socialist Republic of Vietnam: Rural Infrastructure Sector Project”

The CPMU called for bids in order to hire a consulting firm that would assist in technical and financial management as well as help in the preparation of bidding documents for contractors and of evaluation reports. The consulting firm was also responsible for the organization of various training courses (on planning, technical and financial management, techniques of calling for bidding, computer application, etc.) for the PPMU staff. The consortium comprising Landdell Mills, Sinclair Nymers, and NIAP won the contract as a consulting firm for the CPMU. Moreover, the CPMU also asked the Institute for Agricultural Planning to serve as a domestic consulting body to assist in solving specific domestic issues.

The purpose of this project was to enhance economic development and effect poverty reduction in rural areas. The major contents of the project include the building of new or the improvement of existing infrastructure facilities, improvement of productivity and diversification of agricultural products, and improvement of health and nutrition. For meeting the targets pertaining to these areas, the project contained three components:

1. Rural civil works: Four areas included in rural civil works are the rehabilitation and upgradation of rural roads (roads between communes and between communes and district centers and roads connected to the national transport network), rehabilitation and upgradation of small-scale irrigation systems, safe drinking water supplies, and the establishment of markets. Rural roads absorbed approximately half the total budget of this project.

2. Project management: This included hiring personnel to manage and implement the project, organizing training courses, facilitating smooth communications among parties involved, etc. The project also funded consulting services to assist with the physical designing of subprojects and with reporting procedures.

3. Subproject preparation assistance: This involved financing the recruitment of consultants (national or provincial) to assist provinces in preparing or finalizing subproject proposals.

Many objectives of this project had been met, and most of them were achieved during the implementation phase. Regarding the rural civil works, it was estimated at the time of appraisal that about 60 alignments totaling 1,500 km would be repaired; however, by the time of the completion of the project, 1,887 km of rural roads had been improved, owing to which a larger number of communes had access to the national road network and more inhabitants had access to social services than previously anticipated. About 63 irrigation schemes servicing an area of 60,314 ha were restored,

as compared to the appraisal target of 20,000 ha. Thus, the project's contributions to food security and agricultural productivity were greater than anticipated. Safe drinking water supplies were established by means of 31 schemes that served a population of 1.53 million as compared with the appraisal estimate of 0.5 million. The number of markets built was 15 as compared to the original number of 50. This reduction in number was attributable to the fact, as shown by subsequent surveys, that in many provinces, markets were not as important as other civil works. Since the construction cost per market was much smaller than the unit cost of roads or irrigations, the smaller number of markets built did not offset the overachievement in the three other subprojects.

Regarding project management—the second component of the project, which sought to provide the CPMU with resources required to manage the implementation of the project and to finance technical support services—it was estimated at appraisal that 180 provincial staff would be trained in project preparation, and 30 national staff would receive training in rural development planning and project management. In fact, in cooperation with the advisory technical assistance associated with this project, more than 2,000 individuals were trained in various fields (management of rural infrastructure development, financial management, project management, and computer literacy).¹⁷

Thus, in terms of physical targets, the project was extremely successful. What were the determinants of this success? We have raised three hypotheses and have tried to investigate whether they are supported by documents and/or by interviews with the CPMU and PPMU staff in Thai Nguyen Province and Quang Nam Province.

The first hypothesis is that the initial estimates of costs were based on inadequate surveys, which generated incorrect information. The results of our field surveys suggested that there were initial overestimates of costs, but the factors for these overestimates were not entirely attributed to the inadequate surveys. It was true that the costs of construction that were conducted by local subcontractors tended to be overestimated since they were probably based on the prices in urban areas such as Hanoi and Ho Chi Minh City while prices in rural areas were much less. Another factor is the devaluation of the Vietnamese dong during the planning and implementing process of the project, which in practice, substantially raised the Vietnamese dong-based budget even though the US dollar-based fund had been unchanged. These factors, particularly the second one, had been anticipated by the donors and local planners. However, it is noteworthy that this windfall was not used

¹⁷ For detailed information, see ADB (2006), pp. 2–3

for inappropriate purposes. The transparency, accountability, and responsibility of central and local managers should be highly appreciated.

The second hypothesis refers to the possibility of a case that the World Bank (2002, pp. 162–3) termed the flexibility in price-quality combination and the liberalization of entry. Generally speaking, in awarding contracts, if quality standards are not set too high, the service may prove to be cheaper for poorer households and countries. This means that there should be some flexibility in the contract to allow for the company, the regulator, and future users to agree on a different price-quality combination when necessary. This approach also enhances the participation of small, local enterprises in the construction, and may thus reduce costs. Even though all elements of this factor were not confirmed in our field surveys, the PPMU in Thai Nguyen Province emphasized that they encouraged the participation of village enterprises in the construction, and the construction costs were even less than the initial estimates.

According to our third hypothesis, substantial reduction in the construction costs resulting in the completion of a larger number of subprojects may have stemmed from positive factors such as the strong absorptive capacity of national and/or provincial staff that reduced the costs of project preparation and implementation. Moreover, the planning capacity and documentation by provincial administration in many cases may have been so good that desirable subprojects were quickly identified. The participation and cooperation from inhabitants may also have contributed to the identification of good subprojects. In the field surveys conducted at Thai Nguyen and Quang Nam, we were impressed by the ownership and administration capacity of both provinces in the sense that they had their own long term socioeconomic development plan with a clear priority on areas of infrastructure construction. Moreover, the documents of such plans had been so well maintained that the infrastructure needs could be easily identified.

4.2 Other fact findings from the field surveys

In addition to the review of documents and interviews at the CPMU, we have chosen two provinces for field study: one in the north (Thai Nguyen) and the other in the central region (Quang Nam). While conducting field surveys, we kept the above hypothesis in mind and tried to identify the institutions that played a critical role in the maximization of the project output.

4.2.1 Thai Nguyen Province

Thai Nguyen Province is located in a mountainous region and shares the border

with Hanoi in the north. Its population in early 1999, when the project under study was implemented, was about one million. The per capita GDP in 2004 was US\$320, as compared to the national average of US\$500. The proportion of poor families among all households was 13.5% in 1998 and 9.9% in 2004, as compared with the national averages of 15.7% and 8.8% in 1998 and 2004, respectively.¹⁸ Out of 180 communes, 106 are located in mountainous areas. Most communes in this province had to bear with shortages of safe drinking water, limited access to the national road network, and inadequate irrigation networks.

After being selected as one of the 23 provinces for the RIS Project, Thai Nguyen was allocated US\$6 million to implement three subprojects: rehabilitation and upgradation of four rural roads (measuring a total of 91.2 km), rehabilitation and upgradation of seven irrigation lines, and building facilities for supplying clean drinking water to eight communes. Table 3 summarizes the subprojects implemented in Thai Nguyen.

Table 3: Performance of the Rural Infrastructure Sector Project (Thai Nguyen Province)

No.	Type	Phase	Subprojects	Design Capacity	Actual (2007)	Initial Cost Estimates (VND mil.)			Implemented Cost (VND)
						MARD	F/S	T/D	
Total						98,599	98,470	95,110	93,463
51	irrigation	I	Ho Nui Coc irrigation	1,249 ha	2,550.4 ha	33,600	33,528	31,743	29,759
52	road	I	Dinh Ca - Binh Long road	24 km	23.5 km	12,000	12,000	11,399	11,940
53	road	II	Roads of La Hien - Cuc Duong - Vu Chan, Giang Tien - Phu Do - Yen Lac - Nui Phan and Duong Ong Luong - Phu Lac	71 km	67.7 km	31,600	31,543	31,407	31,110
54	water	II	Water supply for Dinh Ca, Lau Thuong, Phu Thuong, La Hien and 4 other districts	41,000 people	- people	7,800	7,800	7,428	7,288
55	road	III	Roads of Giang Tien - Nui Phan, Duong Ong Luong	12 km	23.0 km	6,939	6,939	6,938	6,948
56	water + irrigation	III	Water supply network expansion of Dinh Hoa, Vo Nhai and Ho Nui Coc irrigation network improvement	-	-	6,660	6,660	6,195	6,418

- = not available, F/S = Feasible Study, T/D Technical Design

Source: Provincial Project Management Unit of Thai Nguyen Province

The PPMU composed of eight staff members was set up. The deputy director of the Agriculture and Rural Development Bureau of the province was assigned to be director of the PPMU. At the initial stage, the PPMU staff members were sent in turns to Hanoi to participate in training courses organized by the CPMU.

Each of the three subprojects was implemented through the following steps:

1. The PPMU selected the location, carried out surveys on inhabitants' needs, prepared a detailed plan, and procured the counterpart funds. Through MARD, the plan was sent to the ADB and AFD for approval.

¹⁸ ADB (2006), p. 15. Definition of "poor family" here is different from that of "population under the poverty line" as cited earlier.

2. After receiving the approval of the ADB and AFD, the Provincial People's Committee of Thai Nguyen signed for final approval.
3. The PPMU called for bids in engineering consultation and budget structure consultancy.
4. With the assistance of the consulting firm, the PPMU prepared documents for construction bids. Contractors for the rehabilitation and upgradation of roads or irrigation networks were assigned on the basis of such competitive bidding. The bidding documents had to include information on subcontractors. During the construction process, the consulting firm oversaw whether the construction was carried out according to the plan.
5. Upon the completion of the project, a committee consisting of the PPMU, the consulting company, and the representatives of local authorities (communes and districts) was set up to evaluate the performance of the project.

As in other provinces, the project in Thai Nguyen also incorporated significant capacity building to address the relatively low technical, financial, and project management skills of the local government agency staff. The project design also took into account the limited resources available to provincial administrations for rehabilitating essential infrastructure. In reality, administrative difficulties faced by inexperienced PPMU staff were more than anticipated, particularly in competitive bidding, disbursement, and reimbursement procedures. It even caused a delay in the initial disbursement. In response to this situation, the CPMU strengthened the component involving training assistance and organized necessary training for the representatives of all 23 PPMUs. According to an interview with the accounting personnel of Thai Nguyen PPMU, the training on accounting operation was conducted annually and lasted one week. It comprised a suitable combination of formal training and on-the-job training, which was provided with effective support from the CPMU. Further, such annual meeting/training could have served as a good opportunity for the participants to share opinions and resolve project-related issues in collaboration with the staffs of the CPMU and other PPMUs.

The lack of administrative know-how was resolved by timely and highly relevant capacity building; however, it was not the only reason for the delay in initial disbursement. At an early stage of the project, most of the PPMU staff joined the RIS Project on a part-time basis while concurrently continuing their work at the provincial government. Therefore, the PPMU was subsequently reorganized to increase the number of full-time staff, while aiming at more effective project execution. On the

completion of the project, all the PPMU staff members went back to their jobs as government officials. This is how knowledge acquired and skills gained through the RIS Project was transferred to the local government and utilized repetitively in subsequent projects. It is also important to note that the know-how that the PPMU staff gained was not limited to the RIS Project but was commonly required for construction projects, particularly pertaining to the preparation of documents for feasibility studies, procurement procedures, and financial management. When the authors conducted field surveys in May 2007, the PPMU staff provided the feasibility documents that they had prepared for the second phase of the RIS Project. It was completely prepared by the local engineers and government officials in a more effective manner. In this sense, a temporal and flexible structure of the PMU functioned quite efficiently to develop the capacity of the local government, a given institution at the recipient side. The developed capacity was not the only reason for which the RIS Project and other projects and institutional arrangements by the government, such as public reform program, contributed to the capacity development. However, at least, it can be stated that the RIS Project—the first aid financed project in the region—gave crucial momentum to the development of administrative capacity related to infrastructure projects. At the same time, the local government effectively utilized the knowledge in calling for bids on other construction projects and in operating those projects.

Replicable know-how gained through the RIS Project is also apparent at the operation and management stages. The irrigation facilities constructed as a subproject is now fully managed and maintained by a local firm specializing in the management of irrigation facilities. The firm joined the construction phase of the RIS Project, learned necessary technical skills, and took over its operation and management tasks at the completion of the project. Moreover, that firm recently contracted a government funded project on the rehabilitation of irrigation facilities. This case describes how participation of local firms in the construction phase secured technical sustainability at the operation and management stages and increased business opportunity for subsequent projects.

As shown in Table 3, the capacity finally achieved (actual capacity) is the double of the capacity estimated in the design stage (design capacity) in the cases of subprojects No. 51 (irrigation) and No. 55 (road). Except for subproject No. 55, in all cases, the implemented cost was lower than the cost estimated in the feasibility study stage.

4.2.2 Quang Nam Province

Quang Nam Province is located in the central region of Vietnam. Its population

in early 1999, when the project under study was being implemented, was about 1.5 million. The per capita GDP in 2004 was US\$310, as compared to the national average of US\$500. The share of poor families among all households was 13.5% in 1998 and 9.9% in 2004, as compared with the national averages of 26.5% and 15.5% in 1998 and 2004, respectively (ADB 2006). Unlike the communes and small cities located near the coast of the Pacific Ocean, the communes located far from the coast, particularly the mountainous communes close to the border of Laos, are poor and have to encounter a shortage of safe drinking water, inadequate irrigation networks, and a lack of access to national road networks.

As one of 23 provinces where the RIS Project was implemented, Quang Nam was allocated US\$6.1 million (equivalent to VND85 billion; later the amount increased to VND89 billion, probably due to the devaluation of the Vietnamese dong) to implement all four subprojects: rehabilitation and upgradation of rural roads, rehabilitation and upgradation of irrigation lines, building facilities for supplying clean drinking water, and construction of markets. Table 4 summarizes the subprojects implemented in Quang Nam Province.

Table 4: Performance of the Rural Infrastructure Sector Project (Quang Nam Province)

No.	Type	Phase	Subprojects	Design Capacity	Actual (2007)	Initial Cost Estimates (VND mil.)			Implemented Cost (VND)
						MARD	F/S	T/D	
Total						96,450	97,438	97,460	86,034
103	irrigation	I	Phu Ninh Irrigation	1,947 ha	1,947 ha	18,800	18,998	18,748	16,470
104	road	I	Roads of 614,615 and Tien Phuoc market (4,000m ²)	44 km	47 km	27,200	32,748	30,865	27,697
105	irrigation	II	Irrigation schemes of Phuoc Ha and Ho Giang	730 ha	730 ha	14,000	14,000	13,999	12,654
106	road	II	Road 613 and Tra My market (3,600m ²)	18 km	18 km	15,000	15,000	12,706	9,410
107	water	II	Water supply for Trao, Trung Phuoc, Que Trung, Cam Thanh, Dai Thang and Nui	30,000 people	32,710 people	10,000	9,692	9,692	9,410
108	irrigation		Additional investment for Phuoc Ha Ho Giang subproject	250 ha	125 ha	4,700	4,700	4,700	4,337
109	road	III	Additionally asphalted to roads of 614,615	7 km	7 km	6,750	7,000	6,750	6,056

- = not available, F/S = Feasible Study, T/D Technical Design

Source: Provincial Project Management Unit of Quang Nam Province

The selection of sites for subprojects and the process of the implementation of subprojects were similar to the case of Thai Nguyen Province. However, the case in Quang Nam Province illustrated the following interesting points:

First, Quang Nam Province has actively exercised its ownership in the selection of projects and their location. Since loans must be paid back in the future, the local government placed high priority on areas with higher potential for economic development. This decision was contrary to the ADB policy, which emphasized poverty reduction and thus, preferred mountainous areas or other remote regions. However, Quang Nam tried to harmonize the two targets—poverty reduction and growth—while

selecting the sites for the subprojects.¹⁹ We were convinced of the merits of this policy after visiting provincial road no. 615 in September 2007. With a length of 21 km, road no. 615 connected the provincial capital Tam Ky with the mountainous districts in the western part of the province. Before the implementation of this project, the length of the road was only 8 km and was in use only during the dry season. With the broadening and extension of the road, which has been covered by concrete, inhabitants from the mountainous regions have been able to access National Highway No. 1 in both dry and rainy seasons. Their living standards have been substantially improved since their fruits and other mountain products have been distributed to Tam Ky and other cities located near National Highway No. 1.

Second, the initiative of the provincial government to share the burden of beneficiaries is also noteworthy. As noted above, in this project, local (provincial) government and direct beneficiaries must each contribute 10% to the total budget. In Quang Nam, however, it was impossible to procure funds from beneficiaries since they were too poor. For implementing the project, leaders of Quang Nam had to bear the financial burden of inhabitants who will benefit from the project.

As shown in Table 4, for all subprojects, the implemented cost was much lower than the cost estimated at the stage of the feasibility study.

¹⁹ We may refer to the related policy of the Vietnamese government, which has emphasized growth in the overall strategy for poverty reduction. Instead of preparing the Comprehensive Poverty Reduction Strategy Paper (CPRSP) recommended by the World Bank since 1999, Vietnam prepared the Comprehensive Poverty Reduction and Growth Strategy Paper (CPRGSP).

5. SYNTHESIS AND CONCLUDING REMARKS

Several interesting points emerged from the study of two ODA projects in Vietnam.

First, the significance and importance of the *ownership* of ODA recipients were confirmed. Any project that competes for ODA should be planned in advance and incorporated in the long-term economic development strategy of the country or the local region. Local governments should also be active decision makers during the implementation of the projects. In addition, ownership should also be realized at the rank-and-file level, i.e., the ownership by the inhabitants who are either direct beneficiaries of the services of the projects or the people who are directly and sometimes adversely affected by the projects. In this respect, the RIS Project was entirely successful. The NH5 Project was partially successful in the sense that its infrastructure services more than met the expected social and economic needs, but at the same time, the project resulted in safety problems and inconvenience in transportation for inhabitants living along the highway.

Second, in addition to infrastructure services made available to developing countries, ODA infrastructure projects play a crucial role in the transfer of knowledge as well as technical and management know-how from donors to recipient countries. In this paper, we pointed out three levels of such a transfer. How can this transfer be promoted? From the viewpoint of recipient countries, active participation by local organizations, local firms, and local staff and engineers in processes such as the design, implementation, and management of construction sites is essential. Initial capacity in terms of human resources seems to be an important factor for effective participation in these processes. In the case of Vietnam, human resources were highly evaluated by the donors' experts even though, owing to their background (educated and trained under the socialist system in Vietnam and in the former USSR and other Eastern European countries), the initial endowments were inadequate for organizing and implementing large-scale ODA projects. However, given the initial scientific knowledge and the consciousness to learn, Vietnamese staff and engineers in the ODA projects under study showed improvement in management capability, and many of them secured higher positions in the management of subsequent projects.

A noteworthy institutional factor in the case of Vietnam is the encouragement of joint ventures or joint operations between foreign and local partners in the designing and construction management of ODA projects. In order to absorb knowledge, know-how, and experience from foreign firms involved in the process of designing, construction, and supervision of the projects, such joint efforts are desirable. Under

the WTO framework, laws or policies that require such joint ventures or joint operations are not permissible. However, recipient countries may provide background conditions to encourage joint ventures or joint operations. For example, facilitating (e.g., reducing administrative procedures) and promoting (e.g., providing tax and credit incentives) the development of local consulting firms and local contractors are essential. Given the availability and capability of local firms, foreign firms will be induced to invite local partners to participate in the biddings related to ODA projects. If local partners are found capable and creditable, foreign firms can benefit from joint ventures or joint operations to save transaction costs through access to information and local resources.

Third, the interfirm, interorganization, and interproject transfer of experience and knowledge in recipient countries are also crucially important. Such transfer is mainly horizontal in nature. In the case of Vietnam, interfirm (among construction firms) and interorganization (among PMUs) transfers appeared weak. Instead, given the existence of general corporations in the construction sector, vertical transfer (intrafirm) between contractors and subcontractors has been widely observed. While intrafirm transfer is also important and tends to save transaction costs, the promotion of horizontal transfer is also necessary for enhancing the spillover effects of ODA projects. Improvements in the labor market for engineers and managers and other institutional reforms may be desirable.

In the case of Vietnam, interproject transfer of knowledge, know-how, and experience has been particularly important in both static and dynamic contexts. From a static perspective, due to a sudden increase in the number of ODA projects as well as in the number of infrastructure projects financed by domestic budgets, human resources, particularly engineers and managerial classes, have been mobilized, and many of them have had to work *concurrently* in an ODA project and a purely domestic project. The knowledge and know-how they acquired in ODA projects can be transferred directly and immediately to domestically financed projects. From a dynamic perspective, for projects implemented in different points of time, knowledge and know-how acquired in previous projects can be transferred to subsequent projects. For promoting such transfer, both the careful storage of documents of “old” projects and easy availability of these documents for those who are planning and implementing new projects are essential.

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APPENDICES

Appendix 1: List of Key Informants for the NH5 Project

Name	Position / Agency	Interview Date
Ms. Nguyen Thanh Hang	Chief of ODA Management Division / Planning and Investment Department, Ministry of Transport and Communications	2/5/2007
Mr. Do Duc Chinh	Deputy General Director / Project Management Unit No.5	2/5/2007
Mr. Akira Mihashi	Manager / Civil Engineering Department, International Civil Engineering Division, International Operational Headquarters, Taisei Cooperation	5,18/7/2007
Mr. Yoshio Uno	Acting General Manager / Marketing & Business Development Department, International Civil Engineering Division, International Operational Headquarters, Taisei Cooperation	18/7/2007
Mr. Hidetomo Akutsu	Regional Representative / Katahira & Engineers International Hanoi Office	4/9/2007
Mr. Norio Kamei	Advisor / Labour Overseas Deployment Corp., Ministry of Transport, Vietnam (Former Representative, Sumitomo Construction Cooperation Hanoi Office)	4/9/2007
Mr. Ha Dinh Loi	Vice General Director / CIENCO8	5/9/2007
Mr. Dao Van Tan	Vice General Director / Truong Son Construction Corp.	5/9/2007
Mr. Truong Duc Loi	Foreign Affairs Bureau, Truong Son Construction Corp.	5/9/2007
Mr. Dang Xuan Pha	Economic Engineering Bureau, Truong Son Construction Corp.	5/9/2007
Mr. Nguyen Tat Vinh	Chief of International Project Management Department / Transport Engineering Design Incorporated (TEDI)	5/9/2007
Mr. Nguyen Minh Thang	Engineer / Consultation Bureau, Transport Engineering Design Incorporated (TEDI)	5/9/2007
Mr. Nguyen Minh Ha	Engineer / Project Office for Quality Control, Transport Engineering Design Incorporated (TEDI)	5/9/2007

Appendix 2: List of Key Informants for the Rural Infrastructure Sector Project

Name	Position / Agency	Interview Date
Mr. Vo Truc Dien	Economic/Program Officer / ADB Vietnam Resident Mission	2/5/2007
Mr. Tran Thanh Dinh	Vice Director, Central Project Management Unit	2/5/2007
Mr. Do Huu Dan	Accountant, Central Project Management Unit	2/5/2007
Mr. Bui Minh Phuong	Officer, Central Project Management Unit	2/5/2007
Mr. Nguyen Tien Dung	Officer, Central Project Management Unit	2/5/2007
Mr. Dinh Khac Tinh	Deputy Director / Department of Agriculture and Rural Development, Thai Nguyen People's Committee	3/5/2007
Mr. Bui Tien Chinh	Vice Director / Planning Division, Department of Agriculture and Rural Development, Thai Nguyen People's Committee	3/5/2007
Mr. Phung	Deputy Director / Department of Transport and Communications, Thai Nguyen People's Committee	3/5/2007
Mr. Ban	Officer / Department of Agriculture and Rural Development, Thai Nguyen People's Committee	3/5/2007
Mr. Nguyen Van Tien	Director / Department of Agriculture and Rural Development, Quang Nam People's Committee	7/9/2007
Mr. Tran Thanh Ha	Project Coordinator/ Department of Agriculture and Rural Development, Quang Nam People's Committee	7/9/2007

JAPAN BANK FOR INTERNATIONAL COOPERATION (JBIC)

<http://www.jbic.go.jp/>

4-1, Ohtemachi 1-Chome Chiyoda-ku, Tokyo 100-8144, Japan
Tel:+81-3-5218-9720 (JBIC Institute),
Fax: +81-3-5218-9846

Osaka Branch

13th Fl., Aqua Dojima East 4-4, Dojimahama 1-Chome Kita-ku, Osaka 530-0004, Japan
Tel: +81-6-6346-4770, Fax: +81-6-6346-4779

Overseas Network

Representative Office in Beijing

3131, 31st Floor, China World Trade Center, No.1 Jian Guo Men Wai Avenue, Beijing 100004, The People's Republic of China
Tel.86-10-6505-8989, 3825, 3826, 3827, 3828, 1196, 1197
Fax.86-10-6505-3829, 1198

Representative Office in Hong Kong

Suite 3111, One Pacific Place, 88 Queensway, Hong Kong
Tel.852-2869-8505, 8506, 8507
Fax.852-2869-8712

Representative Office in Bangkok

14th Floor, Nantawan Bldg., 161 Rajdamri Road, Bangkok, 10330, Thailand
Tel.66-2-252-5050
Fax.66-2-252-5514, 5515

Representative Office in Hanoi

6th Floor, 63 Ly Thai To Street, Hanoi, Viet Nam
Tel.84-4-8248934, 8248935, 8248936
Fax.84-4-8248937

Representative Office in Jakarta

Summitmas II 7th Floor, Jl. Jenderal Sudirman, Kav.61-62, Jakarta Selatan, Jakarta, Indonesia
Tel.62-21-522-0693
Fax.62-21-520-0975

Representative Office in Kuala Lumpur

22nd Floor, UBN Tower, Letter BOX No.59, Jalan P.Ramlee 50250, Kuala Lumpur, Malaysia
Tel.60-3-2072-3255, 2201, 2202
Fax.60-3-2072-2115

Representative Office in Manila

31st F, Citibank Tower, Valero St. corner Villar St., Makati, Metro Manila, Philippines
Tel.63-2-848-1828, 63-2-752-5682
Fax.63-2-848-1833, 1834, 1835

Representative Office in Singapore

9 Raffles Place, #53-01 Republic Plaza, Singapore 048619
Tel.65-6557-2806
Fax.65-6557-2807

Representative Office in Colombo

Level 13, Development Holdings 42, Navam Mawatha, Colombo 2, Sri Lanka
Tel.94-11-230-0470
Fax.94-11-230-0473

Representative Office in Dhaka

IDB Bhaban(5th floor), E/8-A, Begum Rokeya Sharani, Sher-E-Bangla Nagar, Dhaka 1207, Bangladesh
Tel.880-2-811-4081, 6700
Fax.880-2-811-3336

Representative Office in Islamabad

5th Floor, Evacuee Trust Complex, Aga Khan Road, F-5/1 Islamabad, Pakistan
Tel.92-51-2820119
Fax.92-51-2822546

Representative Office in New Delhi

3rd Floor, DLF Centre, Sansad Marg, New Delhi, 110001, India
Tel.91-11-2371-4362, 4363, 7090, 6200
Fax.91-11-2371-5066
91-11-2373-8389

Representative Office in Sydney

Suite 2501, Level 25, Gateway, 1 Macquarie Place, Sydney, N.S.W.2000, Australia
Tel.61-2-9241-1388
Fax.61-2-9231-1053

Representative Office in Moscow

123610 Moscow, Krasnopresnenskaya Nab.12, World Trade Center, Office No.905, Russian Federation
Tel.7-495-258-1832, 1835, 1836
Fax.7-495-258-1858

Representative Office in Frankfurt

Taunustor 2, 60311 Frankfurt am
Main, Germany
Tel.49-69-2385770 Fax.49-69-23857710

Representative Office in London

4th Floor, River Plate House, 7- 11
Finsbury Circus, London, EC2M 7EX, U.
K.
Tel.44-20-7638-0175
Fax.44-20-7638-2401

Representative Office in Paris

21, Boulevard de la Madeleine, 75038
Paris Cedex 01, France
Tel.33-1-4703-6190 Fax.33-1-4703-3236

Representative Office in Amman

Le Royal Hotel, Zahran Street, 3rd
Circle, Jabal Amman, Amman 11118,
Jordan
Tel.962-6-468-0075, 0076
Fax.962-6-468-0078

Representative Office in Dubai

9th Floor, West, The Gate Dubai
International Financial Centre, P.O.
Box 121300 Dubai, U.A.E.
Tel.971-4-363-7091
Fax.971-4-363-7090

Representative Office in Cairo

Abu El Feda Bldg., 16th Floor, 3 Abu El
Feda Street, Zamalek, Cairo, Egypt
Tel.20-2-738-3608, 3609
Fax.20-2-738-3607

Representative Office in Nairobi

6th Floor, International House, Mama
Ngina Street, P.O.Box 49526, 00100
Nairobi, Kenya
Tel.254-20-221420, 221637
Fax.254-20-221569

Representative Office in New York

520 Madison Avenue, 40th Floor, New
York, NY 10022, U.S.A.
Tel.1-212-888-9500, 9501, 9502
Fax.1-212-888-9503

Representative Office in Washington,
D.C.

1909 K St. N.W., Suite 300, Washington,
D.C., 20006, U.S.A.
Tel.1-202-785-5242 Fax.1-202-785-8484

Representative Office in Buenos Aires

Av.Del Libertador No.498, Piso19,
1001 Capital Federal, Buenos Aires,
Argentina
Tel.54-11-4394-1379, 1803
Fax.54-11-4394-1763

Representative Office in Lima

Av. Canaval Moreyra No 380, San
Isidro, Lima 27, Peru
Tel.51-1-442-3031 Fax.51-1-440-9657

Representative Office in Mexico City

Paseo de la Reforma 265 Piso-16, Col.
Cuauhtemoc, Mexico, D.F.06500, Mexico
Tel.52-55-5525-67-90
Fax.52-55-5525-34-73

Representative Office in Rio de Janeiro

Praia de Botafogo, 228- 801 B (Setor
A), Botafogo, CEP.22359-900, Rio de
Janeiro, RJ, Brazil
Tel.55-21-2553-0817
Fax.55-21-2554-8798

Toronto Liaison Office

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