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An Analysis of the Sustainability of the Project "*Industrial and Urban Development in Viet Tri City*" (2002-2005)

Thesis by Nhi Quyen Le

Entrance to the Historical Vestige Zone of Hùng Kinhs' Temples in Phú Thọ

Supervisors: Professor Henning Schroll & Associate Professor Søren Lund

To my late younger sister, Lê Đoan Thục

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Abstract

Project sustainability is a recent concept predominantly debated and employed by international aid organisations in development aid: the meaning of the term, what its time and spatial scales are, what dimensions it has, what factors it can be affected, etc. It is deemed to be a high-level examination whether the aid intervention has been successful or not. Even though all the international aid organisations examined in the thesis share the viewpoint that project sustainability has to do with the maintenance of the achieved outcomes after the aid intervention has come to an end, there are some shortages in their definitions of the term as well as the factors that can affect project sustainability.

This thesis is thus concerned with analysing the sustainability of the project "*Industrial and Urban Development in Viet Tri city*" (Việt Trì Project), which was a part of the environmental programme "*Danish Environmental Assistance to Vietnam 2000-2004*" (DEA-Vietnam), financed by the Danish International Development Agency (Danida) and implemented in Việt Trì city, Phú Thọ province from July 2002 to July 2005. The main aim is to obtain deeper practical knowledge and understanding of project sustainability, the factors that can affect project sustainability in reality, and the improvement possibilities.

Initially, the research problem is introduced and different methods to fulfil the study are dealt with. A discussion of sustainability is presented in order to prepare a ground for approaching the discussion of project sustainability. The dimensions of and the factors that can affect project sustainability are then explored. Seen from the theoretical perspectives, project sustainability has to do not only with the capacity of the directly involved partner stakeholders to maintain the achieved results after the aid intervention has come to an end but also their capacity to produce the results by themselves and develop/reproduce them over a period of time. Moreover, the five dimensions of project sustainability - financial, institutional, technical, social, and environmental - can be affected not only by the partner government and donor policies, the partner participation and ownership, the awareness building and training, and the external political and economic factors but also by the insufficient and explicit addressing and analysis of sustainability throughout the project cycle, corruption, and inefficient participation from the donor's side.

From the empirical analysis of Việt Trì Project, I found out that the project itself is too ambitious in terms of components and activities for a short intended time frame (24 calendar months), some project outcomes are potentially sustainable while some are not. Against the background of the theoretical framework, I suggested that Việt Trì Project should be improved by concentrating on the most necessary activities based

upon the characteristics and duration of the project, enhancing the addressing and analysis of sustainability in the project cycle, improving the anti-corruption factor, and strengthening the participation of the ultimate beneficiaries in the project cycle, especially in the Identification and Preparation phase where the efficient engagement of Danida's local staffs should also be enhanced.

It is concluded from the research that firstly, as far as Việt Trì Project and other DEA-Vietnam projects are concerned, project sustainability was touched upon at a general level in Danida's working tools. Secondly, the fieldwork in Phú Thọ province has played a crucial role to the research. I collected a lot of useful and interesting live information which is not available in the documents of Việt Trì Project. Thirdly, the professional experiences shared by Plan International and the project experts were useful for the analysis of Việt Trì Project's sustainability problems, especially the analysis of the ultimate beneficiaries' participation. And finally, to talk about corruption in general and corruption in connection with development projects is a taboo in Phú Thọ province.

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List of Abbreviations

ADB	Asian Development Bank
AusAID	Australian Agency for International Development
CG	Consultative Group
CIDA	Canadian International Development Agency
CSECHE-Hue	Centre for School Equipment and Humanitarian Education
Danida	Danish International Development Agency
DCES	Development Cooperation in the Environment Sector
DEA-Vietnam	Danish Environmental Assistance to Vietnam
DKK	Danish Kroner
DoC	Department of Construction
DoI	Department of Industry
DoLSIS	Department of Labour, Soldier Invalids and Society
DoNRE	Department of Natural Resources and Environment
DoST	Department of Science and Technology
DoSTE	Department of Science Technology and Environment
DPI	Department of Planning and Investment
EIA	Environmental Impact Assessment
GAVI	Global Alliance for Vaccines and Immunizations
GDP	Gross Domestic Product
German ODA	German Official Development Assistance
GO(s)	Governmental Organisation(s)
GVC	Gruppo di Volontariato Civile
IUCN	International Union for the Conservation of Nature and Natural Resources
Logframe	Logical Framework
MPI	Ministry of Planning and Investment
NGO(s)	Non-Governmental Organisation(s)
ODA	Official Development Assistance
OHS	Occupational Health and Safety
Phú Thọ PPC	Phú Thọ's Provincial People's Committee
PHAS	Participatory Hygiene and Sanitation Transformation
PMU	Project Management Unit
PMU18	Project Management Unit 18
PPC	Provincial People's Committee

PRA	Participatory Rural Appraisal
PSC	Project Steering Committee
PWGs	Project Working Groups
PVC	Polyvinyl chloride
SIDA	Swedish International Development Cooperation Agency
Commission	World Commission on Environment and Development
U4	Utstein Anti-Corruption Resource Centre
UNDP	United Nations Environmental Programme
UNEP	United Nations Environment Programme
VAT	Value Added Tax
Việt Trì	
URENCO	Việt Trì Urban Environmental Company
Vân Phú Plant	Vân Phú Domestic Wastes Recycling Plant
WWF	World Wildlife Fund

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1. Problem Identification and Research Methodology

1.1. Problem Identification

1.1.1. Background of the study

Urbanisation and urban industrialisation in developing countries have been growing remarkably in the last 3-4 decades. The former is bringing an ever-increasing demand for shelter, employment and resources to support escalating populations while the latter is partly meeting the demands of the former and contributing to notable urban environmental problems. Both processes are generating daily an almost uncountable amount of domestic wastes, solid and hazardous industrial wastes, untreated or poorly-treated wastewater, and emissions, whose subsequent impacts on the environment are prevalent and immense. Already in the 1992 World Development Report, it is showed that city air pollution in the developing countries that are in the throes of industrialisation is far worse than in industrialised countries, and as far as solid and hazardous wastes are concerned, open dumping and uncontrolled landfilling, despite the huge amount discharged daily, are still the main methods in many of such countries (World Bank 1992:63-67)

In addition, the *UN-HABITAT State of the World's Cities Report 2006/7* reveals that in 2007, our world will be entering a historic urban transition where the world's urban population, for the first time in history, will exceed the rural population, and that in the next 20 years, 95% of the world's urban growth "*will be absorbed by cities of the developing world, which are less equipped to deal with rapid urbanisation*". There is a very clear trend where intense urbanization and urban growth are shifting from Europe, North America and Latin America to Asia and Africa. Small towns and cities occupied by less than 1 million residents will be the major destinations of immigrants, and as it is seen now, "*more than half of the world's urban population lives in cities of fewer than 500,000 inhabitants, and almost one-fifth lives in cities of between 1 and 5 million inhabitants*".[1]The released information indicates that environmental problems in cities in developing countries, which have been on the rise, will possibly be more immense and severe, and the target "*sustainable urban development*" will be coping with more and harder challenges.

The existing sad fact is, governmental authorities and city planners seem to be more concerned with how to accelerate the economic development, to sufficiently provide the urban inhabitants with basic services and living requirements than how to develop their cities in a sustainable manner, namely the urban inhabitants can have their basic needs met "*without compromising the ability of future generations to meet their own needs*" (the World Commission on Environment and Development 1987:43).

[1] http://www.unhabitat.org/mediacentre/documents/sowcr2006/SOWCR%20Press%20release.pdf

The 1992 Rio Declaration on Environment and Development pointed out that environment and development significantly have complementary elements, and the sustainable development targets cannot be reached without the simultaneous engagement of environmental protection solutions. That is to say, nations should have specific and suitable environmental protection measures, and integrate them in their development plans and strategies. In this perspective, sustainable urban development is supposed to be a necessary and important mission for governmental authorities at all levels in developing countries, for city planners, economists, environmentalists, international donors and those alike.

In the specific context of developing countries, they are often in lack of resources, relevant capacity and technologies, etc. to carry out their urban development plans and projects. The assistance of international institutions, mostly heard as international development aid agencies or international aid organisations, is therefore needed, and as a matter of fact, many developing countries have been recipients of international programmes and projects aiming at sustainable industrial and urban development. What matter here is: are those programmes and projects sustainable even though sustainable development is the focus? What is the weight of their sustainability and why is it important for them to be sustainable? Are there good sustainability lessons to be learnt and alternatives to be taken into account?

A review of some programme and project evaluation documents of UNDP, Sida, Danida, Plan International, etc. has shown that international aid organisations have been paying greater attention to long-term perspectives and lasting improvements, but "*far too many development initiatives tend to fail once the implementation phase is over, because either the target group or the responsible parties do not have the means or sufficient motivation to provide the resources needed for the activities to go further*" (Danida 1999:60), and "*the issue of sustainability has been a key failing of many projects in the past. Simple examples include water pumps that are not repaired, health posts without staff…and unprofitable income generating initiatives. These project types provide many examples of where projects have not been sustainable due to a wide variety of (or combination of) project specific and wider contextual issues*" (Plan International 2002a:2).

My study continues the ongoing discussion of sustainability and sustainable development, but more specifically relates to project sustainability with focus on environmental projects. On the basis of the viewpoint that external sustainable environmental interventions play a significant role to not only sustainable environmental improvement but also sustainable development in the recipient locality, I am going to look at the case of the project "*Industrial and Urban Development in Viet Tri city*" (henceforth: Việt Trì Project) financed by the Danish International Development Assistance (Danida) and benefited by Việt Trì city, Phú Thọ province (Vietnam), and analyse its sustainability.

Originally, Việt Trì Project was a part of the bigger environmental programme "*Danish Environmental Assistance to Vietnam 2000-2004*" or DEA-Vietnam for short, which was officially launched in 2000 after many discussions and negotiations between Denmark and Vietnam began in 1997. In the framework of DEA-Vietnam, there were 16 approved projects in all falling under four components, which are sustainability management of natural resources and biodiversity conservation, sustainability management of coastal zones and marine protected areas, sustainable development of urban areas and industry, and environmental education and awareness[2]. Việt Trì Project belongs to the third component - sustainable development of urban areas and industry. Together with other five projects distributed to Nghệ An province, Thái Nguyên province, Thanh Xuân Bắc suburb, Hanoi, Ministry of Construction, and Hanoi University of Architecture, Việt Trì Project became the mainstay of DEA-Vietnam after the Danish Parliament had, at the end of 2001, decided to sharply reduce the committed total programme budget from DKK 140-210 million/year to DKK 50 million/year for the period 2002-2004.

The existence of Việt Trì Project is regarded as being important for the improvement of the environmental problems caused by the industrial and urban development that has been taking place aggressively in Phú Thọ province. Important not only because it is the first time Phú Thọ province received a governmental Danish development aid intervention but also because Việt Trì Project was meant as a "Phase I project", namely a subsequent Phase II project was also put on the agenda. Therefore, the sustainability of the Việt Trì Project is of great significance to the continuation of the Phase II project, and this is the main reason why I decide to look at it. The next reason is, Danida seems to be so aware of the fact that "*sustainability*" is a problem of many development projects and programmes, yet from the DEA-Vietnam Programme Evaluation Report made by Scanteam of Norway, it seems like DEA-Vietnam in general and its individual projects in particular have problems with sustainability. Why has Danida not learnt experiences from other international development organisations' failures and not been able to do a better sustainability job? What are Danida's problems with project sustainability? Are there possibilities of enhancing those problems, not only for thinking of Việt Trì Project but also other similar projects in future?

The main objective of the study is to investigate and analyse the sustainability of Việt Trì Project, and propose some alternatives for improvement. That is, the target receiver is first of all Danida, which I hope will regard the study as an objective and constructive research work attempting to debate an issue of its high concern (as stated in several of Danida's official documents). Phú Thọ province and Việt Trì city are the next intended receivers, which hopefully may learn how to design, plan and implement projects like Việt Trì Project more sustainably in future. And finally anyone sharing the same interest may find the study useful for his/her knowledge and inspiration.

[2] The four components are alternately named "green", "blue", "brown", and "grey" by Danida.

1.1.2. Research question and working questions

The study is conducted by focusing on this specific research question:

Why has the project "Industrial and Urban Development in Viet Tri city" (Việt Trì Project) not fully achieved the sustainability goal, and what are the alternatives for improvement?

Solving the question demands a comprehensive investigation of a number of related dimensions, following the working questions below:

i. What are sustainability and project sustainability, and why project sustainability?

ii. What are the main environmental problems caused by industrial and urban development in Phú Thọ province and why is Danida intervening? What is Việt Trì Project concerned with?

iii. How were the aspects relating to sustainability planned and realised in Việt Trì Project , and how is its sustainability?

iv. What alternatives can be taken into account and what are the advantages and challenges of the recommendations in Danida's specific context?

1.1.3. Expected outcomes

The study is expected to attain four concrete outcomes below.

i. To obtain a deeper theoretical understanding of the concept project sustainability and the factors that can affect project sustainability;

ii. To learn about the key environmental problems caused by industrial and urban development in Phú Thọ province and the reasons for Danida's intervention via Việt Trì Project;

iii. To get deeper knowledge of project sustainability in practice by analysing Việt Trì Project;

iv. To recommend some alternatives for enhancing the sustainability of Việt Trì Project and hopefully similar Danida's projects in future.

1.1.4. Limitations of the study

Scope of the study

Việt Trì Project is a quite large project which involves the participation of thousands of stakeholders at all levels, among those were 9 wards and commune with more than 15,600

individuals. There were ten major achieved outcomes in all (more details about the outcomes in **Chapter 3**), and I, due to time and resources restrictions, have decided not to look at the outcomes relating to improvement of awareness and knowledge of the community on domestic wastes and sanitation, the efficiency of the production and dissemination of brochures, leaflets and videos on environmental issues.

I also exclude the outcome of capacity development in environmental monitoring and pollution data management within Phú Thọ Department of Natural Resources and Environment (DoNRE) and Việt Trì City Water Supply Company, as well as the English language courses for the project staff. I trust that it is not reliable enough to assess the involved staffs' capacity as well as English language competence before and after the courses without being part of the system before, during and after the project. The outcomes chosen for in-depth study are of my foremost interests, have visible sustainability possibilities, and can be analysed within my time and resources frame on a reliable scientific basis.

Access to official project documents

It has been possible for me to, from different sources, get access to most of the key official project documents except the ones thereinafter.

- The identification report of Việt Trì Project, which was not by any means archived by the Royal Danish Embassy in Hanoi even though it is an important document, and as far as I understand from an interview with Mr. Jan Riemer - Senior Technical Advisor in the Environment Group of the Technical Advisory Services of Danida, the Embassy has the obligation to archive all programme and project documents in form of electronic versions or hard copies.

- The financial and institutional analysis that was made for Việt Trì Project at the identification and preparation phase. Nevertheless, none of these institutions which should have had a copy of that analysis has a copy: the Royal Danish Embassy in Hanoi, Phú Thọ Department of Science Technology and Environment (DoSTE) and Phú Thọ Department of Natural Resources and Environment (DoNRE). I thus cannot know exactly what were written in that analysis (and the Project Document of Việt Trì Project did not include the main content of the analysis either even though it was supposed to), so the financial sustainability and institutional sustainability analysis in **Chapter 4** have to basically be relied on the site visits and the interviews I have made with the involved stakeholders in Phú Thọ during the fieldwork.

- The commissioning minutes for receiving the upgraded market facilities that existed only in Vietnamese (!?). By the time I arrived in Phú Thọ province, the project had been handed over and all the official project documents had been sealed and archived.

It turned to be a very complicated matter for Phú Thọ DoNRE to unseal the documents I requested just to satisfy my study purpose.

- The Strategy and Action Plan and draft Project Document for support to Health Care Waste Management in Việt Trì city, the Strategy and Action Plan for support to Management of Industrial Cleaner Production (CP) including Occupational Health and Safety (OHS) in Việt Trì city, and the Strategy and Action Plan for the Integrated Management of domestic and industrial wastewater were not finalized when I did the fieldwork and are still not finalized by the time I am writing this sub-section. As a consequence, the analysis of the sustainability of Việt Trì Project will exclude these documents.

Despite the shortage of the documents mentioned above, I trust that I am not hampered to make an interesting and useful analysis based on the documents I have collected as well as the interviews and the site visits I have made.

1.1.5. Concept definitions

This sub-section presents definitions of some concepts which are not discussed at theoretical level (e.g. sustainability and project sustainability) but utilised in some parts of the research.

Components: clusters of related topics that may be addressed, and these are to a large extent affiliated with certain institutional actors, including the ministry(ies) with the responsibility of implementing the elements of the national strategies and plans intended to address these issues (Danida 2001a:49).

Industrial zones: are concentrated and non-resided zones established in defined areas with the aim to provide industrial production support services. Industrial zones are under the direct management of the central government. Yet the local government can be entrusted to manage and supervise them (Mr. Nguyễn Đức Tân - Quảng Trị Provincial People's Committee).

Industrial complexes: are concentrated and non-resided zones established in defined areas with the aim to provide industrial production support services. Different from industrial zones, industrial complexes are always under the direct management and supervision of the local government (Mr. Nguyễn Đức Tân - Quảng Trị Provincial People's Committee).

Project: is either an independent aid intervention or the smallest unit of a bigger aid intervention – programme, which may have various components and then a number of projects falling under each component, or just a number of projects. The definition of this concept is summed up from programme documents of a variety of international aid organizations.

Stakeholder: in the particular context of this study, the term *stakeholder* broadly covers the following meanings: (i) People who will be affected by an endeavour and can influence it but are not directly involved with doing the work; (ii) People who are (or might be) affected by any action taken by an organization or group; (iii) An individual or group with an interest in the success of a group or an organization in delivering intended results and maintaining the viability of the group or organization's product and/or service; (iii) Any organization, governmental entity, or individual that has a stake in or may be impacted by a given approach to environmental regulation, pollution prevention, energy conservation, etc.; (iv) A participant in a community mobilization effort, representing a particular segment of society (Wikipedia).

1.2. Research Methodology

This sub-chapter attempts to present and discuss the methods I am exploiting to answer the research questions.

1.2.1. About the theoretical background

In order to analyse the sustainability of Việt Trì Project, I will review, discuss and analyse some theories and standpoints about sustainability and project sustainability, and then build up a theoretical framework on which the empirical analysis will be based.

As far as sustainability theory and standpoints are concerned, I will be concentrating on discussing sustainability definitions by the World Commission on Environment and Development; Lynam and Herdt; Goldsmith and Brinkerhoff; and Spangenberg *et al*. There are two main reasons for my choice: I find their definitions are the most characteristic and interesting ones among those I have examined and they help create a good ground to switch to the project sustainability discussion. Since the focus of the study is project sustainability, I will not dig into the origin and dimensions of sustainability, time and spatial scales, measurement of sustainability, etc. but introduce my own interpretation and definition of the term and then zero in on the project sustainability discussion.

With reference to project sustainability, I will devote time to a discussion of the term's definitions by some "senior" international aid organisations like the Danish International Development Agency (Danida), the Plan International, the Swedish International Development Cooperation Agency (SIDA), the United Nations Development Program (UNDP) and the World Bank's Independent Evaluation Group; and by two development aid experts working for the Australian Agency for International Development (AusAID) – Young and Hamshire. The discussion will be continued with an examination of the dimensions of project sustainability, space and time in project sustainability, factors which may affect project sustainability and measures to surmount. Particularly in the discussion of the dimensions, the factors and the measures, I will also bring in the standpoints of some

other organisations such as the Asian Development Bank, the Global Alliance for Vaccines and Immunization, Transparency International, the Utstein Anti-Corruption Resource Centre; and such authors as Goldsmith and Brinkerhoff; Aguilar *et al*, Gill and Pino; Dudley; and Cooksey. The idea is to enrich the discussion and form a solid theoretical framework for the empirical analysis.

All the theoretical materials used for the theoretical discussion are mainly found by using "quick search" function and typing the key words (like "sustainability", "sustainable development", "project sustainability", etc.) on the website of RUC library, and by asking for help from RUC librarians and from my supervisors. A part of the materials are got from "Google" by typing the key words and then selecting the sources I find suitable for my study. Also, in some of the books I have borrowed and read, the bibliographies at the end of the books are of great help because they very often provides full and precise references which in turn facilitate me in seeking for other relevant materials.

1.2.2. About the empirical background

Documentary analysis

Documentary analysis in this case involves the study of the related documents in order to gain a clear insight into the research issue. Five main groups of document are selected for analysing: Vietnam's documents, Danida's documents, Plan International's documents, Sida's document, and Young and Hamshire's document. Each group of document plays an important role in helping me with answering the working questions.

Vietnam's documents compose of political documents (decisions, decrees, resolutions, policies, etc.) and industrial utilities' documents (history of enterprises, operation reports, etc.). The political documents elaborate the functions, obligations and rights of especially the state stakeholders engaged in Việt Trì Project; provide information about how environmental protection generally and the management of wastes and wastewater are particularly concerned in Phú Thọ province's political documents; and clarify the democratic rights that people at grassroots level have which are crucial to the sustainability of Việt Trì Project.

The *political documents* provide information about the existing regulations and policies relating to environmental protection in Phú Thọ province. The *industrial utilities' documents* provide a brief history of the involved enterprises and the environmental status at their manufactories. The documents simultaneously highlight and help to reason out the industrial utilities' existing serious environmental problems caused by their production activities.

Danida's documents consist of guidelines, anti-corruption documents, DEA-Vietnam documents, and Việt Trì Project-related documents co-authored with COWI A/S. See Table below.

Name of documents	Relevance of the documents to the study	The documents were found via
Guidelines for Sector Programme Support Evaluation Guidelines	Providing basic information on how sustainability is interpreted, and whether it is a targeted and well-reflected matter in Danida's theoretical instruments	The Royal Danish Embassy in Hanoi Danida's website
Danida Action Plan to Fight Corruption 2003-2008, Danida's Anti-corruption Code of Conduct, and Annual Anti-corruption Report 2004	Giving an impression of what kind of anti-corruption policy Danida has, whether it has been practised and what results have been obtained	Danida's website
DEA-Vietnam programme document and DEA-Vietnam Appraisal report Evaluation report by Scanteam of Norway	Concretising the planning for and designing of sustainability in a Danida environmental assistance intervention Providing objective evaluative opinions relating to how the sustainability of DEA-Vietnam as a whole was practised and what results were achieved	Mr. Jens Lorentzen, Chief Advisor of Danida's Centre for Competence Development
Project document, inception report, feasibility study reports, progress reports, completion report, etc. of Việt Trì Project	Providing fundamental information about Việt Trì Project	Mr. Morten Jørgensen, Senior Technical Advisor of Việt Trì Project

Table 1.1 - Danida's documents

Plan International's documents include Evaluation Technical Guides in which project sustainability is elaborated in details. Sida's document is concerned with Evaluation Manual where project sustainability is defined and factors which may affect sustainability are presented. Young and Hamshire constructed a so-called *Promoting Practical Sustainability* manual where they not only define the concept of project sustainability but also intensively introduce the factors that may affect project sustainability and the measures to make good those factors. All those documents give an insight into how sustainability in a specific aid intervention context is viewed and realised, and they accordingly contribute to the theoretical discussion about project sustainability.

The biggest advantage of using this method is I can quickly get access to the fundamental information that provides a preliminary basic understanding of the research issue without being present in the location where Việt Trì Project was carried out. However, there are a couple of major disadvantages which have to be considered carefully. First of all, analyzing sustainability of Việt Trì Project is more than just reviewing a pile of documents. Visiting the project sites, observing the operation and maintenance of the project benefits, talking with the ultimate beneficiaries and other involved stakeholders - both from the Vietnamese and the donor's sides - are of great importance to making an accurate and reliable analysis. Secondly, the existing documents are written by others, and I cannot assure whether they are

100% true by just reading and relying on them. Therefore, it is necessary that the subsequent methods are supplemented in order to strengthen the validity and quality of the study.

Site visits

In the period from 02.3.2006 to 12.4.2006, I carried out fieldwork in Phú Thọ province and Hanoi. During my stay in Phú Thọ province, I visited the six upgraded urban markets, the upgraded hospital wastewater treatment plant, the newly-built hospital wastewater treatment plant, the bio-gas plants, the results of the demonstration projects done at the industrial utilities, the Green Belt, and the upgraded environmental monitoring system aside from visiting the concerned authoritative institutions (see **Annex 1.1.** and **Annex 1.1.1** for full details of the visited sites). The visits are quite useful in the case of my study because I am investigating a process which involves a variety of stakeholders at different levels. They serve as a good opportunity for me to get a visual picture of the entire project, test the trustworthiness of the project documents I have reviewed, see how the given infrastructures-facilities-equipment things are run since the project termination, what the problems are in case they are not well-sustained and why. They are combined with the in-depth individual interviews and informal conversations below to make the intended analysis sufficient.

In-depth individual interviews

Carrying out interviews with a number of selected internal and external stakeholders both directly involved in and not involved in Việt Trì Project is expected to generate "live" data and enhance the quality of my study. The interviews help me understand in-depth different individual contexts within which Việt Trì Project is located, clarify and deepen the investigation of related details around the sustainability of Việt Trì Project, and reflect on improvement potentialities. Two kinds of interview are meant here: face-to-face interviews and interviews by phone organised in keeping with the convenience of the interviewees and interviewer (see **Annex 1.2** for details of the interviewees and the **Enclosure of Interviews, Informal Conversations and Correspondence** for full details of the interviews).

- Face-to-face interviews

Interviews with two concerned Danida staffs in Denmark help me understand the decentralised operating system within Danida through the division of functions and responsibilities of Danida staff in Denmark and Danida staff at the Royal Danish Embassy Vietnam; clarify some important points in the evaluation guidelines as far as sustainability is concerned; get a better understanding of DEA-Vietnam programme to which Việt Trì Project belongs; and make clear some crucial points in DEA-Vietnam's programme and evaluation documents. In the meantime, the *interview with the national programme officer of Danida at the Royal Danish Embassy in Hanoi* (Vietnam) brings about important information concerning Danida's actual participation in Việt Trì Project and accordingly help me

understand better and assess how Việt Trì Project's sustainability was prepared and implemented, and what responsibilities Danida has in connection with the sustainability of the project.

The local Vietnamese stakeholders in Phú Thọ province are indispensable stakeholders of Việt Trì Project. Whether Việt Trì Project is a success or failure, it concerns both Danida and the local Vietnamese stakeholders' participation and coordination in the entire process. By using the expression "local Vietnamese stakeholders", I am referring to the related people of Department of Natural Resources and Environment (DoNRE), Department of Planning and Investment (DPI), Department of Health (DoH), Department of Industry (DoI), Phú Thọ Provincial General Hospital, Phú Thọ Town General Hospital, Phú Thọ Environmental Monitoring Station, Việt Trì Urban Environmental Company (Việt Trì URENCO), 7 out of 12 industrial utilities directly benefited from the project, Market Management Teams of the six urban markets, Phú Thọ Market Management Board, and a biogas plant household. The interviews with them serve the purposes of finding out how their actual engagement in Việt Trì Project was; how resources were planned and distributed to Việt Trì Project and how they financially-institutionally-socially-technically prepared themselves to operate, maintain and develop the obtained outcomes at the project return-on-investment stage.

COWI A/S, the Danish international consulting company, was selected by Danida to provide technical assistance and financial management to Việt Trì Project. COWI A/S played an important role in partly ensuring Việt Trì Project's financial, institutional, social, and technical sustainability because it was involved in transferring technological knowledge to the local staff, enhancing the local staff's knowledge of financial management, building capacity for the local staff, and managing the project from beginning to the end. Interviews with *the Senior Technical Advisor of COWI A/S*, who functioned as Senior Technical Advisor to Việt Trì Project aim to get a clear impression of the project implementation process and of the local counterpart's capacity of taking over the project when it came to an end; to elaborate some project details which are unclear; and to get his viewpoints on the sustainability of Việt Trì Project.

Part of my study is to seek for some alternatives which can help improve the sustainability of Việt Trì Project and hopefully Danida's similar future projects in Phú Thọ province and Vietnam. One of the biggest and known international Non-Governmental Organisations (NGOs) which has been operating in Vietnam quite long, *Plan International*, is chosen as one of the sources. The idea is to examine its theoretical instruments and experiences with project sustainability. A few experienced project specialists who have been engaged in different projects funded by international organisations in Vietnam with positions like project manager, coordinator, consultant and officer are also interviewed for the purpose of getting a wider view and experiences of project sustainability from another angle.

- Interviews by phone

Some of the related stakeholders cannot be available for face-to-face interviews due to time or distance irrelevances. The field officer of Plan International in Phú Thọ province and the leader of Gát Market Management Board (one of the ultimate beneficiaries of Việt Trì Project), for instance, have to be talked to by phone because they cannot always be present in their office by the time I am available to interview them.

Informal conversations

The word "interview" itself or the nature of the interview sometimes may hinder the investigation process because either the interviewees do not want to be "interviewed" or "asked" in an official way, or the actual situation does not allow or is not convenient for the interviewer to make an official interview. The market vendors, for example, feel comfortable to talk to me informally if I am just a curious customer or a "civil-engineer-to-be". They will immediately feel nervous if I show up with a recorder or a notebook and a pen, introduce myself, and ask for their permission to raise some questions. I should, instead, play one of the two mentioned roles and have a chat with them. The needed information will be provided more easily (see **Enclosure of Interviews, Informal Conversations and Correspondence** for informal conversation details).

Correspondence

In some cases, it is not possible to talk to the intended interviewees due to distance inconvenience. The case of a relevant and experienced staff of CARE International being based in Cà Mau city in southern Vietnam, and an experienced project consultant working in Quảng Trị province in central Vietnam are two typical examples. Both of them have worked with development projects funded by international organisations for between 7-10 years and are thus able to share with me a great deal of interesting and useful information about project sustainability, yet they are not available to talk to me either face-to-face or by phone by the time I am able to make an interview with them. So we agree upon exchanging questions and answers by e-mails. This method consumes more time of the interviewees, but in return helps them arrange their ideas more clearly and better, and help me save my transcription time.

Moreover, during the period I am collecting information relating to Việt Trì Project, I exchange a couple of e-mails both with the national programme officer of Danida in Hanoi (Vietnam) and many e-mails the Senior Technical Advisor of COWI A/S. Each of the e-mails basically contains some questions or some unclear issues which need to be clarified. This way of getting information is both efficient and economical (see **Annex 1.3** for details of corresponded people and **Enclosure of Interviews, Informal Conversations and Correspondence** for correspondence details).

Personal professional experiences of working with development projects

Before I started the master education at TekSam, I had had a couple of years working with an international NGO called GVC (Gruppo di Volontariato Civile) as desk assistant and project assistant, and then for a local NGO called CSECHE-Hue (Centre for School Equipment and Humanitarian Education) as project advisor in Huế city – the capital of Thừa Thiên-Huế Province located in central Vietnam. While I was working for GVC, I was engaged in different integrated projects dealing with reduction of the rate of malnourished children in A Lưới mountainous district, improvement of the agricultural production conditions for people in Phú Vang district, poverty reduction in Hương Trà district, forest rehabilitation in Quảng Trị province, etc.

Especially in 2001, I was involved in the Asia Urbs VNM005 Development Project titled "*Urban Poverty alleviation in Hue in Connection with Heritage Preservation Promotion*" co-financed by the European Union and co-implemented by Ancona Municipality (Italy), Huế city (Vietnam), and Roskilde Municipality (Denmark) as a secretary. The practical idea of the project was to provide a pilot community of 50 families with basic infrastructures including a nursery, a kindergarten, primary education, a vocational centre, health care and a park. Those families were living and working on their boats but mooring them in the moat around the ancient citadel of Huế city or in environmentally-sensitive areas. Above all, the project also aimed to create a partnership among Asian and European cities and exchange expertise and valuable experiences.

During the period I was working with the above-mentioned projects, I did learn a lot of things about how to plan and design a participatory project efficiently; under what circumstances corruption occur and how; why it is difficult to prevent corruption when a project involves various authoritative partner stakeholders at different levels; and so forth. Those experiences are very useful grounds for me to do a good fieldwork and analyse the sustainability of Việt Trì Project.

1.3. Outline of the Thesis

The entire study is organised into five chapters which can be summed up as follows (**Chapter 1** is not included here because I have just presented it).

Chapter 2 is devoted to a deep theoretical discussion of these two important concepts: sustainability and project sustainability. In the first part of the chapter, I will present and debate some interesting interpretations and definitions of sustainability while in the second part, I will dig into the meaning of project sustainability and its dimensions, the factors that may affect project sustainability, and how to promote project sustainability. Here, I will highlight some shortcomings of the theoretical standpoints, especially the local participation

and ownership factor and the anti-corruption factor, and thereby express what my viewpoints are.

Chapter 3 sets up a historical framework for the study by providing some important background information about Phú Thọ province and Việt Trì city, describing the main environmental problems caused by industrial and urban development that the province and the city have been facing, and presenting what the existing conditions and regulations of managing those environmental problems are. At the same time, it also tries to explain why Danida is intervening in those environmental problems and then goes into some fundamental details of Việt Trì Project.

Chapter 4 is an analysis of the sustainability of Việt Trì Project by methodologically combining the theoretical and empirical backgrounds. The four dimensions of project sustainability - financial, institutional, social and technical - and the factors that affect project sustainability are the cornerstones of the entire analysis while the prerequisites for the sustainability of Việt Trì Project will be presented at the beginning. The chapter will end off with a discussion of three outcomes of Việt Trì Project which are found strange and thus questionable.

Chapter 5 presents and debates some recommendations for enhancing the sustainability of Việt Trì Project and Danida's similar projects carried out in Vietnam in future. The recommendations are based on what have been learnt from Việt Trì Project, and some practical and useful experiences shared by one of the biggest and most known Non-Governmental Organisations that has been operating in Vietnam for a long time - Plan International - and some experienced project experts. I will also reflect upon the challenges of the recommendations in connection with Danida's specific context. The chapter rounds up main conclusions of the analysis and introduces two possibilities for further studies.

1.4. Summing-up

This chapter has presented the research problem and the structure of the thesis, and discussed in details the methods that are found relevant for the study. In the next chapter, I will continue with an in-depth theoretical discussion.

2. Theoretical Framework

The aim of this chapter is to create a theoretical background for the empirical analysis. An in-depth theoretical discussion of these two important concepts sustainability and project sustainability will be presented in two different parts. As the central term of my study is project sustainability and the target of the study is to analyse the sustainability of a Danida's project, the first part about sustainability will basically concentrate on an examination and discussion of the various interpretations and definitions of the term. In the second part, I will dig into the meaning of project sustainability and its dimensions, the factors that may affect project sustainability, and how to promote project sustainability. Some shortcomings of the theoretical standpoints will be highlighted, especially the local participation and ownership factor, and the anti-corruption factor that has widely been recognised as a threat to project sustainability. The chapter, in other words, attempts to answer this working question: *What are sustainability and project sustainability, and why project sustainability?*

2.1. Sustainability

Sustainability is a controversial and multi-dimensional concept which has generated continuous and multi-disciplinary discussions. So far, there has been a wide variety of interpretations and definitions relating to this concept, yet in the limited scope of this study, I would like to discuss four definitions which I am interested in and will later be useful for the project sustainability discussion.

"*…development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* (The World Commission on Environment and Development 1987:43)
"…the capacity of system to maintain output at a level approximately equal to or greater than its historical average, with the approximation determined by the historical level of variability" (Lynam and Herdt 1989:384)
"*…the ability of a system to produce outputs that are sufficiently well-valued so that enough inputs are provided to continue production"* (Goldsmith and Brinkerhoff 1990:13-14)
…the long term preservation of the viability of the system, its components and their resilience. In a dynamic system, this includes not only the ability to resist externally enforced changes, but even more the ability to recover from and to adapt to pressures. The resulting state of the system is not a static balance, but a dynamic process of permanent change, i.e. a development process" (Spangenberg *et al* 2000:21)

Table 2.1 – Definitions of sustainability

The definition by the World Commission on Environment and Development (henceforth: the Commission) closely relates sustainability to development. Even though the actors of the

development process is not explicitly stated, the definition provides a general basis to understand the term "*sustainable development*", and this probably explains why it has been adopted popularly by many international aid agencies. The first part of the definition - *meeting the needs of the present* - implies to satisfy economic needs, political needs, social, cultural and health needs; while the second part - *without compromising the ability of future generations to meet their own needs* - implies to reduce the population growth (especially the population growth in third world countries), to use non-renewable resources in an environmental-friendly manner, to minimise the utilisation or the waste of non-renewable resources, and to use renewable resources properly and effectively.

The definitions by Lynam and Herdt as well as Goldsmith and Brinkerhoff share a major interesting similarity: all of them refer to the system's ability to maintain or continue the obtained results, and give hint that strategic plans and actions are needed for the maintenance or continuation. However, Lynam and Herdt just touch upon "*the capacity of system to maintain output*" without considering the ability of the system to produce the outputs by itself, to be a part of, and to "develop" or to "reproduce" the outputs (the third one is crucial for a development process). In Goldsmith and Brinkerhoff's definition, we have production and maintenance capacities of the system which create a kind of production-consumption-maintenance circle repeated over and over, but "*sufficiently well-valued*" does not mean the same as "*sufficiently and efficiently valued*". In the latter case, it is quantitatively and qualitatively implied that possibilities of damaging or negatively influencing the quality of the coming production(s) are limited. Goldsmith and Brinkerhoff's definition also lacks the implication of developing or reproducing the outputs.

Spangenberg *et al*. comes up with a development-oriented understanding of sustainability by allocating sustainability in system analysis, and in this way, he provides a more elaborated definition of sustainability. The expression "*the long term preservation of the viability of the system*" is, to a high extent, similar to the first part of Lynam and Herdt's definition, yet the ability to produce and promote the outputs is not implied even though the resistance, recovery and adaptation capacities are stressed.

From what I have found, it seems like there are no single and sufficient definitions of the term sustainability which has received critiques for being ambiguous and opening to a wide range of interpretations which can sometimes be confusing. Simon and Morse (1999) have the viewpoint that the meaning of sustainability is complex and uncertain, and that since people differ in the social, economic and environmental conditions in which they live, to have a single definition which one attempts to apply across this diversity could be both impractical and dangerous. Our world is diverse *per se*, therefore, the flexibility as to what sustainability means can also be great strengths (Simon and Morse 1999:9-10). Kidd also argues, "*there is not, and should not be, any single definition of sustainability that is more logical and productive than other definitions"*. Instead, *"those who use the term*

'sustainability' should always state precisely what they mean by the term" (Kidd 1992:3). However, as how I understand and in accordance with what I have just discussed above, sustainability can be defined as follows:

> *Sustainability is the capacity of the human society to produce, maintain and develop outputs in a manner which satisfies both the present and future generations' needs.*

In the next discussion about project sustainability, I will get back to this definition at relevant points in order to highlight the relationship between the two terms.

2.2. Project sustainability

2.2.1. The meaning of and reasons for project sustainability

Project sustainability is a relatively recent concept but has predominantly been paid attention to, defined, and become an increasingly central theme in many international aid organisations and experts' manuals and practices. They are the Danish International Development Agency (Danida), Plan International, the Swedish International Development Cooperation Agency (SIDA), the United Nations Development Program (UNDP), the World Bank's Independent Evaluation Group[3], Young and Hamshire, etc. The fact indicates that theorists have not yet devoted a relevant and sufficient position for project sustainability in their sustainability forum, probably because they give little or even no consideration about a concept which is "*far more about operation and maintenance ('or institutional and managerial sustainability') than about any concept of ecological sustainability*" (Pugh 1996:25), and the international aid organisations and experts possibly have another concern of what they are interested in and doing than the theorists. As a consequence, this sub-section presents and analyses some findings and discussions about project sustainability beyond the theorists' discussions.

An examination of the manuals, operation strategies, plans and/or working tools of the afore-mentioned international aid organisations and experts, shows that project sustainability is defined in different ways (see Table 2.2 below), yet the core message that the definitions above have in common relates to the continuation or maintenance of the benefits/the achieved outcomes of project/programme activities after the project/programme has come to an end. Here, it is important to note that I am not discussing sustainability of humanitarian or emergency relief efforts but interventions with long-term development objectives. Just to give a simple example, if Danida, Sida or the World Bank finances Vietnam a three-year project to build an industrial wastewater treatment plant in a certain locality, it is naturally

[3] The Independent Evaluation Group (IEG) is an independent unit within the World Bank; it reports directly to the Bank's Board of Executive Directors. IEG assesses what works, and what does not; how a borrower plans to run and maintain a project; and the lasting contribution of the Bank to a country's overall development.

expected that after the plant has been constructed and the project is completed, the operation of the plant should continue rather than fall into immediate decline.

"…is an indication whether the positive impacts are likely to continue after external assistance has come to an end" (Danida 1999:61)
"*…the extent to which the objectives of the program will continue to be met after the program is over*" (Plan International 2002b:24)
"*…the likelihood that the benefits from an intervention will be maintained at an appropriate level for a reasonably long period of time after the withdrawal of donor support*" (Sida 2004:35)
"…durability of positive programme or project results after the termination of the technical cooperation channelled through that programme or project." (UNDP)[1]
"…reflects the resiliency to risks of a project as measured by the likelihood that its estimated net benefits will be maintained or exceeded over the project's intended useful life" (The World Bank's Independent Evaluation Group)[1]
"…the continuation of benefits after major assistance from a donor has been completed." (Young and Hamshire 2000:7)

Table 2.2 – Definitions of project sustainability

Relating the definitions above to the definitions of sustainability, especially my own definition, I have presented and discussed in the first sub-section, there are few but important shortages. First of all, opposite to sustainability where the central stakeholder is "*the system*" or "*the present*" and "*future generations*", the stakeholders in project sustainability is not explicitly expressed. Obviously, the obtained project outcomes cannot continue by themselves but such involved partner stakeholders as the partner institution, the ultimate beneficiaries, etc. will make them continue. Therefore, it is crucial that the directly involved partner stakeholders should be clearly stated in project sustainability definition. Next, sustainability should, as I argued earlier, deal with not only the ability of the system to maintain the outputs but also the ability of the system to produce and develop or reproduce the outputs. In the case of project sustainability, it should be the same, because if the directly involved stakeholders, especially the ultimate beneficiaries, are not engaged in and have no capacity of producing the outputs, it will be difficult for them to continue and promote those outputs. My definition of project sustainability, hereby termed as "*aid intervention*" to make sure that both projects and programmes are included, will thus be as follows:

> *Sustainability of an aid intervention is concerned with the capacity of the directly involved partner stakeholders to produce, maintain and develop the achieved results over a period of time after the intervention has come to an end.*

As far as the question "why project sustainability" is concerned, it is firstly *"in many ways a high-level test of whether or not the aid intervention has been a success*" (Danida 1999:60). Secondly, it is important to stress that development projects take place in developing countries, and many of them deal with hunger eradication and poverty reduction, education,

health, etc. by providing the recipient locality with infrastructures, facilities, non-refunded grants or loans, knowledge of the related field(s) and so forth. The majority of such projects need and ought to produce lasting results because if not, the impacts of the intervention on the recipient locality will on the one hand be very immediate and temporary, and hence will not help the beneficiaries improve their problems in the long run. On the other hand, project sustainability is a way to demonstrate that the partner's institution and the ultimate beneficiaries' were, to a relevant extent, involved in the entire project preparation and implementation processes; that their technical and institutional capacities of organising and managing the obtained outcomes have been enhanced; that their financial capacity of maintaining and developing the outcomes has been discussed, analysed and worked out a suitable solution; and especially that their awareness of being responsible for and contributing to what have been delivered has been confirmed and strengthened.

2.2.2. Dimensions of project sustainability

Different international aid organisations term project sustainability dimensions differently, yet they in general refer to five dimensions which are financial, institutional, technical, social, and environmental (the last dimension is normally included in non-environmental related projects/programmes).

F*inancial sustainability*

The Asian Development Bank (ADB) reckons that this dimension has three aspects: (i) the availability of adequate funds to finance project expenditures, especially funds drawn from the government budget; (ii) the recovery of some of the project costs from the project beneficiaries; and (iii) the financial incentive necessary to ensure participation in the project[4]. In the meantime, the Global Alliance for Vaccines and Immunizations (GAVI) believes *financial sustainability*: (i) is a shared concern and a shared responsibility of both governments and their development partners; (ii) requires matching financing to evolving program objectives; (iii) includes concepts of (a) adequate and (b) reliable financial resources, focusing not only on the quantity of funds but also on how well they reach the level they are needed; and iv) is related to both mobilization and efficient use of financial resources[5].

In Plan International's Evaluation Technical Guides, a list of questions are raised, the majority of which are Yes-No questions (**Annex 2.1**), and from these questions, it can be understood that *financial sustainability* is concerned with clear and full awareness and

[4] Asian Development Bank: http://www.adb.org/Documents/Guidelines/Eco_Analysis/financial_sustainability.asp. Assessed 02.01.2006

[5] The Global Alliance for Vaccines and Immunizations (GAVI): http://www.who.int/immunization_financing/tools/en/FSP_Guidelines_April%202004_En.pdf. Assessed 02.01.2006

participation of the ultimate beneficiaries and related institutions in the budget planning and implementation processes of the project activities, with complete discussions about all the costs concerned incl. maintenance costs, and with investigation and consideration of economic perspectives which the ultimate beneficiaries may have in order to sustain the outcomes.

From the Asian Development Bank's definition of *financial sustainability*, points (ii) and (iii) make good sense whereas point (i), which is also Danida's central meaning, does not. In the majority of development programmes and projects given to developing countries, the financial contribution from the partner country or the recipient locality is usually in kind (labour, land and things alike) rather than in cash. That is normally what the partner country/the recipient locality can do. Depending on the types of programme/project, some partner countries/ recipient localities sometimes commit to covering the maintenance costs or part of the operational costs, or paying salaries for the local programme/project staff. This mostly has to do with the fact that many developing countries have very limited budgetary resources and they thus have difficulties in spending part of their existing resources on contributing to a development programme/project. Therefore, it is unrealistic to expect that the partner country/the recipient locality can financially sustain the outcomes without considering some specific possibilities which can lead to *financial sustainability*.

Plan International and the Global Alliance for Vaccines and Immunizations seem to have included a variety of relevant perspectives even though the latter does not include the roles and the engagement of the ultimate beneficiaries who evidently are the key actors of the sustainability task. Combining these two institutions' perceptions of *financial sustainability*, we can come to a common definition, which is:

> *Financial sustainability is concerned with the ability of the donor, the authoritative partner stakeholder, and the ultimate beneficiaries to plan for, mobilise and utilise appropriately and efficiently both domestic and external resources on a sufficient, reliable and strategic basis for the purposes of achieving the set targets, maintaining and developing the obtained outcome*s.

This definition will be exploited in **Chapter 4** where I analyse the sustainability of Việt Trì Project.

Institutional sustainability

Institutional sustainability has been of major concern of the general process of sustainable development, and the term refers to the self-reliance, strength and longevity of institutions (OECD 1989; Goldsmith and Brinkerhoff 1990). In Danida's operational documents, a definition of the term is not found, yet from its Guidelines for Sector Programme Support, DEA-Vietnam Programme Document and the Project Document of Việt Trì Project, it can

be understood that *institutional sustainability*, in accordance with Danida's viewpoint, is concerned with the organisational and managerial capacities of the involved institutions to maintain the outcomes; accordingly, when a programme/project is proposed, an in-depth analysis of the organisational structure and the institutional capacity of the involved institutions is also required.

There are three things which I would like to point out here. Firstly, Danida seems to be focused on the organisational and managerial capacity of the authoritative partner institutions, not that of the ultimate beneficiaries. Secondly, there is no clear implication in Danida's viewpoint concerning whether it is necessary for its program/project to be consistent with the local and national governments' development plans and targets, which is an important element to engage the active participation and enhance the responsibilities of the authoritative partner institutions in the aid activities. Thirdly, Danida does not appear to regard its aid intervention as a process where the ultimate beneficiaries' influence on the local government should be strengthened, which is an indicator of developing the achieved outcomes.

Plan International has no concrete statement of institutional sustainability either, but in its Evaluation Technical Guides, a list of mainly Yes-No questions directed towards this dimension are raised (**Annex 2.2**). The questions focus on the roles and the engagement of the involved authoritative institutions on the aid intervention, the consistence of the aid intervention in relation to the local and national governments' development targets, the possible enhanced influence of the ultimate beneficiaries on the local government, the appropriate organisational and institutional structure existing at the ultimate beneficiaries to take care of implementing the aid intervention activities, maintaining and developing the attained outcomes (Plan International 2002a:4-5).

To a large extent, I agree with Plan International's viewpoint, yet I am also concerned the problem of undermining the existing organisational and managerial system at the recipient locality, and of introducing a completely new organisational and managerial system to the recipient locality without respecting its culture, tradition and wishes. Failing to solve any of those two problems would be disadvantageous for the *institutional sustainability* desire. My statement of *institutional sustainability* is thus as follows:

> *Institutional sustainability is about the organisational and managerial incentives and capacities of the directly involved institutions, including the authoritative partner institutions and the ultimate beneficiaries, to implement, maintain and develop the achieved outcomes of the aid intervention.*

Technical sustainability

In accordance with my findings, *technical sustainability* seem to exist as clear hints of what the term is concerned with rather than as a definition. In Danida's Guidelines for Sector Programme Support, for example, technical sustainability is about the appropriateness of the technologies chosen for the aid intervention (Danida 1998:50). Plan International, in its Evaluation Technical Guides, means the same thing but with an extra point: the ultimate beneficiaries must have access to the technical input required to sustain the project. Both points are interesting because if the chosen technologies are not appropriate with the particular conditions of the recipient locality, it will be difficult to talk about sustainability, seen from the technical perspective. Furthermore, if the ultimate beneficiaries have not had the opportunities to approach the technical details in relation to the attained outcomes, they will obviously not be able to maintain them, not even to develop or reproduce.

To my understanding:

> *Technical sustainability is concerned with the adoption of appropriate technologies for the purpose of maintaining and developing the achieved outcomes.*

Back to the industrial wastewater treatment plant example, we will see that the technology chosen to apply for the plant is necessarily suitable for the actual capacities of the recipient locality, namely technical, financial and managerial capacities to take over the plant when it is handed over. The choice of a very high or too expensive technology will be irrelevant, and this may potentially lead to the consequence that the outcomes cannot technically (and also institutionally) be maintained and developed.

Social sustainability

In many documents of international aid organisations, the social dimension is regarded as a factor which affects the sustainability of the aid intervention; nevertheless, too few of them state exactly how they understand *social sustainability* and what it indeed means. In Plan International's Evaluation Technical Guides, a checklist of questions directing at social sustainability are introduced even though the organisation does not attempt to define the term (**Annex 2.3**). The questions address some social aspects of sustainability which have to do with the active and voluntary participation of the ultimate beneficiaries in the preparation phase of the aid intervention (how and to what extent), the inclusion of the poorest and/or the most marginalised beneficiaries in continued access to the achieved benefits, the equal access of ultimate beneficiaries of different genders, and the respect of cultural, political, religious and social aspects of the recipient locality (Plan International 2002a:6).

All those points directly show how and how far the social aspects are concerned and integrated in an aid intervention. Yet I do not completely agree with the first point. To the best of my knowledge, the participation and the level of participation of the ultimate beneficiaries in the preparation phase is crucial, but that is not enough, for lack of their

sufficient and efficient participation in the implementation and phase-out stages will affect the quantity and quality of the outcomes, thereby affect the sustainability. My definition of *social sustainability* will therefore be as follows:

> *Social sustainability is concerned with the sufficient, equal and efficient participation of the ultimate beneficiaries in all related phases of the aid intervention which will in turn have positive effects on their continued access to the achieved outcomes.*

In this perspective, social sustainability is actually very close to and can be merged with institutional sustainability.

Environmental sustainability

The term "*environmental sustainability*" is very often met and discussed in the context of programmes and projects whose objectives and activities have no concern to tackle environmental problems. Again, I have difficulty in getting a wider viewpoint from different international aid organisations regarding what *environmental sustainability* refers to. In Danida's Guidelines for Sector Programme Support, a short presentation of environmental assessment implies that environmental sustainability relates to achieving the aid intervention targets without causing negative impacts on the environment, and this is done by carrying out an Environmental Impact Assessment (EIA) during the identification and preparation phase. If the EIA report tells that the intervention is going to cause severe negative effects on the environment and there are no solutions to minimise them, the intervention must be either totally rejected or thoroughly re-designed (Danida 1998:54-57).

The point is reasonable but not sufficient because there is no implication of preventing the potential negative environmental impacts in long-term perspective. That means in the long run, the achieved outcomes will potentially have sustainability problems, seen from the environmental angle. Just to give an example, if Danida finances Phú Thọ province to build up a health care solid wastes disposal landfill, it is important that the technical solutions must take into account all the possible environmental impacts of the landfill, not only until Danida has withdrawn from the project area but also in future. Otherwise, the constructed landfill will not be environmentally sustainable. My statement of *environmental sustainability* is as follows:

> *Environmental sustainability relates to achieving, maintaining and promoting the aid intervention outcomes without causing negative impacts on the environment both in the short-term and long-term perspectives*.

2.2.3. Relationship among the dimensions of project sustainability

At this point, it is necessary to discuss the relationship among the dimensions of project sustainability because even if the related authoritative partner institutions and the ultimate

beneficiaries have enough funding or a suitable financial plan to maintain and develop the project outcomes, the complete sustainability objective cannot be obtained if they lack either technical or institutional capacities, or even both of them, and vice versa. Neither can the target be met if the ultimate beneficiaries have not actively and efficiently participated in all project phases, especially the preparation phase. The situation can also get worse if the environmental aspect (in the case of non-environmental projects) has not been considered and serious impacts on the environment due to the project activities are unavoidable.

As I mentioned earlier, not many international aid organisations and experts have attempted to debate the dimensions of project sustainability, yet several of them touch upon the factors that can affect the sustainability of their projects/programmes (called as "*sustainability factors*"). Most commonly, they talk about policy support measures, technological factor, environmental factor, social-cultural factor, institutional factor, economic and financial factor, local participation and ownership, awareness building and training, and external political and economic factors (Danida 1999; Sida 2004; Young and Hamshire 2000). Plan International also has the tendency of using "*factor*" rather than "*dimension*". In fact, such factors as technological factor, environmental factor, social-cultural factor, institutional factor, and economic and financial factor are very similar to the dimensions of project sustainability in terms of content. In the case of Danida, for example, "*technical sustainability*" (Danida 2001a:57) and "*choice of technology*" (Danida 1999:88-89) actually mean the same thing; or "*financial sustainability*" (Danida 2001a:57) and "*economic and financial aspects*" (Danida 1999:89-90), "*institutional sustainability*" (Danida 2001a:57) and "*institutional aspects*" (Danida 1999:89-90).

After having read both their manuals and programme/project documents and reports, I found out that they use the term "*factor*" in their manuals and "*financial sustainability*", "*institutional sustainability*", "*technical sustainability*", etc. in their programme/project documents and reports. To me, "*factor*" and "*dimension*" in this context are two different things. "*Factor*" refers to a phenomenon presumed to affect project sustainability while "*dimension*" relates to a parameter required to define the characteristics of project sustainability. We can say "the factors that affect the dimensions of project sustainability", and it is wrong to say "the institutional factor that affects the institutional sustainability" because they are the same thing. Just to give an example about "*factor*" and "*dimension*". Participation from the counterpart side is a factor which can affect any of these four dimensions of sustainability: financial, institutional, social and technical because if the directly involved partner stakeholders do not sufficiently and effectively participate in a project, it cannot be secured that they will be able to overtake and develop the outcomes due to lack of incentives, financial considerations and solutions, organisational and managerial skills, technical knowledge, etc.

In the sub-section below, I will present some factors which can influence project sustainability.

2.2.4. Factors affecting project sustainability

A review of manuals and working tools prepared by Danida, Sida, Young and Hamshire show that there are a certain factors which may affect the sustainability of a project, and those factors are defined on the basis of their practical experiences of working with development aid. Some similarities and differences are found among the factors they present.

- *Policy support measures, Partner Country priorities, and Partner government and donor policies*

By using the term *Policy support measures*, Danida implies the *commitment* of the recipient country, which is expressed in form of "*agreement on objectives, the scope of support to responsible organisations and the willingness to provide financial and personnel resources*" (Danida 1999:88), and is based on the mutual understanding of interests. *Commitment* is the key word and deemed to be among the most important determinants affecting the fruitfulness of Danida's aid interventions.

Sida utilises the expression *Partner Country priorities* to address the consistence of the aid intervention(s) with the partner country's development plans and strategies. It believes that if the donor bases the aid intervention(s) on the partner country's development plans and strategies, the aid intervention(s) will have higher opportunities to be sustained (Sida 2004:35) because it means the engagement, responsibilities and commitment feasibility from the partner country's side in connection with the aid intervention(s) will be higher.

Young and Hamshire distinguish the partner government policies and the donor policies, namely the partner government policies can have significant effect on the sustainability of the obtained outcomes through the policy environment and policy fit whereas the donor can have influence on how contracts are prepared, duration of funding and what is funded. In accordance with Young and Hamshire's experiences, funding policies of the donor very often ignore to support the operation and maintenance costs, and they trust that such ignorance can have adverse impacts on sustainability.

It is very sensible that the project should be backed up by the partner country's commitment, consisted with the partner country's development priorities, and supported by the donor's funding policy for the reasons that Danida, Sida, Young and Hamshire have provided, and for they will contribute to the financial and institutional sustainability of the project. Nevertheless, in the case of donor's funding policy, it is not always relevant that the donor should be responsible for maintenance costs, because this is also against the original meaning of *financial sustainability*, and as a result render the partner stakeholders depend

passively on its funding. The donor should instead get both the authoritative partner institution and the ultimate beneficiaries in the project from beginning, discuss with them about different financial possibilities to maintain and develop the outcomes.

- *Partner country ownership and Participation, Local participation and ownership*

Sida uses the expression *Partner country ownership and Participation* to refer to "*the active participation of the partner country stakeholders in the planning, implementation and follow-up of development activities*" (Sida 2004:35) that will in turn stimulate the local ownership. Similarly, *Local participation and ownership* in Young and Hamshire's manual are concerned with the active involvement and support as such from male and female stakeholders directly involved in the programme or project. They furthermore realise that donor-led and top-down projects in general fail to yield sustainable benefits due to inability of leading to stakeholder ownership and commitment. Their realisation is supported by the World Bank, which admits that "*many past assistance efforts, including some of its own, failed because the agenda was driven by donors rather than by the governments it was trying to assist*"[6].

On the grounds of my former experiences of working with various development projects as well as the shared experiences of some project experts and Plan International during fieldwork, it can be said that a voluntary, sufficient and efficient participation, which then brings about a sufficient and efficient ownership, is of first and foremost importance to sustainability, because it will make the directly involved stakeholders, especially the ultimate beneficiaries, realise from start that the aid intervention is not just something coming "from outside" but something being a part of their life. These stakeholders will become more engaged in the project activities and have a higher responsibility sense of what they are involved in. A very important thing is their real and active participation will help prevent corruption. In this perspective, I agree with Young and Hamshire. However, it is not always the truth that a top-down project does not result in sustainability because there are some projects whose top-down approach is highly relevant, and vice versa. Yet a donor-led project, in reality, usually hinders local participation and subsequently ownership.

It is very interesting that Sida, Young and Hamshire stress the importance of participation and ownership of the counterpart. This factor, to a high extent, relates to the financial, institutional, social and technical dimensions of project sustainability. But there are some shortages in their viewpoints, which are at what stages of the project and how the ultimate beneficiaries should participate, and what the challenges of their participation are. I will return to these elements in **Chapter 5** where I present some recommendations based upon the empirical study.

[6] www.worldbank.org/projects

- *Awareness building and training*

Young and Hamshire trust that appropriate training for identified target groups is normally regarded as a main strategy for achieving sustainable benefits. The training should be started at the right time, conducted throughout the programme/project, and allowed for repetition. As far as awareness is concerned, it should be carried out early at the design stage, and then during the implementation, it can include other types of media and group events, such as workshops, seminars, newsletters, community meetings, radio, TV, etc. as a way to disseminate project information and create networking among stakeholders. This factor is reasonable because it is a way to improve the target groups' awareness of the problems being intervened, solve few of the challenges I have just mentioned above about participation of the ultimate beneficiaries, and help strengthen the institutional and social dimensions. The factor is closely related to the institutional and social dimensions of project sustainability.

- *External political and economic factors*

Young and Hamshire are particularly concerned about some risks which may affect the project sustainability, such as external political and economic factors, internal political factor both in the donor country and the recipient countries, and natural catastrophes. They argue that we do not operate programmes and projects in isolation from the wider world around them. In an unstable political or economic environment, both internally and externally, it will be difficult to achieve sustainability. Changes in government policy or lack of direction within the executive may make sustainability efforts impossible. The overall level of development of the recipient locality can also influence the prospects of sustainability, because if the local economy is at a very low and unstable level, the operation and maintenance costs cannot be secured. In that case, no commitments with the donor will make the resources available. Moreover, external economic shocks and natural disasters like a monetary crisis or a serious earthquake can frustrate a sustainability strategy and expectation.

The consideration of the external political and economic factors is very sensible even though these factors are not always a reality for development projects/programmes.We have an example of Danida's sharp funding cut-back in connection with DEA-Vietnam programme which caused negative impacts on the continuation and financial sustainability of a number of projects belonging to the programme, and it was a really good and useful experience. A sudden change with the political structure either in the recipient country or the donor country may lead to a sharp alteration in the agreed plan with the recipient partner and this can affect the sustainability.

2.2.5. What are the missing factors?

All the factors introduced by the above-mentioned appear to be sound and thorough, but they are not enough. The factors presented below are very important to sustainability, but they are

either not spelled out or not sufficiently referred to in any of the examined manuals, working tools and documents.

- *Insufficient and implicit addressing and analysis of sustainability throughout the project cycle*

In order that a project becomes sustainability and has clear perspectives of being achieved, I have the viewpoint that if sustainability is not a clear and desired target of the project, it will risk to exist in the project as an "additional spice of a dish" or even just a word "on the paper". Project sustainability, the factors that may affect project sustainability, and the measures to overcome those factors must be identified, sufficiently and explicitly addressed, and scrupulously analysed from the very early phase of the project cycle - Identification and Preparation. During the Implementation phase, the measures have to be practised and improved (if necessary), and at the Completion phase, results of and lessons learnt from the implementation of the measures have to be summed up so that it can be assessed how far sustainability has been reached and in what way it can be applicable to future projects. The addressing, discussion, analysis and implementation of sustainability must be written down in different project documents, such as identification report, project document, appraisal report, inception report, progress reports, and completion report.

- *Corruption*

Corruption is a very old and popular phenomenon existing as a cultural, economic, political and social issue in both developed and developing societies which has increasingly drawn much international attention in recent years. Even though it is sometimes believed to promote economic growth and boost political development (Theobald 1990:116), it allows those with money or connections to bend the law or governance rules in their favour, thereby corrodes economic development and growth, escalates poverty level, undermines the legitimacy of the public service, damages reputation and investment potential of a country, destabilises democracy and governments, weakens moral values[7], etc.

There are many definitions of corruption, but probably the most official and clearest one must be that of Transparency International which defines it as "*an abuse of entrusted power for personal gain*"[8]. In a joint study with my study-mate John Momanyi Birongo about water governance in Kibera (Kenya) in 2005, I did find out that the word has been discussed under different labels: *public corruption* (the misuse of public office for private gain), *private corruption* (e.g. between individuals in the private sector), *administrative corruption* (corruption that alters the implementation of policies), *political corruption* (corruption that influences the formulation of laws, regulations and policies), *bribery* (an offer of money or

[7] http://www.anticorruption.info/cost.htm
[8] http://www.ti-bih.org/en-GB/default.aspx?TabID=45

favours to influence a public official, *nepotism* (favouritism shown by public officials to relatives or close friends), *fraud* (cheating the government through deceit); and *embezzlement* (stealing money or other government property).

Particularly in the context of development aid, corruption has been recognised to be a problem which distorts development aid investments and impedes their efficiency and success (Aguilar *et al* 2000; Dudley 2000; Cooksey 2000). As development aid projects are normally perceived as coming "from outside" and are subject to little external supervision, they provide easy targets for corruption. The Utstein Anti-Corruption Resource Centre (U4), a web-based resource centre working in associate partnership with Transparency International, means that development aid can be undermined by corruption because it can divert resources to other purposes rather than for which it was granted, and it can seriously influence the efficiency and effectiveness of the aid accordingly. To the best of my knowledge, corruption can not only divert resources to other purposes but also change the target recipient of a project because many international aid organisations, especially Governmental Organisations do normally apply the top-down approach to select a recipient locality. In that case, the related national authoritative bodies will be the one to decide which locality is "qualified" to be the recipient depending on the commission level they are offered.

The U4 also believes corruption can "*involve a variety of actors including public officials and private sector representatives in the recipient country as well as aid agency staff themselves. These actors sometimes work in collusion with each other to divert aid resources*"[9]. In the case of development aid projects, corruption is not the problem of a single individual but a group of individuals and even an entire corrupt system. A study made by Dudley shows that honest individuals are directly and indirectly affected by corrupt individuals, and promotions and salary increases are frequently used by a corrupt boss to force his employees to join in corrupt practices. Weak employees are normally those most vulnerable to the enticement because they must consider the consequences of their refusal on their family. The corrupt boss also prefers loyalty to qualification when selecting staffs to participate in a given project because that would be more beneficial for him.

A report made by Aguilar *et al* in 2000 reveals that fraud and corruption can occur in the World Bank's projects in these stages: project design, procurement, implementation, and financial management whereas the U4 asserts that corruption can occur at any stage of aid delivery (see Table 2.3 in the next page).

The points mentioned in Table 2.3 are very well-considered, and they reveal that there are quite many tricks to cheat and corrupt. My former experiences of working with development projects show that very often, the authoritative partner stakeholders try to highlight the

[9] http://www.u4.no/helpdesk/helpdesk/queries/query76.cfm#1

necessity of supporting the recipient locality to upgrade the existing infrastructures, to purchase new equipment and facilities, etc. in the project proposal. When the project proposal is approved, the authoritative partner stakeholders most of the time insist on taking care of the procurement. Whether they are able to provide red bills (the official bills that include Value Added Tax - VAT - and have an official stamp) or not, it does not matter because they can manipulate the procurement procedures.

Project selection stage: a diversion of resources from the social sector to major construction and infrastructure projects, or uneconomical projects can happen due to "*opportunities for financial kickbacks and political patronage*"[1].
Project design stage: at this stage, project requirements may be overstated or tailored to benefit a particular supplier, consultant, contractor or private party. Manipulations with procurement, financial management, supervision mechanisms, and project timing can also happen (Aguilar *et al* 2000:3-4).
Procurement stage: the corruption risk in this stage is deemed to be especially high. The authoritative aid recipients can make attempts to limit competition by advertising inadequately, declaring short bidding time, misusing of legal and administrative requirements, employing unsuitable bidding procedures or procedures that violate the confidentiality of bidding, etc.; while the bidder may also apply its own corrupt practices to manipulate the procurement process through unjustified complaints, collusion schemes, misleading bids, and malicious front-loading (Aguilar *et al* 2000:4-6).
Implementation stage: corrupt and fraudulent practices during this stage usually involve collusion between the supplier-purchaser and the contractor-employer. Their malpractices are normally corrupt contract amendments; unjustified complaints; overbilling/overpayment; fraudulent justification of delays; provision of equipment or goods of lower than the specified quality; and outright theft of materials, equipment or services (Aguilar *et al* 2000:7).
Financial management stage: corruption or fraud can compose of a wide range of actions, such as duplication of payments, alteration of and tampering with invoices and other supporting documents, adulteration or duplication of accounting records, lack of supporting records, ineligible payments, misuse of funds, unauthorised advance payments without guarantee, unauthorised use of project property, excessively high operational expenditures, and unreported discounts (Aguilar *et al* 2000:8).
Project evaluation stage: in order to render recipient governmental officials and/or aid agency staff to turn a blind eye to sluggishly implemented project, uncompleted contract requirements, undelivered equipment, facilities and services, and other instances of malpractice, kickbacks may be given. This fraudulent action is meant to ensure future flow of development aid resources[1].

Table 2.3 – Project stages where corruption can occur

The missing element in Aguilar *et al*'s report and U4's discussion is the exclusion of the ultimate beneficiaries from the construction and procurement and/or installation process (the implementation process). The authoritative partner stakeholders usually try to limit the ultimate beneficiaries in this process to make sure that their scheme will not be known in details.

- *Inefficient participation from the donor's side*

Some donors, especially governmental donors, have the tendency to limit the participation of their staffs in the project because they believe that by doing so, the ownership of the

counterpart will be higher and the intervention will not appear too donor-led. This is not always correct, especially at the Identification and Preparation phase where the donor staffs have to investigate, understand thoroughly and assess the proposed support before a final decision is made. Just communicating with the authoritative bodies is not adequate because the project outcomes will finally be taken over by the ultimate beneficiaries. Very often the authoritative bodies have "other interests" than the ultimate beneficiaries have and it is rare that their "other interests" benefit the ultimate beneficiaries. Failing to be engaged in this phase efficiently may lead to lack of understanding of the ultimate beneficiaries' needs and wishes, lack of inclusion of indispensable local stakeholders and thus affect the sustainability.

The arrival of an appraisal team composing of external national and non-national specialists within a very short duration cannot work out all those issues for three reasons. Firstly, there is a language barrier which surely hinders a sufficient and satisfactory communication between the external non-national specialists and the involved partner stakeholders. Secondly, an appraising duration of one or two weeks for a large project is insufficient for the appraisal team to communicate with the authoritative bodies at different involved administrative levels, not even the ultimate beneficiaries. Thirdly, even if the appraisal team can manage to spend some time on the ultimate beneficiaries, an appraising duration of one or two weeks for a large project is not enough to create self-confidence in the ultimate beneficiaries. Can they tell the appraisal team all about their needs, wishes and so forth? All in all, only the local staffs of the donor know about the project area, speak the national language, understand the local culture, have experiences of working with local people, and especially have knowledge of national and local corruption practices can take care of this task.

2.2.6. Promoting project sustainability

Promoting project sustainability means to improve the factors that can affect project sustainability. Here I would like to focus on promoting the factors that are in favour of improving the sustainability of Việt Trì Project and Danida's similar projects in Vietnam in future. They are the inclusion of sustainability in the project cycle, the participation and ownership factor, the anti-corruption factor, and the efficient participation from the donor's side.

Promoting the inclusion of sustainability in the project cycle

Sustainability has to be sufficiently and explicitly addressed and analysed at different phases of the project, and written down in different project documents because such documents are produced as a logical chain. If it is missed in most of or all of those documents, sustainability risks to either be forgotten during the implementation process or exist only "on paper".

Promoting participation and ownership factor

Both Plan International and the project experts I have talked to during fieldwork in Vietnam share the opinion that the relevant and careful steps taken during the first phase of the project - Identification and Preparation - is crucial to the sustainability or success of the project[10]. All of them especially emphasise the participation of the ultimate beneficiaries in this phase, which is the most efficient way to secure their ownership of the project benefits later on and to prevent corruption, because the more the ultimate beneficiaries know about the project details, the more their capacity of implementing the project activities and taking over the project outcomes will be increased, and the more corruption possibilities will be minimised. In this regard, a clear and participatory project design from the preparation step is considered indispensable.

How the directly involved partner stakeholders should participate is another question which has to be clarified in keeping the particular situation of each project and its recipient locality. The common point is, the more closely the project objectives target at the ultimate beneficiaries, the more intensively the ultimate beneficiaries should participate, aside from the participation of the directly involved authoritative institutions. The ultimate beneficiaries ought to and need to feel that the project is theirs from beginning, and they must be engaged in the whole activity cycle. When the project has come to an end, it will be these people who take care of maintaining and developing the benefits. Without having been included in the entire process and thus felt not related to the obtained benefits, the risk of discontinuing the benefits will be high and the expected sustainability will be threatened.

Promoting the anti-corruption factor

Motives of corruption in the context of development aid are the same as in general: either demand-driven or greed-driven. When an aid intervention is thought as money coming "from outside", then the corrupt individuals will of course "take a bite" of the "common cake". The boss with high salary would like to have something "extra" to upgrade his house, fulfil his dream of owning a car, or send his son/daughter abroad for studying; while his staffs with low salary would like to have something "extra" to compensate for the low salaries that have not been enough for them to cover their children's school demands, to have a mobile phone, or to upgrade their old-fashioned motorbike. When both the boss and the staff are involved in the corrupt system, they will defend each other when necessary. In some cases, a chain corrupt system is created, namely if a project given to a district after having passed the national and provincial channels, the "cake shares" are already understood – the province will have a "bite", so do the related national authority and the district authority. Such things happen because those who sit at the higher level know exactly what the inferior authorities do, and it becomes difficult to "take a bite" alone.

[10] A project cycle may slightly differ from donor to donor in terms of steps, yet it commonly has three fundamental phases: Identification and Preparation, Implementation and Monitoring, and Completion. Each phase consists of a number of steps, some of which are compulsory/mandatory while some are optional.

Bastøe and Masst (2001) suggest that the institutional system of the partner countries should be improved via institutional building and financial management reforms in order to make the public authorities as well as bureaucrats at local and national levels become more accountable to the donors and their own citizens, and set up a more effective and transparent system. They also suggest that donors should encourage their partner countries to improve transparency in public administration and give citizens easier access to information. Furthermore, the donors themselves must have thorough knowledge of their partner institutions so as to be able to identify weak links and danger zones which are especially vulnerable to corruption before entering into cooperative agreements and providing the grants. These three suggestions are sensible because they are the core issues of good governance - a concept which is synonymous with zero-corruption.

Enhancing participation of the ultimate beneficiaries is another way to limit corruption. Many examples with construction and infrastructure projects in Vietnam have shown that when such projects are launched, not only the officials of the upper echelons, the local project staffs or the contractors but also the workers are corrupt. "*Everybody's business is nobody's business*". If the ultimate beneficiaries are fully informed of and engaged in the projects, they will keep an eye on what is going on. At least, the quality of the construction works will be better because both the workers and the contractors cannot cheat them.

Another proposal is international donors should coordinate with one another to cause pressure on the partner country by making an official declaration that they will withdraw the committed Official Development Assistance if corruption, in connection with their projects and programmes, happen; and requiring the partner country to present specific action plans to minimise corruption in development aid and keep them informed of the implementation progress. This proposal is based on a recent scandal where the big Project Management Unit 18 (PMU 18) corruption case was discovered and international donors had taken action right afterwards. Vietnam was required to establish a Corruption Control Committee, to present and implement some concrete corruption control strategies and plans, and to keep the international donors informed of what have been done and how. In practice, the pressure seems to work. Vietnam has been working on the requirements and has just elected a deputy prime minister responsible for corruption control.

The last proposal is not to get unnecessary administrative levels involved in an aid intervention. That is to say, if a project is given to a district, the donor should work directly with the district instead of moving from the national, provincial to district level, because the "common cake" will potentially be divided up.

Promoting the efficient participation from the donor's side

For the reasons I have explained, it is crucial that the donor pays attention to enhancing the participation of the donors' local staffs at the Identification and Preparation phase. Aside from adequate and effective communication with the authoritative bodies, the staffs have to spend enough time and labour on communicating with the ultimate beneficiaries involved by themselves, not via the authoritative bodies, in order to avoid misunderstanding, conflict of interests, irrelevant support proposal, etc. Certainly if the authoritative bodies have "other interests" than the ultimate beneficiaries, they will oppose the deep intervention from the donor's side at that phase, yet the donor needs to insist, or else the ultimate beneficiaries will not benefit the project outcomes to the best.

2.3. Summing-up

This chapter have reviewed and discussed a number of theories and standpoints which will be applied in the entire study. Even though the discussion of project sustainability goes beyond theorists' sustainability forum due to the fact that I did not succeed in finding any theories about project sustainability, I hope the discussion of international aid organisations and experts' standpoints on that concept has solved the problem.

3. Historical Framework

The main aim of this chapter is to create a historical framework for the study by trying to answer these two working questions: *What are the main environmental problems caused by industrial and urban development in Phú Thọ province and why is Danida intervening? What is Việt Trì Project concerned with?* I will begin with presenting some important background information about Phú Thọ province and Việt Trì city, describing the main environmental problems caused by industrial and urban development that the province and the city have been facing, and presenting what the existing conditions and regulations of handling those environmental problems are by reviewing the *Report on the Environmental Status Quo of Phú Thọ Province* and the project documents of Việt Trì Project. Such information helps to explain why Danida is intervening in Phú Thọ province's environmental problems.

After having clarified why Danida should intervene in Phú Thọ province's environmental problems, I will introduce the project *"Industrial and Urban Development in Viet Tri city"* by selectively reviewing a number of Việt Trì Project-related documents which provide basic information about the main aims, the inputs, the components, the involved stakeholders and their engagement in the project, the organisation and the achieved outcomes of the project. I also look at some local political decisions and especially the paper about the administrative system in Vietnam I made in 2005 to elaborate the functions, obligations and rights of especially the authoritative stakeholders engaged in Việt Trì Project. A review of some Reports on Environmental Status made by the involved industrial utilities collected during fieldwork supplements information about the environmental problems at the utilities which are not mentioned in the Cleaner Production Assessment Reports. And finally, results of my fieldwork in Việt Trì city will be integrated in the information of Việt Trì Project-related documents to better show the investment in, the activities, the participation and the real outcomes of the project.

3.1. Environmental problems caused by industrial and urban development in Phú Thọ province

Vietnam, the South East Asian country with approx. 83 million inhabitants, has been undergoing rapid political and socio-economic changes since the initiation of the "*đổi mới*" (renovation) programme in 1986. The reform has led to a rapid economic growth during the 1990s which accounts for a considerable reduction in poverty over the last decade, an increased role for the private sector, speedy rise in small-scale entrepreneurship in urban and

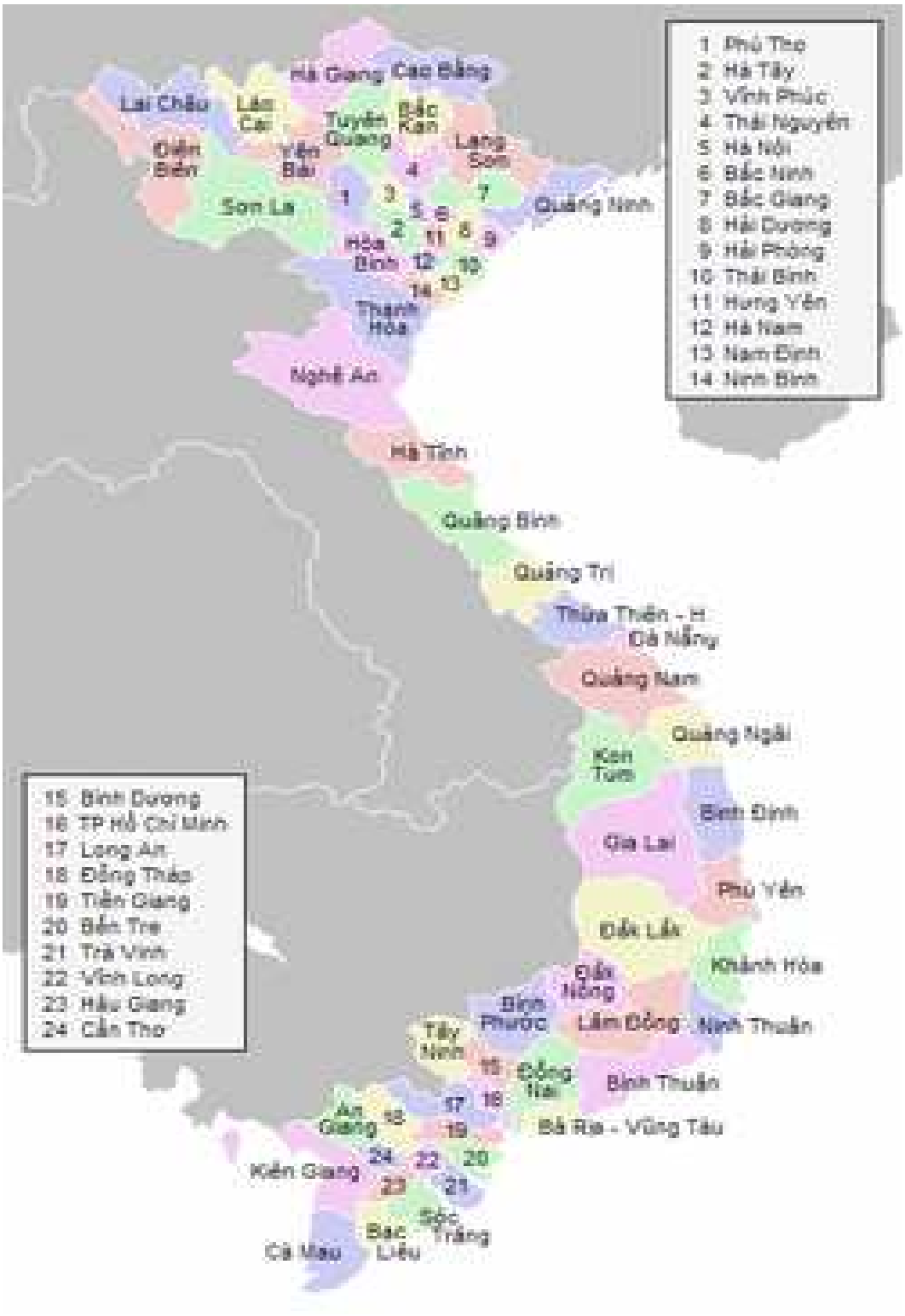
rural areas; an increased voice for civil organisations, and a decentralisation and opening up to participatory processes concerning private sector management.

As a part of the economic growth, the urbanisation and industrialisation in Vietnam have been developing quite fast. In 1990, for instance, there were only 500 urban towns, but in 2004, this number rose to 671, divided into 4 municipalities, 25 cities, 59 towns, and 583 townships. Urban population in 1990 was approx. 13 million, but in 2004, this figure was almost doubled - about 22 million[11], accounting for ca. 27% of the total population. The national population growth forecast further shows that the population rate in the urban area will make up 33% in 2010 and 35% in 2020. As regards industrialisation, the number of industrial zones has grown from 80 in 2002 to 120 in 2005, and the activities of these industrial zones have been contributing considerably to the GDP of Vietnam[12].

Located in the northern uplands of Vietnam, Phú Thọ province was founded in 1997 as a result of the division of a larger province - Vĩnh Phú - into Phú Thọ and Vĩnh Phúc. With an area of 3,519.6 km^2, Phú Thọ province consists of 1 capital city which is Việt Trì city, 1 town, 10 districts, 14 wards, 10 townships and 250 communes (Tổng cục thống kê - General Statistics Office 2005). It borders Tuyên Quang and Yên Bái provinces to the north, Hòa Bình province to the south, Vĩnh Phúc province to the east, and Sơn La province to the west (see map below). The population of the province is 1,314,500 which make up 1.7% of Vietnam's population, and the population density is 373.47persons/km^2 (Tổng cục thống kê-General Statistics Office 2005). The workforce makes up about 60% of Phú Thọ's total population.

The economy of Phú Thọ relies on the industry-construction sector, which accounts for 38.1% of the total GDP; the service sector 33.7%; and the agriculture-fishery-forestry sector 28.2% in 2004. The average income of Phú Thọ residents in the same year is 4,378,000 VND/person/year (equivalent to 290 USD in accordance with the USD rate at that time), which is very low compared to the average personal income level in Vietnam in the same year - 500 USD/person. Phú Thọ is thus deemed to be one of the poorest provinces in Vietnam generally and the northern uplands particularly even though the geographical position appears to be advantageous for it as regards economic exchange relations and industrial development (Uỷ ban nhân dân tỉnh Phú Thọ - Sở tài nguyên và môi trường tỉnh Phú Thọ 2005:14-15).

[11] Tổng cục thống kê (General Statistics Office): http://www.gso.gov.vn/default.aspx?tabid=387&idmid=3&ItemID=3158. Accessed in December 2005.
[12] Bộ tài nguyên và môi trường. 2005. *Báo cáo hiện tượng môi trường quốc gia năm 2005 - Phần tổng quan*. Việt Nam.



Administrative map of Vietnam in which Phú Thọ province (No.1) is included[13]

Regarding *industrial development*, Phú Thọ is among the very first Vietnamese provinces where the establishment and development industrial zones and complexes have taken place quite aggressively. Today, Phú Thọ has four industrial zones and 6 industrial complexes with

[13] http://vi.wikipedia.org/wiki/Vi%E1%BB%87t_Nam

63,089 registered enterprises. Main activities at these zones and complexes deal with mechanics, assembling, electronics, textile, garments, footwear, chemicals, consumption goods, agricultural-forest products, high quality construction materials, minerals, etc. (Uỷ ban nhân dân tỉnh Phú Thọ - Sở tài nguyên và môi trường tỉnh Phú Thọ 2005:16-19). In accordance with Phú Thọ's industrial development orientation and policy, the province should attempt to become an industrialised province which can contribute to fulfilling the country's industrialisation and modernisation targets. In order to realise this ambition, Phú Thọ has so far completed the planning and developed industrial zones in the north, the south and the west of Việt Trì city; and been in the process of planning and developing industrial zones and complexes in 7 out of 10 districts.

Urban development has been taking place in Việt Trì city - the capital of Phú Thọ province, Việt Trì town and townships, but most noticeably in Việt Trì city, which was founded during the 60s at the confluence of Red River (sông Hồng), Lô River (sông Lô) and Thao River (sông Thao), and became capital city of Phú Thọ province in 1997. Its total area is 7,125.75 km^2 distributed to 10 wards and 7 communes (Việt Trì city's Statistics Bureau, 2005). The current population of Việt Trì city is 139,701, making up about 15% of the province's total population. The latest statistical figure shows that the urban growth rate in 2004 is 1.56% compared to 0.41% in 2003 and 1.14% in 2002 (Uỷ ban nhân dân tỉnh Phú Thọ - Sở tài nguyên và môi trường tỉnh Phú Thọ 2005:11), which indicates the urban population growth has been on its rise in the recent years.

In parallel with the industrial and urban development, Phú Thọ has however been facing serious problems with air pollution and inefficient planning and management of solid wastes as well as wastewater generated by industrial-domestic-health care activities.

The **surface water source** from rivers, lakes, and ponds, which is also the primary domestic water source for Phú Thọ residents, has been polluted at an alarming level because of either the untreated or the poorly-treated wastewater coming from the many thousands of industrial utilities based in Việt Trì city and other districts of Phú Thọ. The current industrial wastewater volume in Phú Thọ is approx. 6,000 million m^3 per year, which is high in comparison with the number of industrial utilities in Phú Thọ, yet neither the province itself nor the industrial utilities have industrial wastewater treatment plants. Some industrial utilities treat their wastewater with chemicals, some treat with microbiological method, and many do not treat at all.

In addition, the **domestic wastewater** is not treated before being discharged to the canals, sewers, ponds or lakes. Neither is the health care wastewater, which contains high volume of suspended matters, organic matters (BOD_5 - Biochemical Oxygen Demand - and COD - Chemical Oxygen Demand), NH_4^+, and coliform, treated but just let flow freely. In the whole province, there is only one wastewater treatment plant existing at Phú Thọ Provincial

General Hospital, yet the plant is not able to meet NH_4^+ treatment norms due to old technology. The wastewater from the industrial, domestic and health care origins finally merges with one of these three rivers: Red, Đà and/or Lô[14].

The unavoidable consequences are the negative impacts of surface water pollution on the community's health, on agricultural and aqua-cultural activities, on the water quality of the afore-mentioned rivers, and of course on the eco-system. The story known nationwide about Thạch Sơn controversial "cancer village" located nearby Lâm Thao Super Phosphates Factory and at the other end of Bãi Bằng Paper Mill (the biggest paper mill in Vietnam) with unusually high percentage of residents dying of cancers (34.86% out of 100 of death cases in the recent years), uncultivable fields and heavily polluted lakes and ponds is the most horrible evidence when talking about the bad impacts of surface water pollution in Phú Thọ[15].

Air pollution in connection with industrial and urban development is the next hot issue of the province. As mentioned above, many industrial utilities were established during the 60s - a period where industrial technology development in Phú Thọ was very limited despite the remarkable support from China. The investment in machines, equipment and facilities serving industrial production purposes is basically productivity-prioritised and pays little or even no attention on environmental impacts. Nowadays, the machines, equipment and facilities at most industrial utilities are very obsolete whereas the ongoing technological renovation at the industrial utilities takes place quite slowly. It is stated in the *Report on the Environmental Status Quo of Phú Thọ Province* that the industrial utilities are the top air-polluters, of which the chemical industry, the cement and construction materials industry, the paper industry, and the mineral exploitation industry are the most serious ones (Uỷ ban nhân dân tỉnh Phú Thọ - Sở tài nguyên và môi trường tỉnh Phú Thọ 2005:33-35).

As far as **solid wastes** are concerned, the total volume of industrial hazardous solid wastes and non-hazardous solid wastes has been on the rise (Table 3.1), but the collection and management of industrial solid wastes have not been implemented because the province is in lack of both a suitable disposal landfill and a treatment plant, whereas the industrial utilities themselves can not afford to build up a treatment plant on their own. Therefore, the industrial utilities have been collecting the wastes by themselves and then either burying or accumulating the wastes behind or on the sides of their production area (Uỷ ban nhân dân tỉnh Phú Thọ - Sở tài nguyên và môi trường tỉnh Phú Thọ 2005:43-45). Part of the "useful wastes" like broken bricks, ceramics, etc. is given away to those who use them for domestic building purposes.

[14] Project Document of the "*Industrial and Urban Development in Viet Tri city*" project and the *Report on the Environmental Status Quo of Phú Thọ Province* made by Department of Natural Resources and Environment (DoNRE) in 2005.
[15] http://www.nea.gov.vn/thongtinmt/noidung/tt4_10_11_05.htm. Accessed: 28.05.2006.

Year	2002	2003	2004
Amount of industrial hazardous solid wastes (tons)	28,500	40,500	48,000
Amount of industrial non-hazardous solid wastes (tons)	81,450	97,700	130,304

Table 3.1 - Volume of industrial hazardous solid wastes and non-hazardous solid wastes in Phú Thọ province from 2002 - 2004[16]

The **domestic wastes** in Việt Trì city, whose total volume is 232,733.13 tons in 2004 (increasing 113,073.13 tons vis-à-vis 2003 and 126,233.13 tons vis-à-vis 2002), are not sorted from origin and not gathered in a proper manner by the residents either. All kinds of domestic wastes from cooking, gardening, etc. to construction activities taking place at every household, office, enterprise, health care utility, restaurant, etc. are mixed up and dumped altogether to the streets to be collected by Việt Trì Urban Environmental Company (henceforth: Việt Trì URENCO) daily, and then treated at Vân Phú Domestic Wastes Recycling Plant (henceforth: Vân Phú Plant) located 6 km northwest of the city's centre but close to a residential area and a military base (site visit).

About 35% of the total collected wastes cannot be recycled, however. They are day after day accumulated on the same hill where Vân Phú Plant is located and waiting in vain for a disposal landfill[17]. All the health care solid wastes are partly discharged as domestic wastes and partly buried around the health care utilities because of unavailability of collection, classification and treatment

The non-reclaimable wastes are dumped on the hill…

systems for solid wastes. Earlier, there was a health care wastes incinerator at Phú Thọ Provincial General Hospital which failed to meet the required environmental norms from beginning. The incinerator has thus been closed down for a couple of years[18].

3.2. Existing related environmental conditions and regulations in Phú Thọ province

In May 2000, Phú Thọ PPC promulgated *Decision on Regulating the Management of Making, Considering and Ratifying, and Implementing Environmental Impact Assessment Reports in Phú Thọ Province*. According to the Decision, any projects, socio-economic development planning and plans, and production utilities and enterprises providing services

[16] Uỷ ban nhân dân tỉnh Phú Thọ - Sở tài nguyên và môi trường tỉnh Phú Thọ. 2005. *Báo cáo hiện trạng môi trường tỉnh Phú Thọ năm 2005*, pp. 44.
[17] Site visit and Interview with Mr. Đặng Xuân Tạo - technical and production planning officer of Vân Phú Wastes Recycling Plant.
[18] Site visit and Interview with Mr. Phạm Nhật Thịnh, head of the Administration Section, Phú Thọ Provincial General Hospital

(briefly referred to as *cơ sở* - *utilities*) have the obligation to make EIA reports in which they have to describe clearly the existing technological possibilities at place and environmental measures thereto, the financial requirements to implement environmental pollution solutions, and the duration. The EIA reports have to be submitted in a so-called Provincial Considering and Deciding Council. When they are approved, the *utilities* have to implement immediately some pollution mitigating measures, such as to organise the production activities in a proper manner, to make internal industrial sanitation regulations, to plant trees in their production area, to practise preliminary collection and treatment of wastes, to make financial and technical plan for thorough pollution treatment measures, etc.

In August 2002, *Decision on Regulating the Management of Industrial Wastes and Harzadous Wastes in Phú Thọ Province* was issued by Phú Thọ PPC. In accordance with this Decision, Việt Trì People's Committee is responsible for building up an industrial solid wastes disposal and treatment landfill called "*Trạm Thản concentrated industrial solid wastes treatment zone*" (henceforth: Trạm Thản zone) in Trạm Thản commune, Phù Ninh district (about 40 km far from Việt Trì city), and bringing it into use before the 1st of January 2003. It is stated in the Decision that all kinds of industrial wastes and hazardous wastes in the province must be collected and transported to Trạm Thản zone, and Việt Trì URENCO is assigned to take care of the transport and treatment. The *utilities* have the responsibility of classifying the wastes from origin, disposing a temporary storage place, and either having their own specialised truck for transporting the wastes to Trạm Thản zone or making a contract with a conveyer, namely Việt Trì URENCO. In fact, by the time I carried out the fieldwork in March 2006, Trạm Thản zone remained unfinished due to lack of funds.

Both Decisions include an implementation provision where any utilities violating the Decisions shall be fined in line with violation degree, but not stating how much the fines are. Also, the management and treatment of wastewater is not regulated in form of a Decision or something alike.

Concerning urban domestic wastes, there have not been any supporting means to assist the households in gathering the domestic wastes properly and sorting them from origin before the wastes are collected by Việt Trì URENCO. The urban residents themselves are not aware of why they should do so either. Waste containers are disposed in front of public offices, enterprises and health care utilities, but not households or restaurants. When the day is about to end, people put all the wastes they have produced during the day in front of their house where Việt Trì URENCO's staff will pass by and do the collection. Some of the wastes are kept in nylon bags while others like gardening and construction wastes are fully exposed (site visits). Waste collection fee is imposed on every household, office, enterprise, health care utility, restaurant, and it is Việt Trì URENCO who takes care of the fee collection.

As far as health care wastes and wastewater management are concerned, there exist no clear regulations regarding the management and treatment of health care wastes. All health care utilities heavily depend on the health care fees, whose total amount is spent on medicines (about 70%); surgical appliances, machines and medical instruments, and analytical and scanning services, management fees, and salaries and awards for the staff (about 30%). The fees are normally not enough for covering the above-mentioned items, let alone health care wastes and wastewater management. Yet both Department of Health and Phú Thọ PPC have no other financial sources to support the health care utilities, and they can hardly get access to loans for equipping the utilities with relevant systems for health care wastes and wastewater management (Uỷ ban nhân dân tỉnh Phú Thọ - Sở khoa học, công nghệ và môi trường tỉnh Phú Thọ 2003:12). As a result, the health care utilities have to bury the solid wastes that are not collected as domestic wastes by themselves, and let the wastewater flow freely without any preliminary treatment.

3.3. Why is Danida intervening?

As mentioned earlier, Phú Thọ province has been taking different actions in order to become an industrialised province. Its capital, Việt Trì city, is a major industrial city where big industrial utilities like Lâm Thao Super Phosphates Factory, Bãi Bằng Paper Mill, Vĩnh Phú Textile Company, Việt Trì Ceramic Company, Việt Trì Chemical Company etc. are located and have been under operation for over 30 years. Both the industrialisation and urbanisation processes are going on aggressively, yet Phú Thọ province is confronting with very thorny environmental problems. From what have just been described above, it is obvious that the province needs to solve as soon as possible the following main issues:

- To improve the existing management and treatment conditions of industrial, domestic and health care wastes, wastewater, as well as air pollution control;
- To enhance the environmental awareness of public - private institutions and households, thereby enhance the cooperation among these stakeholders in terms of wastes and wastewater management, and pollution control;
- To improve the enforcement of the promulgated general regulations (mentioned above) and define clearly the fines for different levels;
- To promulgate a Decision on the management and treatment of wastewater and another Decision on the management and treatment of health care wastes, and bring these Decisions into practice as soon as possible.

Under the circumstances where the province lacks both financial means, investment from the national authorities, and relevant-sufficient-efficient capacity to work out those issues, any appropriate external interventions should seriously be considered and appreciated. In 1996

and 1998, Việt Trì city alternately received a United Nations Environmental Programme/United Nations Industrial Development Organisation (henceforth: UNDP/UNIDO) project which supported the environmental and sanitary conditions in the city, and a German Official Development Assistance (henceforth: German ODA) project which intervened in the water supply and wastewater sector of the city.

In the case of the UNDP/UNIDO project, an Industrial Pollution Strategy (2000-2005) was adopted but never fully implemented. Though a large potentiality for implementing cleaner production technologies in industrial utilities were recognised, only four industrial utilities took part in the cleaner production initiatives and accordingly benefited from the project. Furthermore, three out of four officers trained in environmental monitoring and management capacity were transferred to Vĩnh Phúc province, not Phú Thọ province, when Vĩnh Phú province was split up in 1997. Whereas in the case of the German ODA intervention, a detailed report on priority measures for wastewater disposal for the urban centre of Việt Trì city was prepared as a part of the intervention, yet it was, due to financial constraints, finally decided to concentrate on the water supply (Danida 2001c:22-23).

The majority of the emergent environmental issues of both Phú Thọ province and Việt Trì city therefore remain severe despite the willingness to cooperate of the provincial and municipal authorities. The fact suggests that further external interventions are still and highly needed.

Danida's assistance to Phú Thọ province and thereby Việt Trì city in terms of industrial and urban development took shape during year 2000. The assistance was built on and closely linked to the data provided by and lessons learnt from the UNDP/UNIDO and German ODA projects. In March 2001, a Project Document was finalised and the assistance was thereby named "*Industrial and Urban Development in Viet Tri city*" (Việt Trì Project). In July 2002, Việt Trì Project was officially started.

3.4. The project *"Industrial and Urban Development in Viet Tri city"*

The **main aims** of Việt Trì Project were to increase the environmental planning and management capacity, environmental awareness, and the cooperation among community representatives, industrial utilities and local authorities as regards solving environmental problems in Việt Trì city; to practise some demonstration projects which serve the purposes of bettering the environmental and sanitary conditions in a number of markets and residential areas; and to create a Green Belt which was supposed to function as a buffer zone between the industrial zones and residential areas. Furthermore, a number of action plans and draft project documents for industrial and health care solid wastes management, industrial cleaner production management, and integrated management of domestic and industrial wastewater

would be prepared. An application for soft loan financing for domestic and industrial wastewater treatment facilities was also planned to be fulfilled.

Following the set aims, the project was arranged in **six components**, which are: (i) *Cleaner production & occupational health and safety, and industrial hazardous waste*; (ii) *Health care waste and wastewater*; (iii) *Industrial wastewater*; (iv) *Urban markets, tree planting, and urban environmental planning and management*; (v) *Community awareness and pilot projects, information and educational material*; and (vi) *Environmental monitoring*. Some English courses for the project staff was regarded as an extra component – component vii.

In terms of **inputs**, Danida provided 18,518,178 DKK, which was spent on investment, procurement (including the interventions) and operational expenses. The Vietnamese counterpart contributed to working time of officials from provincial, city and ward authorities and agencies spent on meetings, training, and study tours; office facilities, electricity and local communication; and labour for ward-level demo-projects, which was provided by ward People's Committees and households (COWI A/S & Danida 2005b :22).

Việt Trì Project involved a large number of **stakeholders** at four levels: national, provincial, city and ward-commune. The Royal Danish Embassy in Hanoi acted as Danida's Representation in relation to the project.

At national level

Ministry of Planning and Investment (MPI) was the key stakeholder and simultaneously the national counterpart to Việt Trì Project. It was responsible for overall facilitation and coordination; strategic planning, investment support and financial arrangements; and overall monitoring (Danida 2001b:13).

At provincial level

There were four groups of stakeholder involved: (1) the authoritative bodies, (2) the hospitals, (3) the Environmental Monitoring Station, and (4) the industrial utilities (See Table below). The authoritative bodies were selected because one of the aims of the project was to increase their environmental awareness and environmental management knowledge, and then apply their enhanced environmental knowledge and integrate their environmental concerns into socio-economic development and planning. The chosen hospitals were the major hospitals in the province urgently in need of intervention in health care solid wastes and wastewater treatment, while the Environmental Monitoring Station was selected as it is the only institution in the province that takes care of environmental monitoring and is in need of being upgraded. The industrial utilities were selected based upon six criteria proposed by Viet Nam Cleaner Production Centre: i) they are polluting the environment; ii) the production conditions at place can affect human health; iii) they support new

technological solutions; iv) they have financial capacity to participate; v) they have competent technicians to participate; vi) leaders, technical managers, technicians and workers of the utilities are willing to continue the project outcomes in the long run (Interview with Mr. Đặng Đình Vượng). See **Annex 3.1** for more details about the provincial stakeholders.

No.	Provincial stakeholders	The stakeholders' involvement in Việt Trì Project
(1)	Phú Thọ Provincial People's Committee (Phú Thọ PPC)	Executing Agency
	Department of Science, Technology and Environment (DoSTE) Department of Natural Resources and Environment (DoNRE)	DoSTE acted as Implementing Institution at the beginning., yet this role was taken over by DoNRE in 2003 when DoSTE was divided into Department of Science, Technology (DoST) and DoNRE.
	Department of Health (DoH) Department of Industry (DoI) Department of Labour, Invalid Soldiers and Social Affairs (DoLISSA) Department of Construction (DoC) Department of Planning and Investment (DPI)	Leaders of Project Working Groups (PWGs). Facilitated the implementation of Việt Trì Project in accordance with their assigned functions, responsibilities and authorities
	The Management Board of Phú Thọ Industrial Zones	Participated in some of the workshops on Cleaner Production and Occupational Health Safety Was consulted in several times in relation to the tree planting and tending in the new industrial area
(2)	Phú Thọ Provincial General Hospital Phú Thọ Town General Hospital 13 district hospitals, clinics and health care centres	Were involved in the component about *health care waste and wastewater*.
(3)	Phú Thọ Environmental Monitoring Station	Was provided with a number of equipment and facilities, professional training courses and English language courses
(4)	Hữu Nghị Soldering Manufactory Minh Khai Tunnel Brick Manufactory Nghĩa Hưng Cotton-Yarn Company Ltd. Sông Lô Ship-building Factory Trí Đức Company Ltd. Việt Trì Ceramic Company Việt Trì Chemical Company Việt Trì Food Processing Factory Việt Trì Plywood Company Viger Brewery Vĩnh Phú Plastic Joint-Venture Company Vĩnh Phú Textile Company	Were involved in activities concerning general training and awareness improvement, in a comprehensive Cleaner Production and Occupational Health Safety training and assessment programme delivered by the Viet Nam Cleaner Production Centre, and in the development and realisation of Cleaner Production and Occupational Health Safety demonstration projects

Table 3.2 - The provincial stakeholders and their involvement in Việt Trì Project

At city level

Main stakeholders were Việt Trì People's Committee (Việt Trì PC) and Việt Trì Urban Environmental Company (Việt Trì URENCO). Six urban markets including Bạch Hạc, Dầu,

Gát, Gia Cẩm, Nông Trang, and Tân Dân were chosen to be upgraded. **Việt Trì PC** took care of planning and designing the project. **Việt Trì URENCO** was involved both in the component about *health care waste* and that about *urban environmental planning and management* where it was equipped with a specialized truck for transporting hazardous health care wastes from the hospitals, clinics and health care centres to Trạm Thản industrial and health care wastes treatment landfill, and contracted to create plant nearly 10,000 trees as a part of the Green Belt. The **six urban markets** belongs to the component about *urban markets* and were provided with new buildings concretised market floors, toilets, clean water and electricity supplies, and drainage system. See **Annex 3.2** for more information about the city stakeholders.

At ward and communal level

Main stakeholders at this level are ward and commune representatives (from People's Committees of wards and commune); such *mass organisations* as the Women's Union, the Youth Union, The Association of War Soldiers, the Association of Farmers, etc. They were involved in component five regarding *community awareness and pilot projects, information and educational material* deployed at nine beneficiary wards and communes, including Bạch Hạc, Bến Gót, Dữu Lâu, Gia Cẩm, Minh Nông, Tân Dân, Tiên Cát, Trưng Vương and Vân Cơ. More than 15,000 residents of those wards and communes attended hundreds of meetings about domestic wastes, wastewater, and planting and protection of trees; and in demonstration projects in which some sewers and public toilets were constructed, some waste-pipes were installed, a number of mini bio-treatment plants and waste-dumps were built, an amusement park was upgraded, more than a hundred of dust carts and waste containers were purchased, several hundreds of metres of lane were concretised, several hundreds of trees were planted, and 40 biogas plants were constructed (Project Working Group 5. 2005:1-4).

In terms of **organisation**, Việt Trì Project was organised in a way where a *Project Steering Committee* (PSC), a *Project Management Unit* (PMU), and Six *Project Working Groups* (PWGs) were established (see Chart 3.1 below). The Project Steering Committee (PSC) was created and chaired by the vice-chairman of Phú Thọ PPC, and it acted as the highest body of project organisation. The Project Management Unit (PMU) composed of a Project Director, a local Project Manager, and an international Senior Technical Adviser. The main responsibility of PMU was to take care of managing the project implementation, which is concerned with co-ordination and supervision of consultant specialists and contractors, procurements in general, reporting to the PSC and Danida, etc. The Project Working Groups (PWGs), whose members are listed in **Annex 3.3**, were proposed in accordance with the six major components and acted as assistants to the PMU. Besides, the international consultant company *COWI A/S Denmark* was entrusted to provide both technical assistance with a team of international and local specialists and financial management.

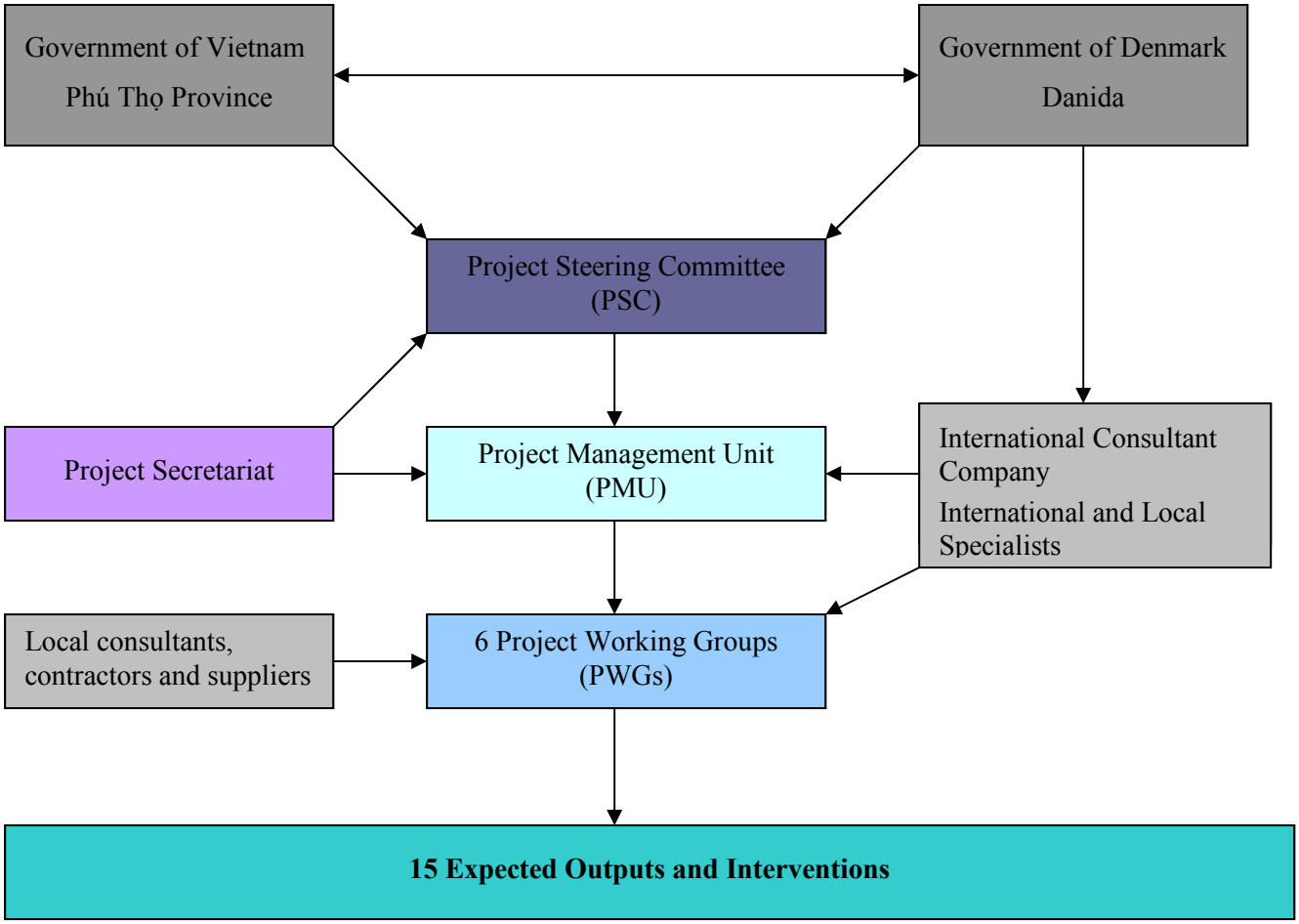


Chart 3.1 - Project Organisation[19]

In accordance with the Logical Framework (Logframe) of the Việt Trì Project Document, about 70 **activities** were planned in order to obtain 15 outputs (See **Annex 3.4**). Nevertheless, during the so-called "fact-finding mission" (COWI A/S, and Danida 2003a:20) carried out in March 2002 and the contract negotiations in May 2002, the Danish Embassy and the Vietnamese counterpart decided to make some necessary modifications, which indicates that the number of the original activities, the content of some of the activities, and the final results were altered. As stated in Việt Trì Project's Completion Report, ten major outcomes were achieved. For the purpose of my study, I would like to focus on the outcomes which I will analyse in the next chapter.

- A **new wastewater treatment plant** at **Phú Thọ Town General Hospital** was constructed (see picture below).

- The **wastewater treatment plant** at **Phú Thọ Provincial General Hospital** was comprehensively upgraded (see picture below).

[19] COWI A/S & Danida. 2005b. *Industrial and Urban Development in Việt Trì City. Completion Report.* pp. 64. Ministry of Foreign Affairs, Denmark

A part of the upgraded wastewater treatment plant at Phú Thọ Provincial General Hospital

The new wastewater treatment plant at Phú Thọ Town General Hospital

- Phú Thọ Environmental Monitoring Station (EMS) was upgraded and obtained ISO/IEC 17025:2001 accreditation (see pictures below).

Some of the equipment financed by Việt Trì Project

Ms. Tạ Hồng Yến, officer of EMS is starting the scanning spectrophometer financed by Việt Trì Project

- At **Minh Khai Tunnel Brick Manufactory**, **a new grinder** (see pictures below) which helps to make the most of the redundant soil was invested in to replace the old and inefficient crude roller. Thanks to the grinder, 10-15% of soil (equivalent to 35,000m^3, valuing 700 millions VND) is taken the advantage of, which implies that the mentioned amount of soil is no longer discharged to the environment; manpower is saved (10 operators); risk of working accidents is minimised to zero; the consumption of diesel and electricity is decreased, leading to decreasing of greenhouse gases (reduction of 125.5 tons CO_2/year in all); and dust emission is considerably decreased (Interview with Mr. Đỗ Thanh Tuấn, chief accountant of Minh Khai Tunnel Brick Manufactory; Viet Nam Cleaner Production Centre 2004i:1-3).

The grinder seen from the front side

The redundant soil is being exploited by the grinder

- At **Trí Đức Textile Company Ltd.**, **a Jet machine** (see picture on the right) in which the bleaching and dyeing processes take place was invested in. The Jet machine helps to improve the product quality; reduce the production time and hence production costs; reduce the wastewater volume (33m^3/ton of product); reduce the pollution load in the wastewater (2.2 kg of chemical/ton of product); reduce the reprocessing rate; increase the yearly turnover around 15%; and improve the working environment for the workers.

The Jet machine

(Interview with Mr. Phạm Văn Chính, technical manager of Trí Đức Textile Company Ltd.; Viet Nam Cleaner Production Centre 2004n:1-3).

- At **Việt Trì Ceramic Company**, **a heat recovery system** (see picture on the right) was installed, and the recovered heat has been used for mould drying. Thanks to this system, the company has been saving 50 tons of gas per month, which value 450-500 millions VND, and one third of operators; the volume of CO_2 discharged to the environment is reduced; and the working environment of the workers is remarkably improved.

A part of the heat recovering system

Furthermore, the company, from what it has learnt during its participation in Việt Trì Project, self-made a smaller heat recovery system which helps the company save 7 tons of gas per month. (Interview with Mr. Nguyễn Văn Minh, technical manager of Việt Trì Ceramic Company).

- At **Việt Trì Chemical Company**, **2 economizers** and **2 boilers** (see pictures below) recovering heat from gases were invested in. With these facilities, the company is taking the advantage of gases and controlling the water volume in the boiler as well as the volume of the steam. The exploitation of heat helps to save the coal consumption about 335 tons/year, and reduce the emission of CO, CO_2 (about 616.4 tons), S, SO_2, SOx, etc. (Interview with Mr. Đỗ Quốc Hội, Technical Vice-director of Việt Trì Chemical Company; Viet Nam Cleaner Production Centre 2004k:1-2).

The one part of a boiler

…and the other part

- At **Việt Trì Food Processing Factory**, a **screw conveyor** was installed to serve the powder levelling and dust emission reduction purposes. The screw conveyor has helped to improve the needed productivity; increase the annual revenue to 100 millions VND/year; reduce the number of operators (3 persons); and considerably improve the dusty and hot working environment of the workers (Interview with Mr. Nguyễn Thanh Bình, shift chief of Việt Trì Food Processing Factory; Viet Nam Cleaner Production Centre 2004l:1-4).

The screw conveyor

- At **Việt Trì Plywood Company**, a **grinder for grinding board cuts** and a **dust suction system** (see pictures below) were invested in. The grinder helps to make use of the board cuts and thus contributes 1% to the company's annual revenue. The dust suction system collects almost all the dust from production line No.1, which is then made wet and flows to the reservoir where the wet dust will settle at the bottom of the reservoir, be taken up, dried and finally burnt. Earlier, the dust emission from this production line was in plenty and causing heavy environmental and health impacts on the workers and the people living in the neighbourhood (Interview with Mr. Vũ Chí Cần, technical manager of Việt Trì Plywood Company).

Part of the grinder

Part of the dust suction system

- At **Vĩnh Phú Textile Company**, **a cotton dust blowing-suction system** was invested in. The yield is raised to 3%; 50% of B-rank products are promoted to A-rank, namely the product quality is improved; the operation cost is minimised, so the factory saves 43 millions VND/year; the electricity consumption is reduced; and the working environment of the workers is considerably improved due to the remarkable reduction of dust.

Part of the cotton dust blowing-suction system

All in all, in terms of economic efficiency, the factory's revenue increases 279 millions VND a year (Interview with Ms. Hoàng Thị Lê Hoan, technical manager of Vĩnh Phú Textile Company).

- The six major urban markets **Bạch Hạc, Dầu, Gát, Gia Cẩm, Nông Trang and Tân Dân** (see typical pictures below) were upgraded in terms of infrastructures and facilities with particular focus on the improvement of sanitary conditions, flood prevention and improvement of food hygiene level. All of them were provided with new buildings and toilets; Dầu, Gia Cẩm, Nông Trang and Tân Dân with concretised market floors; Dầu and Gia Cẩm with water and electricity supplies; Gát and Nông Trang with clean water supply only; and Bạch Hạc, Gát, Gia Cẩm, Nông Trang and Tân Dân with drainage system.

Front building of Dầu market

The new buildings financed by the project at Nông Trang market

- 9,681 trees were planted by Việt Trì URENCO along the two main roads Hùng Vương and Trần Phú, in Thụy Vân industrial zone, and at the entrance of and around the war soldiers' cemetery of Việt Trì city as a part of the **Green Belt** (see the picture on the right)

The trees planted at the war soldiers' cemetery of Việt Trì city

- **40 households** benefited from the **biogas plants** (see pictures below).

The tomb of a biogas plant (like others) is constructed under the earth

A beneficiary is showing how to operate a biogas plant

3.5. Summing-up

This chapter has gone through some environmental problems caused by industrial and urban development in Phú Thọ province, explained why Danida should assist the province in working out those problems, and presented the most essential information of Việt Trì Project. In the next chapter, I will be going deeply into analysing the sustainability of the project with selective focus on the outcomes I have just introduced.

4. Analysis of the Sustainability of the Project "*Industrial and Urban Development in Viet Tri city*"

The purpose of this chapter is to analyse the sustainability of Việt Trì Project which is synonymous with the prerequisites for the sustainability of the project and the sustainability dimensions - financial, institutional, social, and technical (the environmental is not included here because Việt Trì Project itself is already about environment). As discussed under the sub-section about social sustainability, institutional sustainability and social sustainability are very close to each other, so in this analysis, I will put them together. The analysis is fulfilled by defining and analysing some prerequisites for the sustainability of Việt Trì Project based upon the theoretical discussions of the factors that can affect project sustainability; and combining the theoretical discussion about the dimensions of project sustainability and the factors with the related interviews with the directly involved Vietnamese stakeholders, the information in Việt Trì Project documents, the correspondence with the Senior Technical Advisor of Việt Trì Project, the site visits in Phú Thọ province, and my professional experiences of working with development projects.

4.1. Pre-conditions for the sustainability of Việt Trì Project

Whether Việt Trì Project can be sustainable in the long run, there are some preliminary and important conditions which have to be met. On the basis of the theoretical discussions of the factors that can affect the sustainability of a project, the issue of sustainability should firstly be addressed and analysed sufficiently and explicitly in the three phases of the project – Identification and Preparation, Implementation, and Completion – and written down in the related documents of Việt Trì Project. Secondly, the project must involve the sufficient and efficient participation of the ultimate beneficiaries in all phases of the project because it will be the ultimate beneficiaries who will overtake, maintain and develop the project outcomes. Thirdly, participation of Danida's local staffs at the Identification and Preparation phase must be adequate and efficient in order to make sure that the project was proposed based upon the ultimate beneficiaries' needs and wishes, that there are no conflicts of interests, and that all the key ultimate beneficiaries are included.

4.2. Sustainability in Việt Trì Project documents and participation of Danida's local staffs at the Identification and Preparation phase

4.2.1. Sustainability in Việt Trì Project documents

Since I did not have the chance to get access to the Identification Report because it was thrown away after the Project Document was made, I cannot know exactly if sustainability

was identified in that Report or not and thus cannot suggest whether that Report should be improved and how. A number of Feasibility Reports and Surveys were made, but sustainability was not even a key word of the documents concerned. If sustainability had been identified in the Identification Report, the Feasibility Reports should have assessed the sustainability dimensions and concluded whether those dimensions could likely be progressed.

The sustainability discussion presented in the Project Document is very general and superficial. There are no discussion and clarification of the engagement of the ultimate beneficiaries; of the different dimensions of sustainability - institutional and social, economic and financial, and technical - and how they are going to be met. Moreover, neither is there a sufficient discussion and analysis of the factors that are likely to influence the sustainability and how they are to be overcome. On page 46 of the Project Document, only the following risks are presented:

- "*If enforcement of environmental regulations is not made more effective there is a risk that achievements in the field of industrial cleaner production and OHS may not be sustained. The Government is aware of this and has long-term strategy for gradually strengthening the enforcement.*

- *If training, dissemination and awareness activities are not sustained beyond the Project, there is a risk that households and local communities will not participate effectively in the improvement of the local environment. All stakeholders are ware of the importance of continuity in these activities.*

- *Any adverse changes in the national or provincial economy could negatively affect the sustainability of the Project. However, at present, this risk would appear to be minimal, but the Project will follow the economic trends.*

- *Capacity building efforts could be undermined if key counterpart staff were to be reassigned. However, Viet Tri has experience in this regard (from the division of the province into the two provinces Phu Tho and Vinh Phuc in 1997) and are therefore aware of the consequences*." (Danida 2001c:46)

Those risks are not adequate because there are some other important risks like lack of economic and financial sources at the hospitals to operate and maintain the wastewater treatment plants; lack of effective participation of the market representatives; lack of revenue sources at the urban markets (which will in turn affect the economic and financial sustainability of the outcomes concerned), lack of preconditions to establish the Green Belt, etc. are not mentioned and discussed.

The Appraisal Report made during the Identification and Preparation phase fails to elaborate why all the project components and activities were relevant to be invested in, or at least the

Appraisal Team did not realise that some of them were not by any means appropriate. Sustainability is mentioned as "*a key factor in determining and developing Danida support for a Project*", and "*relates to issues such as how to ensure that the strategies and action plans and demonstrations projects are prepared in a sustainable way*" (Danida 2001b:8). Yet the Report did not touch upon the technical and social sustainability aspects that are important in the case of Việt Trì Project, and the sole and short paragraph below fails to fully convince how the project is going to be financially and institutionally sustainable if only financial and institutional sustainability was expected by the Appraisal Team:

> "*The Project formulation has been undertaken with full involvement of all relevant stakeholders in Viet Tri and it is assessed that there is agreement on the Project's objectives and scope and that there is a strong sense of Vietnamese ownership and commitment to the Project. Furthermore, the provincial authorities and other relevant stakeholders are highly motivated and committed to the Project objectives. Finally, the Project design is built on integration into existing administrative structures and use of established mechanisms for institutional co-ordination*." (Danida 2001b:8)

Sustainability is not included in the Inception Report of Việt Trì Project, whereas in the Progress Reports, nothing else but the following paragraph that had already been mentioned in the Project Document was repeated in two out of five Progress Reports: *Any adverse changes in the national or provincial economy could negatively affect the sustainability of the Project. However, at present this risk would appear to be minimal, but the Project will follow economic trends*. The Completion Report summarises some agreed measures with the involved local stakeholders to maintain the outcomes, yet it fails to address explicitly how the wastewater treatment plants and the urban markets are going to be maintained and developed, seen from the financial, technical and social viewpoints.

4.2.2. Participation of Danida's local staffs at the Identification and Preparation phase

Danida has a policy where the involved Danida staffs at the Royal Danish Embassy are the councillor and the national programme officer, and then an appraisal team composing of a few Danish specialists from the Ministry of Foreign Affairs in Copenhagen will arrive to appraise the project. The mentioned staffs were involved not only in a single project like Việt Trì Project but also others. For example, the councillor and the national programme officer were involved in all projects belonging to DEA-Vietnam Programme, so in relation to Việt Trì Project, they could only visit a few industrial utilities and hospitals in Phú Thọ province and communicated with the provincial Departments for the rest of the phase. In the meantime, the appraisal team, within 3 weeks, had to appraise three projects of more or less same budget value but located in different provinces. According to the Appraisal Report, about 12 days were spent on Việt Trì Project.

It is my viewpoint that the participation of Danida's local staffs, especially that of the national programme officer at the Identification and Preparation phase was too little. There was no direct communication between him and the stakeholders involved in the urban market activities, and it seems like there was no examination of the Green Belt as a questionable activity (explanation is to be provided in the coming sub-sections).

4.3. Financial sustainability

As discussed in the Theoretical Framework, financial sustainability has to do with the capacity of the donor, the authoritative partner stakeholders and the ultimate beneficiaries to plan for, mobilise and utilise appropriately and efficiently both domestic and external sources on a sufficient, reliable and strategic basis for the purpose of achieving the set targets, maintaining and promoting the obtained outcomes. In the specific case of Việt Trì Project, it is relevant to look at how the financial input was distributed to different activities, how Danida and Phú Thọ province financially planned for the return-on-investment phase, and what actual situation at each ultimate beneficiary institution nowadays is.

4.3.1. How was the financial input of Việt Trì Project distributed to different activities?

As mentioned in Chapter 3 under the sub-section 4.3, the Vietnamese counterpart contributed mainly in-kind to the project while Danida provided 18,518,000 DKK, which was spent on investment, procurement (including the interventions) and operational expenses. Details of the budget distribution are thereinafter. The blue-marked items are those directly related to the outcomes I have chosen for my analysis.

Items	**Ceiling amount (DKK)**
Fees	
Expatriate key personnel	3,681,361
Regional/Local key personnel	523,800
Personnel in Recipient country rather than key personnel	744,500
Working expenses	
Component-related expenses	381,200
Short-term international and local key personnel	520,500
Long-term international key personnel	262,666
Personnel in Recipient country rather than key personnel	31,225
Investment and Procurement	
Project-related expenses	383,500
Personnel-related expenses	30,000
Pilot demonstrations at ward-level	747,826
Improvement of markets	2,699,000
Information, education and communication materials	203,252

Training in English	101,626
Training and awareness raising	101,626
Study tours	542,026
Laboratory equipment	960,000
Grant for the Green Belt	1,910,569
Surveys	203,252
Cleaner Production pilot demonstration projects	1,219,512
Cleaner Production sub-contracts	406,504
Environmental monitoring and Data management capacity development	136,000
Hospital waste and wastewater treatment systems	2,515,812
Total	**18,305,758**

Table 5.1 – Budget distribution of Việt Trì Project compiled from the Completion Report[20]

4.3.2. How did Danida and Phú Thọ province financially plan for the return-on-investment phase?

From Table 5.1, we can see that most of the reimbursed amount was spent on the investment phase, meaning during nearly three years of project implementation. In terms of legal documents, however, before Việt Trì Project was officially launched, the Government of Denmark and the Government of Vietnam signed a common agreement on Việt Trì Project where the Government of Vietnam committed to providing the implementing agencies adequate working capital to maintain the normal operation when the project is handed over. In a direct way the Government of Vietnam did promise that there would not be any financial barriers for the beneficiary institutions to continue the project attained outcomes at the return-on-investment phase.

Moreover, in the Completion Report, the sustainability of the project benefits is expressed as follows:

> "*The PMU expects that the benefits generated by the project to a high degree can be sustained and even enhanced. From the outset, the PMU actively involved all relevant partner stakeholders directly in project planning and implementation through establishing Project Working Groups (PWG). The authority or agency currently in charge of a certain sector was made responsible for the actual implementation of the related project component. Thereby, the basic ownership was secured, and the project activities were conducted within the institutional framework that would have the future operational responsibility*." (COWI A/S & Danida. 2005b:13)

From the financial sustainability perspective, the statement was made in that way because there were some agreements made among the local institutions. For instance, in the case of

[20] COWI A/S & Danida. 2005b. Completion Report, pp. 21.

the wastewater treatment plants at Phú Thọ Town General Hospital and Phú Thọ Provincial General Hospital, there was an "*agreement regarding operational responsibilities and cost recovery has been made between the involved parties: PPP, Department of Health, and the two hospitals*" (COWI A/S & Danida. 2005b:14). In the case of the six urban markets, "*the market vendors will contribute significantly to recover the operation and maintenance costs*" (COWI A/S & Danida. 2005b:13). As regards the Green Belt with 18,000 trees planted, the Educational Division of Việt Trì city and Việt Trì URENCO "*have acknowledged their responsibility for tending and protecting the trees in the following years*" (COWI A/S & Danida. 2005b:14) while the Project Management Unit (PMU) is so sure that the forty households benefited from the biogas plants will operate and maintain the plants. Financial sustainability of the cleaner production demonstration projects at the industrial utilities and of the Environmental Monitoring Station (EMS) was not touched upon.

Altogether, it has been strongly believed that the financial sustainability of Việt Trì Project is secured on the basis of the commitments made by the Government of Vietnam and by the majority of beneficiary institutions. Except the industrial utilities which made an investment-benefit analysis in the submitted cleaner production proposals, neither the other beneficiary institutions nor the PMU have made any other analyses which could practically and visibly demonstrate how the activities would be sustained and developed, seen from the financial viewpoint.

4.3.3. What is the actual situation at each ultimate beneficiary institution nowadays?

At the visit paid to *Phú Thọ Town General Hospital* and the interview with Mr. Phạm Huy Thưởng, head of the Administration Section, I got the information that there was no agreement either between Phú Thọ PPC and Department of Health (DoH) or Danida and Phú Thọ Town General Hospital concerning recurrent costs. As far as how the hospital's budget is handled, all the revenues must be paid in DoH, which will then cover all the expenditures of Phú Thọ Town General Hospital. That is, the amount of money that DoH is able to provide Phú Thọ Town General Hospital relies on the collected hospital fees. So far, there have not been any extra sources which can specifically be used for operating and maintaining the wastewater treatment plant at Phú Thọ Town General Hospital.

Mr. Phạm Huy Thưởng also added that he participated in two meetings organised by Phú Thọ PPC and Danida where the issue of recurrent costs were mentioned. Until further, there is no funding for serving this purpose. An interview with Mr. Phạm Văn Tính, medical specialist of DoH, confirms that Phú Thọ Town General Hospital has to be self-reliant in terms of recurrent costs because Phú Thọ PPC and DoH are facing with difficulties in allocating budget for solving solid wastes and wastewater treatment at hospitals.

In the case of *Phú Thọ Provincial General Hospital*, Mr. Phạm Nhật Thịnh, head of the Administration Section, is more optimistic with the operational and maintenance costs of the

wastewater treatment plant. He said that the hospital, on the basis of its revenues budget, could cover those costs by itself, yet in the long run, comprehensive repairing or upgrading costs must be communicated with DoH. In that case, he had no idea how the matter would be figured out.

Phú Thọ Environmental Monitoring Station (EMS) seems to have well-planned for the recurrent costs. Ms. Tạ Hồng Yến, technical specialist of the Station, told me the equipment and facilities are maintained and regulated once per year, and the Station can pay for the expenses. The Station also has an independent budget to cover other costs like monthly cleaning or potential repairing in future.

The 7 industrial utilities do not have any problems with continuing the demonstration projects. As mentioned earlier, all the involved industrial utilities made an investment-benefit analysis in the submitted cleaner production proposals where they analysed pros and cons of the investment, and they could present in figure what economic benefits, aside from the social and environmental ones, they might yield. With the actual economic benefits they have been attaining, the issue of recurrent costs is not a burden for any of them, as far as I was confirmed when visiting them. Table 5.2 below shows the results of the investment.

Name of industrial utility	**Invested item**	**Invested amount (VND)**	**Annual economic benefit (VND)**
Minh Khai Tunnel Brick Manufactory	1 new grinder	600,000,000	700,000,000
Trí Đức Company Ltd.	1 jet machine	675,000,000	272,518,400
Việt Trì Ceramic Company	1 heat recovery system	533,000,000	5,400,000,000
Việt Trì Chemical Company	2 economisers and 2 boilers	533,000,000	1,248,000,000
Việt Trì Food Processing Factory	1 screw conveyor	129,000,000	100,000,000
Việt Trì Plywood Company	1 grinder for grinding board cuts and 1 dust suction	105,000,000	37,734,000
Vĩnh Phú Textile Company	1 cotton dust blowing-suction system	805,000,000	279,000,000

Table 5.2 – Cost-benefit clarifications of the 7 industrial utilities[21]

Việt Trì URENCO was supposed to be responsible for taking care of and protecting the trees, as part of the *Green Belt*, it had planted. 16% of the trees no longer exist, and it seems like Việt Trì Project has to bear that loss. In the long run, how many of the trees can survive, how many will be lost, and who will compensate the possible loss are unanswered questions.

At *the six major urban markets*, the maintenance and upgrading expenses depend on the so-called business fees contributed by the market vendors though it was misunderstood that the vendors should not pay for those expenses. The fees that the vendors have to pay now are the same to before the new buildings were constructed, and the plan to increase the fees is still

[21] Source: Feasibility Study Assessment of Cleaner Production Options for industrial utilities. The benefit calculation presented in the table is relative.

under discussion and consideration because that will be problematic for the vendors who are not making better business than earlier. At Gia Cẩm and Dầu markets, the buildings are filled with vendors, yet at the other markets - Bạch Hạc, Gát, Nông Trang, and Tân Dân, the new buildings are max. 50% occupied. Many vendors at Nông Trang and Tân Dân either already moved to another market or wish to move. Phú Thọ Market Management Board and the People's Committees of Bạch Hạc, Dầu and Tân Dân markets are now facing with a reality: what if the buildings are downgraded? How long do those markets have to wait for being allocated with money for repairing or upgrading them? The answer for this future problem is very unsure. At least, Phú Thọ Market Management Board cannot tell exactly whether there will be enough money for major repairing or upgrading, and in case of No, what it is going to do to.

The biogas plants were invested in connection with the pig production at the households. No cost-benefit analysis seems to have been made before the activity was launched, but according to the 32 families I visited and talked to, they annually save min. 1 million VND and max. 6 millions VND from buying gas for serving daily cooking activities, especially cooking bran for the pigs. With the amount they can save per year, they confirmed with me that they would be managing well to cover any recurrent costs.

4.3.4. Partial summing-up

The financial analysis of the selected outcomes of Việt Trì Project has showed that not all of them are likely to be maintained well. Phú Thọ Provincial General Hospital, Phú Thọ Environmental Monitoring Station, the 7 industrial utilities and the biogas plant households have clear financial perspectives to keep on the attained results, but Phú Thọ Town General Hospital and the 6 urban markets do not have the same capacities. I am in doubt that Việt Trì URENCO's responsibility in relation to the Green Belt is gradually weakened due to very loose commitment.

The Government of Vietnam has committed with the Government of Denmark (in this case represented by the Royal Danish Embassy) that it would provide the implementing agency with sufficient budget to maintain the usual operation, yet the real situation is not that simple, because very rarely does a national authoritative body intervene in very local financial problems except extremely urgent, important and special cases. That is to say, if a wastewater treatment plant in Phú Thọ province is downgraded, for example, it will first and foremost the responsibility of Phú Thọ PPC to work out the question. The case of the urban markets will be much harder and more complicated to call for national financial assistance.

Phú Thọ Town General Hospital (and also Phú Thọ Provincial General Hospital) is not directly dependant on Ministry of Health but DoH of Phú Thọ, meaning all of its internal budget issues can only be discussed and solved together with DoH, not Ministry of Health. If

DoH says it does not have money and so does Phú Thọ PPC, then Phú Thọ Town General Hospital will have to close down the wastewater treatment plant in case of serious technical problems. The markets are dependent on Department of Commerce, which dealS with repairing and upgrading issues at each individual market by reflecting on the fees collected. The fewer the fees are, the more difficult it will be for and the longer it will take the markets to be helped.

4.4. Institutional and social sustainability

Institutional and social sustainability, as discussed in the Theoretical Framework, is concerned with the extent that the directly involved partner stakeholders have sufficiently, equally and efficiently participated in the project activities; with the utilisation and enhancement of their existing managerial-organisational structures and capacity; and with their ability to overtake the achieved outcomes when the intervention is finished. To ease the analysis of this factor, I would like to, on the basis of the overall meaning of institutional and social sustainability, focus on these strategic questions: How and how far did the directly involved partner stakeholders, especially the ultimate beneficiaries participate in Việt Trì Project's activities? How were their managerial-organisational structures and capacity used and enhanced? And how is their ability to maintain and promote the achieved outcomes when Việt Trì Project has today come to an end?

4.4.1. How and how far did the directly involved partner stakeholders, especially the ultimate beneficiaries, participate in Việt Trì Project's activities?

Seen from the content and characteristics of the achieved outcomes, we get a quite clear impression that aside from the authoritative bodies concerned, the ultimate beneficiaries who directly benefit from the wastewater plants, the cleaner production demonstration projects, the Green Belt, the urban markets, and the biogas plants must have participated in Việt Trì Project in all phases. In practice, some of them were involved to a large extent, some to a certain extent, and some to a very limited extent.

Phú Thọ Town General Hospital

The participation of the Phú Thọ Town General Hospital as an ultimate beneficiary was very limited, not due to lack of willingness or relevant staff to participate from the hospital's side but due to project planning and design, and implementation practices. At the interview with Mr. Phạm Huy Thưởng, head of the Administration Section of Phú Thọ Town General Hospital, who, together with an electrician, was assigned by the hospital director to participate in the related activity, I was told that at one of the two meetings taking place at Phú Thọ Town General Hospital, the hospital director and he himself were informed of the decision to build a new wastewater treatment plant for the hospital, yet during the survey, design and implementation process, there was no chance for him to participate. Both he and

the hospital director knew nothing about the invested amount in the plant, were not in the position to act as a supervisor while the plant was under construction, were not by any means consulted in and informed of the technical specifications of the plant, were not invited to participate as a receiver when the plant was handed over, and were not given any operational and maintenance instructions and other related information. As Mr. Phạm Huy Thưởng implied, the hospital was just a witness of the project, not a participant.

Phú Thọ Provincial General Hospital

The situation at Phú Thọ Provincial General Hospital is different from that at Phú Thọ Town General Hospital. Mr. Phạm Nhật Thịnh - head of the Administration Section of Phú Thọ Provincial General Hospital, two technical operators and about 70 officers had the opportunity to participate, not in the identification and preparation phase but partly in the implementation. The hospital was informed of the invested amount (300 million VND, equivalent to ca. 20,000 USD), the technical operators were instructed how to operate and maintain the upgraded plant, and the 70 officers were trained in classification and collection of hospital wastes. When the plant was handed over, a technical instructions document was also delivered.

Phú Thọ Environmental Monitoring Station (EMS)

In the case of Phú Thọ EMS, a number of new equipment and facilities like Palintest, fridge and thermostat cabinet, scanning spectrophometers, soil analysis instruments, water measuring equipment, turbidity meter, etc. were purchased and delivered to the laboratory of the Station. In that sense EMS was "upgraded". The laboratory staffs were engaged in the implementation phase where capacity improvement and English courses were carried out.

The 7 industrial utilities - Minh Khai Tunnel Brick Manufactory, Trí Đức Company Ltd., Việt Trì Ceramic Company, Việt Trì Chemical Company, Việt Trì Food Processing Factory, Việt Trì Plywood Company, and Vĩnh Phú Textile Company

The industrial utilities were involved from the implementation phase where the representing industrial technical and organizational managers had the opportunities to participate in a three-phase intensive course on occupational health and safety and industrial cleaner production starting in December 2001 and ending in May 2004, and the utilities were requested to make some cleaner production proposals in accordance with the actual and urgent needs at the utilities. At each industrial utility, one out of several or many submitted proposals was selected for deploying a cleaner production demonstration project, namely there were 7 demonstration projects in all.

The six major urban markets - Bạch Hạc, Dầu, Gát, Gia Cẩm, Nông Trang, and Tân Dân

The case of the six major urban markets is a little bit complicated because it looks like there was some confusions as regards who should be participants, how and how far. From the organizational perspective, a two-level or dual management scheme is imposed on five out of six markets. See the chart below.

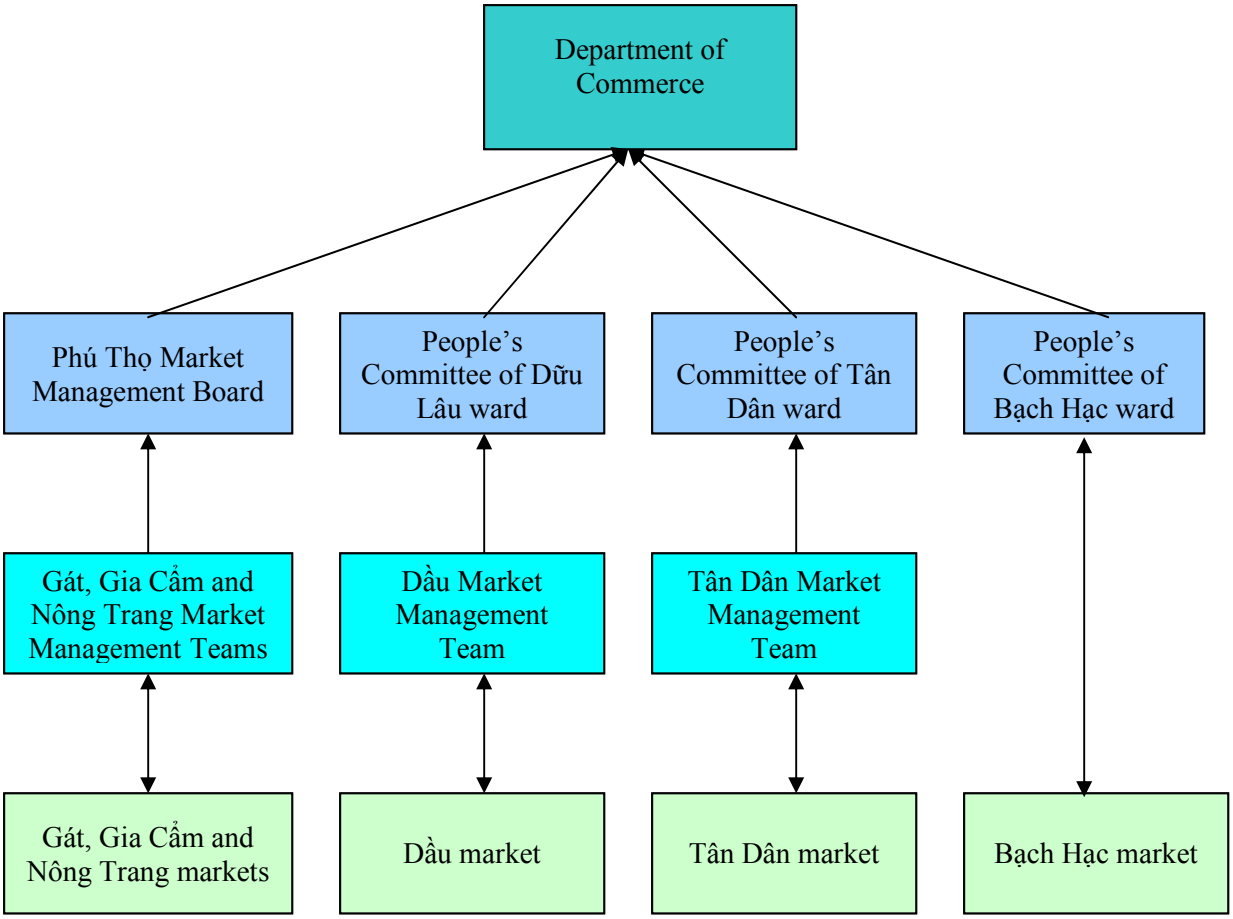


Chart 4.1 – The organizational structure of Bạch Hạc, Dầu, Gát, Gia Cẩm, Nông Trang, and Tân Dân markets

The organizational structure shows that the day-to-day management and supervision of Gát, Gia Cẩm and Nông Trang markets are taken care of by their Market Management Teams established at each market. The Teams are regarded as representatives of the market vendors and customers who communicate with them directly in all daily practical and/or administrative matters. The Teams have to be responsible to Phú Thọ Market Management Board in terms of fee collection and delivery, report on all the daily administrative and practical issues going on at the markets, and submission of such proposals as repairing or upgrading some stalls, buildings, etc. The similar situation is applicable for Dầu and Tân Dân markets, whose sole difference is that they are under the superior management of their ward People's Committees. Bạch Hạc market has no Market Management Team because the number of current vendors and customers are so few, yet it is under the direct management of the People's Committee of Bạch Hạc ward. At the highest level, Phú Thọ Market

Management Board and the ward People's Committees have to be responsible to Department of Commerce.

Since the collected fees are mainly used for operational and maintenance costs, repairing, upgrading or new construction of the markets when necessary, it is important that the market vendors and customers have their voice in the Việt Trì Project's activities concerned. No one else but them will be paying for the maintenance, repairing and upgrading costs of the buildings to be built and the facilities to be installed. That means, aside from Phú Thọ Market Management Board and the three ward People's Committees, the Market Management Teams of all the markets should participate from the moment the markets were identified to be supported until they were handed over. No one else but the Teams know about the actual conditions, the needs and desires of the vendors and customers, the market culture and practices at those markets best. As a result, they could be acting as helpful and useful co-operators in the entire process, and this would certainly influence the long-term impact and sustainability of the urban markets component.

In reality, the participation of the Teams and even Phú Thọ Market Management Board as well as the ward People's Committees was extremely limited. At the interviews with leaders of Gát, Gia Cẩm, Nông Trang and Tân Dân Market Management Teams and the Acting Head of Phú Thọ Market Management Board, I was told that they were only invited to one common meeting where several key project stakeholders were present for the purposes of commenting the drawings. The Team leaders constructively commented on the drawings, but most of their comments were not listened to. After the drawings had officially been approved, the Teams and Phú Thọ Market Management Board were informed. And when the construction activities were completed, they were invited to witness the hand-over. The interview with the leader of Dầu Market Management Team gave no new information except that his opinions were, to a certain extent, influential while the construction of Dầu market was going on.

It is important to note that a survey focusing on the sanitary and environmental conditions at a number of markets in Việt Trì city was conducted by a socio-economist and members of the Project Working Group 4 before the six markets were selected and their construction started. The survey was supposed to be a good chance for the market vendors to express their opinions by themselves, yet only 50 out of 2,151 vendors and 50 out of 35,000 customers at the ten markets were interviewed (Hoang, Van Hoa. 2003:5-6). It is very difficult for me to understand how and why the results of such a survey with an extremely humble number of participants could have proved sufficient and efficient, and then accepted and approved by first the Project Management Unit (PMU) and then the Project Steering Committee. When I asked Mr. Morten Jørgensen, Senior Technical Advisor of Việt Trì Project, why the market survey reports were approved even though they were poorly made, and who had the authority to approve them, I got the following answer:

"*The surveys were designed by a VN team member in consultation with DOSTE and the Viet Tri City Market Management Board (MMB), and - after the PMU had approved the questionnaires - subsequently conducted by local students under the supervision of the VN team member and MMB staff. The results, including the rudimentary report, were discussed with MMB, Viet Tri City PC and the PMU. The PMU in the end approved the selection of market locations and which facilities to upgrade. I guess that the Project Director during the discussions consulted with the Phu Tho PPC Vice-chair*." (Correspondence with Mr. Morten Jørgensen dated the 7th of June, 2006)

The Green Belt

The Green Belt created along Hùng Vương and Trần Phú roads, around the war soldiers' cemetery and around Thụy Vân industrial zone of Việt Trì city was contracted to plant and taken care of by Việt Trì URENCO. This institution was actively engaged in this activity from starting. Yet the industrial utilities located in Thụy Vân industrial zone and the people living on the mentioned roads were not by any means involved. It is furthermore unclear whether Việt Trì URENCO is able to check often the well-being of all the 9,681 trees they have planted as the trees are in risk of being damaged by people, animals, or natural reasons.

The 40 households benefited from the biogas plants project

Due to restrictions in terms of time and resources, I could only visit 32 out of 40 households. Though the idea of introducing biogas plants to Việt Trì city came later compared to the launching of Việt Trì Project, the households were involved in the entire process – since the moment the idea was presented to them until the construction of the plants was finished and put into use. My conversations with all the households revealed that they had the opportunity to follow closely the whole construction-installation process and they were very satisfied with their participation and ownership.

4.4.2. How were their existing managerial-organisational structures and capacity used and enhanced?

As a general situation, the managerial-organisational structures and capacity of the directly involved partner stakeholders were used and strengthened to a certain level and consequently appreciated. At least, the involved authoritative stakeholders are satisfied, and the satisfaction can be seen in the Completion Report. In particular cases, the picture is different from among the authoritative partner stakeholders and the ultimate beneficiaries.

Phú Thọ Town General Hospital feels that its capacity and roles in relation to the activity related were underestimated. Mr. Phạm Huy Thưởng, head of the Administration Section of Phú Thọ Town General Hospital, said that it would have been more relevant for the hospital to be engaged to a larger extent in the activity, namely from starting to the end, and there

should not have been an intermediary body (in this case Department of Health) to deal with the activity. It had the right to know all the technical details of and the plan to construct the plant, to comment on them on the basis of its knowledge and sharp understanding of the practical conditions at the hospital, to closely follow the construction of the plant, and to participate in the hand-over of the plant. If all those aspects had been respected, the situation experienced by the hospital nowadays would have differed. I will continue this point in the next section about technical sustainability.

Mr. Phạm Huy Thưởng joined a domestic study tour to hospitals in Sơn Tây, Thanh Hoá and Thái Nguyên provinces where he had the chance to visit the hospital waste incinerators in those places and learn some practical experiences with health care solid wastes treatment, yet nothing about wastewater treatment.

An electrician of the hospital was instructed in 15 minutes about electrical operation. Yet other issues like chemicals (what kinds of chemical to be used, how and where to buy them), deodorisation, treatment, were not communicated with anyone from the hospital even though a chemical specialist of the hospital, for instance, could have been engaged and instructed.

The case of *Phú Thọ Provincial General Hospital* is better because it was informed of all the new technical details, its technical operators were well-instructed, and quite a number of staffs were selected to participate in training activities on classifying and collecting hospital wastes. Furthermore, the hospital seems to have had the chance to follow the upgrading process. Mr. Phạm Nhật Thịnh, head of the Administration Section of Phú Thọ Provincial General Hospital joined the same domestic tour as Mr. Phạm Huy Thưởng did. In some way, the hospital is more pleased with its status as far as the related activity is concerned. It feels that its capacity has been used and enhanced to a certain extent.

Phú Thọ Environmental Monitoring Station (EMS) is fairly pleased with the level it was allowed to participate in the activity concerned. They were well-instructed how to use the equipment and facilities provided by the project, and especially improved to a high extent their environmental monitoring capacity thanks to the environmental monitoring and data management capacity enhancement course.

In the case of *the 7 industrial utilities*, I get a very clear impression that they are, to a high level, satisfied with the way their technical and managerial skills have been utilized and strengthened via the intensive training courses and demonstration projects. The fact that the industrial managers – both organizational and technical – were selected to participate has resulted in a sharp turning point in the industrial leaders' way of thinking – general directors, directors, vice-directors, etc. – in terms of cleaner production and its economic-social-environmental benefits. At most interviews with the technical managers of the industrial

utilities, I was told that their and their leaders' awareness of cleaner production had remarkably been improved, and they would like the activities to be continued.

The too limited engagement of *the six major urban markets* in the activities concerned highlights the underestimation and insufficient exploitation of the organizational-managerial capacities of the Market Management Teams, Phú Thọ Market Management Board, and the ward People's Committees. Their knowledge of the business status quo of the market, the needs and wishes of the vendors and customers in terms of sanitary conditions and other appropriate things, and the so-called market culture; and their capacity of contributing to more suitable market technical drawings and supervising the construction activities for the purpose of assuring the right construction materials and the proper construction quality, were not made used of. The Team and Board leaders do not feel like they were really a part of the game, as well as their capacities were by any means used or improved.

In the case of *the households benefited from the biogas plants project*, the households contributed their labour to the building and installation activities, aside from the 30% of financial contribution. They felt they were a part of the support, their available capacities were used, and they learnt how to handle the plants by themselves later on.

4.4.3. How is their ability to maintain and promote the achieved outcomes when Việt Trì Project has today come to an end?

The extent to which the beneficiary institutions participated in the project as well as the utilisation and enhancement of their capacities play a decisive role in whether they are able to maintain and promote the attained fruits by themselves.

In the case of *Phú Thọ Town General Hospital*, its role as a witness rather than a genuine player of the activity concerned has caused difficulties in dealing with technical issues, namely it does not know how to manage if any technical problems happen. Already by the time I visited the newly built wastewater plant in March 2006, the chemicals that the hospital was given when the plant was handed over had already been finished. The hospital does not know what kinds of chemical they are, whether it can afford, and where to buy them. That is to say, the hospital wastewater is presently being gathered at the plant but not treated before flowing further. Opposite, *Phú Thọ Provincial General Hospital* seems not to have problems with continuing the operation of the plant, and that is understandable because two technical operators of the hospital were trained in operation and maintenance.

Phú Thọ Environmental Monitoring Station (EMS) does not cope with any difficulties in maintaining the equipment and facilities they were provided for. The technical specialists of the Station were explained well about the equipment and facilities, and instructed how to maintain them. All the equipment and facilities have been used quite much, according to Ms. Tạ Hồng Yến – specialist of the Station, but they look like they are in good hands when I

visited the laboratory and thus had the chance to see them. The technical managers of *the 7 industrial utilities* were fully involved when the demonstration projects on cleaner production were implemented at each utility. They understand well all the technical details of the given machines and equipment and they are able to operate, maintain and promote them.

The situation at *the six major urban markets* is not positive. At *Bạch Hạc market,* the building looks fine, yet the sanitary condition is quite nasty: wastes are discharged everywhere in small piles and there are no waste-containers disposed in the market; the drainage system is blocked at one of the four ends, both wastewater and rain water have no outlet, so they just either blocked when it rains lightly or spill over when it rains a lot (see pictures below). The toilet is piled up with used toilet papers which mix up with toilet water and human faeces. The few vendors sitting at the market told me that there is no one keeping an eye on what's going on at the market even though the market is under the management of the People's Committee of Bạch Hạc ward (see pictures below).

Wastes are discharged everywhere...

…whereas this end of the drainage system has no outlet

At *Dầu market,* the buildings are in good condition, but there is neither a wastewater drainage system nor a wastes collection system, and the toilets are presently "out of order" due to technical problems. Sitting on the back yard of the market are fish and shellfish vendors who also prepare the fish for their customers if required, or sometimes they prepare the fish beforehand to save the customers' time. All the water they use to wash the fish is discharged to a rice field located at the foot of the yard, creating a very bad hygiene environment to experience.

Water from this little well is being used by the fish and shellfish vendors to wash their items.

Most shockingly, the water they use to wash the fish is picked up from a little well dug by the construction workers to serve the construction activities when the market was under construction. The well lies on the mentioned rice field, filled with extremely dirty water and

millions of larvae. Being aware that the water is dirty, the vendors still use it because the price of tap water is too high for them (see pictures below).

The newly built restaurant for Gát market was the very first one to have been handed over. About two years old, but the building looks much older than its actual age. The toilet seems to be in good condition, judged from its appearance. It was closed when I visited the market, so I could not see whether it was in or out of order (see pictures below). There are no waste containers in the market in general and in the restaurant in particular, so all the wastes are piled up here and there. Gát Market Management Team takes care of the restaurant as well as the toilet, and collects fees from the food vendors, yet it cannot be responsible for the downgrading situation of the building due to poor construction quality. More details regarding the technical aspect will be presented and discussed under the sub-section about technical sustainability.

Profile of the newly built restaurant for Gát market…

…and the toilets

The Market Management Team of *Gia Cẩm* is able to carefully keep an eye on the buildings and request the vendors to take good care of the stalls they rent to do business. All the buildings financed by the project looked fine and the sanitary condition was much better compared to other markets when I visited them.

The two high and solid buildings at *Nông Trang market* used for the fresh meat vendors are the newest. Nông Trang Market Management Team has the responsibility of protecting them, but this is not the most important point of the whole story. The two buildings are half-empty, and that happens because the vendors cannot do a good business as before any longer and they decided to move to another market (see picture on the right).

50% of the new buildings at Nông Trang market is empty

The story at *Tân Dân* market is not better than at Nông Trang market. Like the other fellow Market Management Teams, the Team of *Tân Dân* market is responsible for keeping things in the market in order and especially protecting the newly invested infrastructures. The Team

is willing to and capable of fulfilling this task. What is happening to the market is that it has no water, electricity and fire control-prevention system, partly because Việt Trì Project did not include them, partly because Tân Dân ward and the vendors cannot afford to invest in them. Furthermore, the design of the building is irrelevant, according to the Team leader and markets vendors, and this has led to the consequence that 20% of the stalls are not rented, and the majority of the remaining vendors wish to move out.


50% of the external kiosks at Tân Dân market is not occupied, for no one wants to rent them.

The households benefited from the biogas plants project spent quite much time and labour on building the plants solidly. They followed the biogas plant specialist in every single step when the construction and installation were under progress, so they knew how things were. Importantly, the plants are theirs and are helping them to produce economic, social, and environmental benefits. Particularly the economic benefits have strongly motivated them to use correctly, protect and maintain well the plants.

4.4.4. Partial summing-up

The analysis above has demonstrated that the institutional and social sustainability of Việt Trì Project depends heavily on the participation and participation extent, as well as the management and maintenance capacities of the directly involved partner stakeholders, especially the ultimate beneficiaries. We have thereby experienced two different pictures: the one of those who were restricted to participate to a relevant extent in the activities concerned, and the other of those were engaged in the activities concerned at an appropriate level. In the former case, institutional and social sustainability is quite unsure because the ultimate beneficiaries are unsatisfied with their participation and ownership, whereas in the latter case, it is more secured because the ultimate beneficiaries are happy with the level they have participated and simultaneously feel that the achieved results are really theirs.

As discussed under the anti-corruption factor, the exclusion of the ultimate beneficiaries from the project implementation where the construction and procurement activities taking place can be a signal of corruption because the authoritative partner stakeholders do not want the ultimate beneficiaries to know all details about what materials are used for the construction, how much they cost, how their quality is and so forth. At this point, I would like to strengthen my doubt of corruption by discussing a little bit the problem of corruption in connection with development projects in Vietnam.

Corruption in Vietnam is taking place in different kinds of projects financed by different types of international aid organisations, but most severely in infrastructure construction projects. Even though no reports have been made to demonstrate how many projects have been corrupted until now, what the corruption level is and so forth, an analysis made by Vietnam Investment Review shows that many infrastructure projects are causing huge wastes due to the current management structure, yet it is difficult to criticise those projects because high-ranking people in the sector to whom the projects belong will be touched upon. Losses occur in all phases of bidding, implementation, and supervision. Lack of transparency, trouble-making administrative procedures, unclear and overlapping laws and regulations are blamed for allowing under-the-table payments.

Corruption in development projects in Vietnam is at an alarming level presently, and the message was released at the mid-term meeting of Vietnam's Consultative Group (CG) between the Vietnamese government and donors in Nha Trang in June 2006. The meeting focused on Vietnam's fight against corruption and effective use of official development assistance (ODA), and it was the first time that corruption became a central issue of a CG meeting vis-à-vis at other meetings. Background of the focus was the very recent graft scandal at the Project Management Unit 18 (PMU18) which had rocked the nation and many international news headlines, and has put the international donors in a "difficult situation" and raised doubt on the essence of usage of ODA in Vietnam (See **Annex 4.1** for more details about the PMU18 case).

Corruption in development projects in Vietnam is a national issue and it concerns both large and small scale projects at any locality of the country, namely Việt Trì city and Phú Thọ province are not excluded. As some Vietnamese project officers joke: if the cake is big, "we" take big bites; if the cake is small, "we" take small bites. The common experience is, the larger the projects are and the more levels they have to pass through, the more serious corruption will be.

Relating the discussion to my question of corruption above, it is very questionable that the responsible persons of Phú Thọ Town General Hospital and the representatives of the urban markets were too limited to participate in the both the Identification and Preparation, and Implementation stages; and that the trees planted were kept only for the knowledge of the authoritative partner stakeholders and Việt Trì URENCO even though these activities consume quite an amount of the project's budget. What is going on here?

4.5. Technical sustainability

The sustainability of the technical aspect of Việt Trì Project concentrates on three elements: Have appropriate technologies for the activities been carefully considered and adopted? Have the relevant beneficiary institutions been sufficiently involved in the technology

transfer process? And are they able to maintain the outcomes by themselves, seen from the technical perspective?

4.5.1. Have appropriate technologies for the activities been carefully considered and adopted?

Since I am not an expert on wastewater treatment plant technology, cleaner production technology, environmental monitoring technology, or biogas plant technology, what I am presenting and discussing in this sub-section is based upon the judgement and opinions of the recipients of the transferred technologies. Here, it is important to stress that "appropriate technologies" imply the technologies that match with the existing needs of the recipient, with the capacity of the recipient to undertake them, both in technical and financial sense.

As mentioned earlier, except electrical instructions, Phú Thọ Town General Hospital was not by any means involved in the technological discussions around the wastewater plant, and it was not given any technical guidelines or instructions either. Whether the chosen technology for the plant is appropriate or not and in what way it is suitable, it is totally beyond the hospital's awareness, as far as I could hear from Mr. Phạm Huy Thưởng. When I asked him "*what are you going to do if technical problems happen*", he answered honestly "*that we really don't know*". Furthermore, the hospital has never bought the chemicals to be used for the plant by itself, so it is not known yet how expensive it is and whether the hospital can afford. Without knowledge of the plant's specifications, it has, on the one hand, been difficult for the hospital to estimate how much it would cost to maintain the plant, and, on the other hand, been obvious that the hospital is not in the position to handle any technical problems which may occur.

At Phú Thọ Provincial General Hospital, I did not have the chance to talk to the technical operators due to their unavailability, yet Mr. Phạm Nhật Thịnh could tell that the operators were satisfied wit the technology and they believed that it is relevant.

Very confidently, Ms. Tạ Hồng Yến, technical specialist of Phú Thọ Environmental Monitoring Station (EMS), asserted that the equipment serving environmental monitoring and data management purposes they were provided with, and the additional knowledge they received via the capacity enhancement course are totally suitable for EMS and its staff. When being asked "*according to you, has the efficiency of the Station's activities been improved thanks to the new equipment*", she answered "*Definitely. Before the equipment was given to us, we had to work over time very often. Some of the tasks, which could have been handled efficiently by machine or equipment, were done by hands. Since we received the project equipment, we have used them and saved a great deal of time. Furthermore, we can today dispose the same equipment both at the Station and on site, and thanks to them, the tasks of the officers at the Station and on site are not hampered due to lack of equipment. I*

work with environmental monitoring and I understand very well the value of such equipment, so I really appreciate them."

Before the intervention of Việt Trì Project, cleaner production was a concept which *the industrial utilities* just heard about, but understanding what it's precisely about was not part of their knowledge. Being closely involved in the entire technological transfer process, the technical managers of the utilities have learnt a lot and grasped valuable practical experiences about cleaner production technology. Since it was them who made the cleaner production proposals, they are fully aware of the cost of the technology, whether it is suitable with the actual conditions at their production utilities, and whether they can take over the technology when the international industrial specialists leave. I did notexperience a single case where any of the technical managers appeared unsure of what is going on. Việt Trì Ceramic Company even self-made an extra heat recovery system based on what had been learnt, and with this system, it can save 84 tons of gas consumption per year, which is equivalent to 840,000,000 VND.

In the case of the six urban markets, there appropriate technology implies the buildings must be designed in accordance with the needs and the actual circumstances at each market, the construction contractor purchased the right and good construction materials, and the buildings were carefully and correctly constructed.

Concerning the design, only people at *Dầu* market do not complain about it. People at the other markets point out several design things which should have been taken into account from beginning.

At *Bạch Hạc* market, the buildings were constructed with no consideration of sun and rain directions for the building's front and back sides, so when it is sunny, all the strong sunlight shines directly on the vendors and their items, and when it is rainy, the rain makes them wet. Also, as already described in sub-section 5.4.3, the drainage system of the market has no outlet, so the wastewater and slight rain water are blocked at the one end, whereas water from heavy rains will spill over the buildings' floor.

At the restaurant of *Gát* market, there are no doors and windows but open entrances and light openings only. The vendors have to use some temporary frames or nylon sheets to cover some of the open entrances and their raincoats to cover the light openings when it rains.

The side opening of the restaurant of *Gát* market is covered with nylon sheets when it rains.

At *Gia Cẩm* market, the design of the new garment building is exactly the same to that of the former one, meaning there are really a number of big columns - one at every square metre –

which make it very difficult for the garment vendors to display the items. They have to make some extra bamboo frames to hang the clothes, and the frames do not make the whole garment building look nice. Also, the roofs of both the garment building and the fresh meat building are made of sheet irons with roof windows. In summer, it is very hot, so the garment vendors had the initiative of using some pieces of cloth to cover the roof windows, while the fresh meat vendors made temporary separate bamboo ceilings which look quite miserable to isolate the heat.

At *Nông Trang* market, both the Market Management Team and the vendors complained the two new buildings are too high and with no consideration of sun and rain directions for the building sides, the aisles are too broad, and the orientation should have been vertical instead of horizontal because with the current horizontal orientation, the buildings are turning their backs to the entrance, which is extremely avoided by Vietnamese people.

The aisles of the fresh meat buildings are too broad…

Nông Trang market has several entrances, and the entrance to the new buildings is one of those, but very few people use this entrance since they do not want to "enter a market from the back side". The consequences of the design are first of all the strong sunlight shines directly on the meat and the vendors when it's sunny, and the rain makes both of them wet when it's rainy. Next, the fresh meat vendors sitting at the buildings closest to the vegetables vendors do business best, whereas those sitting at the building near to the entrance can sell to very few customers. Psychologically, Vietnamese customers, who are mostly female, would like to buy things in the market as fast as possible because they have many other things at home to take care of, among which is to make lunch and dinner for the family. Buying vegetables, fish or meat for vendors sitting closely to each other is normally their most preferable choice of convenience. This explains why one of the two buildings is under insufficient and inefficient use.

The design of *Tân Dân* market is very strange. The external part is used for disposing small fresh meat kiosks around the building while the internal part is used for garment and plastic items. The internal part is without ventilation, so it is very hot in summer. The stalls look like "dog cages" (some even compare with "prisons") due to its design (see picture on the right). Fewer and fewer customers are coming to visit the internal part of the building because they do not like the peculiar design. After the whole building had been put into use, it became

One of the "dog-cage" stalls

difficult for the Market Management Team to arrange the fresh meat kiosks. Again, it is problem with the strong sunlight, which no doubt affects the quality of the meat. The People's Committee of Tân Dân ward had to make a decision of convenience which is to dispose the consumer goods vendors in the kiosks instead.

As regards construction quality, at least at the restaurant of *Gát market*, the beams and rafters made of poor-quality metal already rust a lot, and as the food vendors said, just if it breezes, many small rusty pieces will fall on our food and us. The walls are cracked here and there, and I have no idea how long the restaurant can maintain.

The walls are cracked on both sides of the restaurant…

…and at the door-ledge of the side entrance

Though the buildings of the other markets still look fine, but since they were tendered by the same contractor and built by the same workers, I am in doubt there will be quality problems by time.

4.5.2. Have the relevant beneficiary institutions been sufficiently involved in the technology transfer process?

As described above, Phú Thọ Provincial General Hospital, Phú Thọ Environmental Monitoring Station, the 7 industrial utilities, and the biogas plant households participated in the whole technological transfer process, yet Phú Thọ Town General Hospital and the six urban markets did not. This has led to the consequences presented in the subsequent sub-section.

4.5.3. Are they able to maintain the outcomes by themselves, seen from the technical perspective?

The extent to which the beneficiary institutions participated in the technological transfer process plays a crucial role in deciding if they can maintain the benefits by themselves or not. Phú Thọ Provincial General Hospital, Phú Thọ Environmental Monitoring Station, the 7 industrial utilities, and the biogas plant households confirmed that they knew how to handle in case of technical problems. Opposite, Phú Thọ Town General Hospital has no idea what it has to do but call for help from Technical University in Hanoi, for instance. Regarding the urban markets, serious lack of participation has created the feeling that "these buildings are

not ours", so the awareness of protecting the buildings is lessened. At *Gát, Nông Trang and Tân Dân* markets where no new vendors are moving in but just more vendors moving out, it may happen that the new buildings will have to be used for other purposes rather than for the vendors selling fresh meat and food. At *Bạch Hạc* market, the vendors do not really care about protecting the building. It is just purely a place for them to come and do business for a couple of hours and then leave again. *Dầu* and *Gia Cẩm* markets seem to be "in good hands and eyes" despite problems with design (at *Gia Cẩm* market) and sanitary maintenance (at *Dầu* market).

4.5.4. Partial summing-up

Technically seen, the analysed outcomes are not likely to be sustained altogether, and this has basically to do with sufficient or insufficient, and efficient or inefficient engagement of the ultimate beneficiaries. It is evident that the wastewater treatment plant at Phú Thọ Provincial General Hospital; the equipment and facilities at Phú Thọ Environmental Monitoring Station; the machines, systems and facilities at the 7 industrial utilities, and biogas plants at the households have positive sustainability perspectives. In the meantime, the situation with the wastewater treatment plant at Phú Thọ Town General Hospital and the six urban markets are questionable. Particularly in the case of the markets, I was told by Phú Thọ Market Management Board and the Market Management Teams that when they were invited to a meeting for commenting on the drawings, and the majority of their comments and arguments gave a clear message that the architects should make some necessary changes with the drawings, yet no significant changes had been made.

Mr. Morten Jørgensen, Senior Technical Advisor of Việt Trì Project wrote to me that "*the technical design of the 6 market upgradings were sub-contracted to local state-owned design company, which was told to me to be the largest, most capable and reputable of its kind in Viet Tri*" (Correspondence with Mr. Morten Jørgensen dated the 7th of June, 2006), yet my site visits at the markets do not support that fame. Furthermore, "*all draft design documents were discussed with and at the end approved by the MMB and the PMU*" (Correspondence with Mr. Morten Jørgensen dated the 7th of June, 2006), but I was told at the interview with the Acting Head of Phú Thọ Market Management Board that the Board did not agree with and approve the design.

4.6. Further discussions of the Green Belt, Gát market and Bạch Hạc market as questionable interventions

Among the 7 outcomes I have chosen for the analysis, there are three activities which I would like to discuss a little more: the Green Belt, Gát market and Bạch Hạc market.

The Green Belt

The Green Belt is the strangest activity of Việt Trì Project. Việt Trì People's Committee suggested this activity in its project proposal, which was then adopted by the Project Steering Committee. The argument for the creation of the Green Belt was that it would function as a buffer zone between the residential areas and industrial areas for the purpose of improving the polluted urban environment. In fact, Việt Trì city is not in shortage of trees. There are many trees in both the residential and industrial areas, and a number of those trees were planted thanks to financial support from earlier projects.

I corresponded with Mr. Morten Jørgensen, the Senior Technical Advisor of Việt Trì Project, who, with his position and roles in Việt Trì Project, would have had the right to discuss the necessity and relevance of the Green Belt component about this matter. Mr. Morten Jørgensen answered me as follows:

> "*Already at the fact-finding visit (before our bidding), COWI asked representatives from both Danida and Phu Tho about where to establish the green belts between the industrial and residential areas, which were mentioned in the Danida Project, because we couldn't see any vacant land for the planting. COWI, again in its Proposal, mentioned this as an issue, and finally at the contract negotiations, COWI raised the issue. At all occasions COWI was told the executing and implementing agencies would sort out this issue (which of course never happened in a way that could satisfy the wording of the Project Document). In the end, an adjusted approach was proposed in the Inception Report, which - after appropriate discussion - was approved by the Steering Committee*." (Correspondence with Mr. Morten Jørgensen dated the 7th of June, 2006)

At least, the issue was mentioned three times to the authoritative people at the highest executive level - Danida and Phú Thọ PPC – by Mr. Morten Jørgensen (on behalf of COWI), but it was not seriously taken into consideration. The people sitting at the Steering Committee of Việt Trì Project made a decision to ratify this activity without providing any convincing arguments. Based upon my fieldwork's observation, I do agree with Mr. Morten Jørgensen completely: there is no vacant land for tree planting. And therefore 1,761/9,681 trees ended up at… the war soldiers' cemetery of Việt Trì city located on a large and peaceful hill which has no particular connection with either the residential area or the industrial area. On the other hand, it is the obligation of the industrial utilities based in Thụy Vân industrial area to plant trees in and around their location, according to *Regulation on the Management of Making, Considering and Ratifying, and Implementing Environmental Impact Assessment Reports in Phú Thọ Province* promulgated by Phú Thọ PPC in 2000. In that case, why was necessary for Danida to have 3,446 trees planted in this industrial area?

The "*Minutes of Checking Danida Project Trees*" in September 2004 shows that 1,566/5,207 trees planted in Thụy Vân industrial area and the war soldiers' cemetery of Việt Trì city were either "died or lost", while 1,392 trees planted on Hùng Vương and Trần Phú roads

seem to be in well-being and this sounds sensible because the head office of Việt Trì URENCO, Phú Thọ PPC and some other important public offices are located on those streets. When I was brought around by Việt Trì URENCO's staff, who were very enthusiastic in assisting me, I got quite confused of which trees were the results of Việt Trì Project and which trees were the results of others' because many trees born by different aid interventions were more or less of the same height with Việt Trì Project's trees. Mr. Morten Jørgensen himself, as a key member of the Project Management Unit, was also confused for the same reason when being showed around after the trees planting had been completed.

My conclusion on this activity is that its relevance is highly questionable while the efficiency, effectiveness and long-term impacts are hard to judge since it is not assured how the trees will be protected and whether "died or lost" cases can be efficiently prevented. The trees planted, at least to my eyes, did not create any buffer zone because the locations where the trees were planted are very scattered. When an intervention has questionable relevance, unsure efficiency, effectiveness and impact, its sustainability is also questionable. And if we relate this activity to the corruption discussion, it is worth asking ourselves: why should the Green Belt activity be approved though it was very clear that the activity was not by any means a necessity? Were there any manipulations with procurement, billing and planting?

Gát market

Gát market is the third largest market of Việt Trì city in terms of area: 7,000 m^2 compared to Nông Trang market (12,000 m^2) and Trung tâm market (10,000 m^2). The business capacity of this two-floor and old market has reduced since 1996 due to the increasing development of many temporary markets in the neighbourhood. As a result, 60% of the total area, mostly on the first floor, has been unoccupied.

Almost the whole first floor of Gát market is unoccupied

With the 4,200 m^2 unused, it should and would have been possible to arrange a relevant section inside the huge building for the food vendors instead of constructing a new and separate restaurant behind it. That is a waste of space, labour and money. At a conversation by phone with Mr. Lưu Đức Thắng, leader of Gát Market Management Team, I was told that no one ever asked for either his or the Team's opinions whether it was relevant to build a new restaurant. The Team has been facing with difficulty in terms of fee because there are not many vendors doing business at the market. The Team proposed Phú Thọ Market Management Board to repair the ceiling of the big building some time ago, but the proposal has not been approved due to lack of funding. When being asked what the Team is going to do with the newly-built but downgrading restaurant, he answered that the Team would have

to discuss with Phú Thọ Market Management Board, yet personally, he was not optimistic that the problem would be solved within a foreseeable time - again due to lack of funding.

Bạch Hạc market

As described in **Annex 3.2**, Bạch Hạc market almost did not exist until Việt Trì Project was implemented. There were no nothing but a piece of land. After the market had been constructed, some vendors sitting on the roads in the neighbourhood were moved in after the market construction had been completed. The number of vendors at Bạch Hạc market today is very few and the vendors occupy 30% of the entire market area. The rest is empty and under poor protection conditions. Why should so much money be invested in building this market? What are the sensible arguments?

Only 30%of the total area at Bạch Hạc market is occupied at the moment.

It is not clear what the People's Committee of Việt Trì city was thinking when it proposed the construction of the restaurant at Gát market and the entire Bạch Hạc market, whether the activities were solely the local authoritative partner stakeholders' interest, what the Appraisal Team and PMU of Việt Trì Project were able to see when they visited the market and later on contributed the final decision of having them built. Nevertheless, on the basis of what I have just analysed, these two activities, together with the Green Belt, should not have been included in Việt Trì project.

4.7. Summing-up

This chapter has analysed the sustainability of Việt Trì Project seen from financial institutional, social and technical perspectives. The next chapter will be continued with discussing some alternatives which can potentially help to improve the sustainability of Việt Trì Project.

5. Recommendations, Conclusions and Research Perspectives

From the analysis in Chapter 4, it is clear that some activities of Việt Trì Project have problems with sustainability. The purpose of this chapter is therefore to introduce and discuss some alternatives for enhancing the sustainability of Việt Trì Project and hopefully similar Danida's projects in Vietnam in future by trying to answer the last working question: *What alternatives can be taken into account and what are the advantages and challenges of the recommendations in Danida's specific context?* The alternatives are based on the discussion of how to promote project sustainability in the Theoretical Framework with concentration on the options particularly suitable for the case of Việt Trì Project. Right after the recommendations, I will conclude from the entire research and suggest some possibilities for future studies.

5.1. Recommendations

5.1.1. To improve the addressing and analysis of sustainability in the project documents

Following the theoretical discussion in page 31, I recommend that the Project Document should have elaborated the four stated risks (refer back to page 54). Simultaneously, it should have included and analysed the other important risks to the sustainability of Việt Trì Project, which are the lack of financial source at the hospitals to operate and maintain the wastewater treatment plants, lack of effective participation of the market representatives, lack of revenue sources at the urban markets, and lack of preconditions to establish the Green Belt; and explicitly described the equivalent plans and actions. In other words, the Project Document should have addressed the sustainability question in an explicit way, scrutinised the dimensions of sustainability in the specific context of Việt Trì Project, considered carefully all the factors that might affect Việt Trì Project's sustainability, and discussed the measures to surmount them, otherwise they are just "on the paper" and worthless.

The Appraisal Report should have explained scrupulously why all the project components and activities were relevant for the intervention, and on what grounds different aspects of sustainability would likely be met. The Inception Report should have addressed clearly what actions to be taken in the Implementation Phase and by whom in order to make the project sustainable, and each of the individual Progress Report should report what exactly have been done to assure the four dimensions of sustainability; what positive and negative lessons have been learnt from each period, how the positive lessons are going to be promoted and how the negative lessons are going to be improved in the next period. The Completion Report should have provided a more specific elaboration of the covering perspectives of the operational and

maintenance costs, the technical capacities of the hospitals to keep on the operation, and the social perspective of the urban markets.

5.1.2. To focus on the most necessary activities for a pilot project

Việt Trì Project is a pilot Danida's project in Phú Thọ province and was intended for a duration of only 24 months, but there are too many components with too many big and small details as well as major and minor activities. Aside from the fact that the duration had to be prolonged so that all the committed components could have been completed, the sustainability could also be affected because the sparse disposition of components and activities do not match with the management and supervision time capacity of the Project Management Unit (PMU). The Green Belt is such an example. The PMU could not manage to check where and whether the number of committed trees was planted until the trees had grown up. Or the Bạch Hạc and Gát markets case. The PMU even did not know that there is too much space inside the main building of Gát market which could have been used to allocate an area for the food vendors instead of building a new house behind; or the business capacity of Bạch Hạc market is very limited.

My point is, the activities like the creation of the Green Belt and the construction of Bạch Hạc and Gát markets should not have been included in Việt Trì Project because they are too strange to be accepted. The efficiency and sustainability of the investment could have been increased without the inclusion of those activities, aside from the other factors mentioned below.

5.1.3. To enhance the anti-corruption factor

It is suspected that corruption exists in the case of the urban markets and the Green Belt because most of the market representatives were completely marginalised from the construction supervision stage that is very important, and the industrial utilities and the local people located in the Green Belt area were not involved in the implementation and completion processes of the tree-planting. The first delivered market is now downgrading due to poor construction quality, and it is questionable whether the others will bear the same situation. Many trees planted by Việt Trì URENCO died or were damaged, and it is very confusing whether all the committed trees were planted. On the basis of the theoretical discussion of how to promote the anti-corruption factor, I would like to propose some actions which could have been exploited.

Firstly, Danida should have paid more attention to the fact that corruption in construction and infrastructure projects in Vietnam is quite popular, and a Danida project to a high extent can not be exceptional. There are many fraud and corruption tricks which Danida should be aware of and have further explicit measures to cope with them in specific cases. Some changes in technical details can, for example, alter a part of the construction budget, and this

is not always detectable by the donor and/or the external project manager. Therefore, Danida should have used the eyes and ears of its ultimate beneficiaries to prevent corruption in connection with the investment in the public demonstration projects.

Secondly, Danida should have enhanced at least the participation of the market representatives in the three project phases because these people know about the construction materials used to build a market and their prices, and included the participation of the industrial utilities and the local people located in the Green Belt area in the implementation and completion phases because they could at least contributing to counting the trees planted in the area they live and protecting them. Dishonest authoritative people, contractors and workers can only be kept an eye on by them - the people who will finally receive and maintain the completed products. Especially in the case of the Green Belt, Danida should have considered more carefully these three elements: why it was necessary to be supported, if there was vacant land for the planting, and by whom the Green Belt should be protected. As I have argued earlier, the Green Belt is a questionable intervention which consumed quite an amount of the project budget. The best solution is still to have excluded it completely from the project.

Aside from the urban markets and the Green Belt, the investment in Phú Thọ Town General Hospital should have been made more transparent to the responsible persons of the hospital. To have a construction firm built a wastewater treatment plant for the hospital without the awareness of the hospital's technical staffs as regards technical details, construction materials, quality, etc. is irrelevant. The Project Management Unit is not there daily to check whether the agreed materials have been used (the receipts should not be relied on because in Vietnam, you can buy material A and ask the seller to write material B in the receipt for you), whether the plant was decently constructed, etc. The exclusion of the hospital responsible persons' engagement in the mentioned aspect has a possible implication that corruption in connection with the construction of the plant might have occurred.

5.1.4. To enhance the participation of the ultimate beneficiaries in the project cycle, especially in the Identification and Preparation phase

The project experts and the officers of Plan International I have talked to during fieldwork share the opinion that the direct recipient partner, especially the ultimate beneficiaries, should be encouraged to participate in all project stages, from planning, designing to implementing and evaluating, as the real owner of the project. Their participation at the Identification and Preparation phase is particularly crucial because it is the phase where the donor can discuss with them about their needs and wishes; identify their institutional and financial capacities; discuss with them about implementation plans and activities; find out what implementation strategy or strategies are relevant; etc. This is the most fundamental

phase where the direct recipient partner feels whether or not it is a part of the aid intervention.

In the analysis about the financial, institutional, social and technical sustainability of Việt Trì Project, I highlighted two different pictures of the ultimate beneficiaries' participation in the project activities and the effects of their participation on sustainability: the one of Phú Thọ Provincial General Hospital, the 7 industrial utilities, households benefited from the biogas plants; and the other of Phú Thọ Town General Hospital, the six urban markets, and the Green Belt. The former is quite positive and has clear signals of being sustainable whereas the latter is very unsatisfactory as far as sustainability is concerned. No doubt the enhancement of the ultimate beneficiaries' participation in and a complete exclusion of the Green Belt activity from the project would have helped to improve the situation.

Following the local participation discussion under *Promoting participation and ownership factor*, the project design should have explicitly included and elaborated the participation of Phú Thọ Town General Hospital, the six urban markets from the Identification and Preparation phase. The responsible persons of Phú Thọ Town General Hospital and the representatives of the six urban markets (namely the Market Management Teams) should have been well-informed of all the intended investment details and discussed with as regards how the hospital and the markets could benefit from the investment best, how the investment would match with the economic and financial as well as technical circumstances at the hospital, and how the investment would match with the revenue and expenditure sources at each market. If these steps had been taken, it would have helped reveal the irrelevance of investing in Bạch Hạc and Gát markets. And then a preliminary participatory plan for the implementation and completion phases (who, when, how, etc.) should also have been discussed with them.

At the Implementation phase, the participatory plan should have been modified if necessary, and then confirmed with the responsible persons of the hospital and the representatives of the market. The responsible persons of the hospital should have been informed of the wastewater plant's construction and the fundamental technical details, and especially in following the construction and installation process, both for assuring that all the committed items were properly fulfilled and that neither fraud nor corruption happened. In this way, it would have been possible for them to understand the technical problems which might occur in future and look for solutions. The market drawings should have been not only showed to the representatives of the market but also discussed with them and modified in accordance with the relevance of their suggestions. The representatives should furthermore have been involved in following the construction process in order to make sure that no fraud and corruption actions happened, that the technical construction details were followed, and that the construction quality was respected.

At the Completion phase, both the responsible persons of the hospital and the representatives of the market should have not only been summoned to receive the finished works but also participated in evaluating the plant and the markets. Their confirmation of these elements had been indispensable and thus crucial before the plant and the markets were handed over: the works were constructed in accordance with the technical design agreements and they were satisfied with the construction and installation quality.

There are certainly several challenges of the ultimate beneficiaries' participation which I would like to highlight and discuss here. The first challenge is they are sometimes not aware of their responsibilities and benefits in project participation, and this has to do with the democracy practices where they come from. As a consequence, they are not always concerned about participating in policy-making except when they have to contribute money or labour, partly because they are familiar with being decided by the superior bodies, partly because they think that their opinions are not listened to. It has been experienced by many Vietnamese project experts that the ultimate beneficiaries feel they are "tiny" because they were despised by the local officers for a long time, and they behave quite passively when participating in a project.

The second challenge is the awareness of the ultimate beneficiaries of an aid intervention is not as expected. Experiences of the Vietnamese project experts I have talked to show that many beneficiaries still think that a project is about a donor from somewhere bringing money to them, so they do not feel from beginning that they have responsibility of being engaged in the project activities to a high extent. It thus requires time, professional experiences and patience to make them understand what a project is and why they should participate in it.

The third challenge is the limited participation capacities of the ultimate beneficiaries which derive from their low education level. It is not an easy thing to make them understand all the related issues, and certainly not even complicated technical matters. Failing to apply suitable approaches as an attempt to help them overcome their education level limit and get to understand the issues can easily lead to project failure.

The fourth challenge is the attitude, education level and capacities of local officers when encouraging the ultimate beneficiaries to participate. Again, in Vietnam, many local officers do not provide the beneficiaries with adequate information about the project and thus make the beneficiaries feel unclear what the project is about. Some officers have the viewpoint to have a meeting with people is to inform them what has/have been decided, not to discuss with them, because they think that the beneficiaries' opinions are unimportant. Some officers have not really understood the significance of the ultimate beneficiaries' participation in the project, and have limited wish to encourage people to participate because such a task consumes much time and labour. Some officers also have low education level, so they do not

even understand what an aid intervention or a project is about. Some project experts have the common experience that sometimes, it is much harder and more time-consuming to render the local officers understand the issues and get them fully involved in their assigned tasks than to motivate the ultimate beneficiaries to participate in a project.

Last but not least: the participation policies of the international aid organisations. Very often they, particularly the Governmental Organisations, stress the participation of the partner authoritative institutions and do not pay much attention to that of the ultimate beneficiaries. Many of them do not have clear policies regarding when and to what level the ultimate beneficiaries should participate. If the aid organisations themselves have no such policies, the partner authoritative institutions intentionally "ignore" to mention the participation of the ultimate beneficiaries, and the participation of the ultimate beneficiaries is not clearly defined and clarified in the project document, there will accordingly be no chance for the ultimate beneficiaries to participate.

5.1.5. To enhance the efficient engagement of Danida's local staff in the Identification and Preparation phase

The improvement of the sustainability of Việt Trì Project could have been realised by a more sufficient and efficient engagement of Danida's local staffs during the Identification and Preparation phase. At the interview with Mr. Đào Nhất Định, national programme officer of the Royal Danish Embassy in Hanoi, I was told that the embassy mostly communicated with the provincial departments and only visited some industrial utilities and hospitals during the preparation phase. In fact, a direct communication with all the ultimate beneficiaries and/or their representatives would have helped the local staff know what their actual needs and wishes were, what proposed components and/or activities were necessary and unnecessary, if and how the ultimate beneficiaries should participate in the project activities, etc.

5.1.6. What are the advantages and challenges of the recommendations in Danida's specific context?

Advantages: there are four main advantages.

1) In Vietnam, participation of people at grassroots level was discussed and recognised officially in 1998 when the Grassroots Democracy Decree regulating the implementation of democracy at the lowest administrative levels was promulgated. According to the Decree, the communal authorities have the obligation to inform the people the issues that they have the right to know, to discuss and decide directly, to be consulted with before the state bodies make a decision, and to supervise. The Decree is a step forward to improve transparency in the political decision-making process, and simultaneously opens opportunities for international aid organisations implementing development projects and programmes in Vietnam (including Danida) to communicate directly with the ultimate beneficiaries at not

only communal but also village level. The conversation with the national programme officer of Sida and the interview with the program support manager of Plan International confirm the positive effect of the Decree on their activities in Vietnam. In addition, in the national Socio-economic Development Plan for the 2006-2010 period, the intention to "*improve people's participation in policy-making for projects, programmes, for poverty reduction and hunger elimination mechanism and policies*" was also highlighted (Ministry of Planning and Investment 2005:84).

2) When I interviewed with the officers of Plan International and the other project experts listed in the List of interviewees, and especially when I talked to the market representatives and the hospital officers, I got a very clear impression that the ultimate beneficiaries have a very strong desire to be respected, to be consulted in and to decide the issues directly relate to them instead of being decided by the authoritative bodies. They, in other words, would like to be a part of the project concerned and have influence on it. Another good news is none of the interviewees has ever experienced that participation of the ultimate beneficiaries delays or prolongs a project's duration, and that the process of encouraging them to participate in a project takes a long time. Plan International in Phú Thọ province, for example, consults in the ultimate beneficiaries (also termed as "the community") by organising **two meetings a year at each commune and one session for each meeting** while Mr. Nguyễn Quang Phước - coordinator of Care International in Cà Mau Province - experiences that **participatory workshop approach** is an efficient method to engage the ultimate beneficiaries and **it normally takes one to a few days** depending on the number of beneficiaries, not weeks or even months.

3) Danida has adopted a zero-tolerance policy against corruption and bribery which is expressed very clearly in "*Danida's Action Plan against Corruption 2003-2008*" (Action Plan) and the *Anti-corruption Code of Conduct* launched in 2004. The Action Plan targets at preventing corruption within Danida aid delivery system, preventing corruption in the use of development aid provided by Denmark, and helping combat corruption in the countries that receive Danish development aid. It has been practised in Danida's partner countries incl. Vietnam which, in accordance with Danida's *Annual Anti-corruption Report 2004*, was involved in three specific activities: support the design of national anti-corruption plans/strategies/programmes and the implementation of the plans/strategies/programmes, support the improvement of governance in the public administration at central and lower levels, and support legal and judiciary reforms (Danida 2004:11). The *Anti-corruption Code of Conduct* has also been practised in Danida's partner countries and embassies.

4) After the recent scandal of PMU18, the international community (i.e. international aid organisations) has been paying more attention to corruption problems in connection with development aid in Vietnam and pressing the Vietnamese government to undertake concrete action programmes to curb corruption, and to keep them informed of what have been done

and how. The international community has even threatened to withdraw their support to Vietnam if the Vietnamese government fails to make efficient efforts of fighting against corruption.

Challenges: there are two main challenges.

1) Danida has so far been more familiar with top-down approach rather than bottom-up. Top-down here can be understood as either "donor-driven", "Vietnamese authority-driven" or a combination of both. Even though the mentioned 1998 Grassroots Democracy Decree has been practised by international aid organisations, Danida still does not know about it (Interview with Mr. Đào Nhất Định).

2) Danida has a very automatic rule about administration spending, namely the number of Danida's staffs engaged in its programmes and projects is limited to the minimum. For a five-year programme like DEA-Vietnam, there were only the counsellor and a national programme officer involved. Mr. Đào Nhất Định told me at the interview that a new policy about reducing administration costs had been put into practice by gathering all projects in one programme and sharing the management responsibilities with the counterpart by empowering the Vietnamese ministries to function "*as the manager and beneficiary of a project*" and Danida itself "*will only take care of support and money transfer*". By doing so, Danida believes that the ownership of the Vietnamese counterpart will be enhanced. Whether this belief will come true is still an open question. What has been learnt from the interview with an official in Phú Thọ implies that the new power that the Vietnamese ministries have been given potentially strengthens corruption practices at the highest administrative level.

5.2. Conclusions

The main conclusions from the research are as follows.

As far as Việt Trì Project and other DEA-Vietnam projects are concerned, project sustainability was touched upon at a general level in Danida's working tools. An examination of the Guidelines for Sector Programme Support and the Evaluation Guidelines has shown that sustainability is not a key and well-reflected matter. As I analysed in the theoretical discussion about project sustainability, Danida has no clear statement of financial sustainability, institutional sustainability and social sustainability, as well as what to be done to obtain these dimensions. Even though technical sustainability and environmental sustainability are defined, it is not clear how they are going to be achieved. Furthermore, corruption is a very important factor which can seriously affect project sustainability, but it is not integrated in Danida's sustainability guidelines.

The fieldwork in Phú Thọ province has played a crucial role to the research and I trust that the same results could not have attained if I had only relied on the available project documents, especially the completion report in which both Danida and the authoritative counterpart are satisfied with the achieved fruits. It was very useful to see reality of the outcomes of Việt Trì Project with my own eyes and assess them, and talk to the representatives of the implementing agency and the ultimate beneficiaries. I experienced a very complex picture where Phú Thọ Provincial People's Committee (Phú Thọ PPC) is powerful and decides the participation of the end beneficiaries, a number of ultimate beneficiaries seemed not to have their voice in what would to be decided by Phú Thọ PPC and thus were disappointed with their marginalisation from the activities concerned, Danida was too far away from their reach, and there was a big language barrier for free communication between them and the Senior Technical Advisor. This picture is significant to the sustainability of Việt Trì Project, yet it was by no means reflected in the completion report.

The professional experiences shared by Plan International and the project experts (listed in the List of interviewees and List of corresponded people) were useful for the analysis of Việt Trì Project's sustainability problems, especially the analysis of the ultimate beneficiaries' participation. As mentioned in the subsection about the empirical backgrounds, both Plan International and the project experts are familiar with community-based projects and programmes. They know about the problems of working the ultimate beneficiaries and the strategies to work with them effectively and sustainably. Though it may not be easy for Danida to approach the ultimate beneficiaries in the same way, such experiences are still worth being discussed and learnt.

To talk about corruption in general and corruption in connection with development projects is a taboo in Phú Thọ province. At an interview with one of Phú Thọ's officials, for instance, I was requested to turn off the Dictaphone when he should like to tell me some details about corruption at local and national levels. Or at some interviews with the ultimate beneficiaries, the interviewees felt very uncomfortable to touch upon the issue. Either they requested me to turn off the Dictaphone or to promise not mentioning what they have told me in my thesis.

5.3. Research Perspectives

After having studied the sustainability of Việt Trì Project, I realise that there are some perspectives to do further researches in Phú Thọ province particularly and in Vietnam generally. The two perspectives presented below are regarded as the most relevant ones.

The first perspective is to make a **comparative study of the sustainability measures of DEA-Vietnam and the new environmental programme** titled "*Vietnam-Denmark Development Cooperation in the Environment Sector 2005 – 2010*" (DCES) launched in

September 2005. At an interview with Mr. Jens Lorentzen, Chief Advisor of Danida's Centre for Competence Development, in January 2006, I had the impression that the sustainability of DEA-Vietnam was not as expected because Danida was practising the project-by-project approach at that time, namely funds were programmed annually and not as a comprehensive programme with components. From Mr. Jens Lorentzen's viewpoint, project-by-project approach of DEA-Vietnam is less sustainable and has less impact than the programmatic approach of DCES that Danida has been following. It is of course interesting to study the new approach and its effects on the sustainability of DCES vis-à-vis DEA-Vietnam.

The second perspective relates to **the conflict of interests** among these three stakeholders: Danida, the Vietnamese ministries, and the Vietnamese local counterpart. As I have explained earlier, Danida is interested in diminishing its administration costs at the embassy by withdrawing considerably from programme management position and thereby empowering the Vietnamese ministries to undertake this task. The Vietnamese ministries are interested in having the full power of deciding programme beneficiaries and selecting the location and the implementing agencies they prefer (even though the selected implementing agencies are sometimes not the right ones to implement the programme activities), whereas the Vietnamese local counterpart is occupied by communicating directly with Danida as regards location and implementing agency selection and not via the ministries concerned. A study could deal with **how this conflict is going to influence the anti-corruption element and the benefits of the ultimate beneficiaries of Danida's new programmes**.

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Annexes

Annex 1.1: List of visited sites in Phú Thọ province

Date	Site	Address
10.3.2006	Environmental Monitoring Station	Nông Trang ward, Việt Trì city
11.3.2006	Nông Trang market	Nông Trang ward, Việt Trì city
12.3.2006	Dầu market	Diêu Lâu ward, Việt Trì city
12.3.2006	Tân Dân market	Tân Dân ward, Việt Trì city
13.3.2006	Gia Cẩm market	Gia Cẩm ward, Việt Trì city
13.3.2006	Wastewater treatment plant at Phú Thọ Provincial General Hospital	Tân Dân ward, Việt Trì city
13.3.2006	Gát market	Thọ Sơn ward, Việt Trì city
14.3.2006	Wastewater treatment plant at Phú Thọ Town General Hospital	Âu Cơ ward,, Phú Thọ town, Phú Thọ province
14.3.2.006	Biogas plants (See also **Annex 1.1.1**)	Tiên Cát ward, Việt Trì city
15.3.2006	Việt Trì Chemical Company	Thọ Sơn ward, Việt Trì city
15.3.2006	Trí Đức Company Ltd.	Hồng Hà St., Bến Gót ward, Việt Trì city
15.3.2006	Biogas plants (See also **Annex 1.1.1**)	Minh Nông commune, Việt Trì city
17.3.2006	The Green Belt	Hùng Vương boulevard, Việt Trì city Trần Phú street, Việt Trì city War soldiers' cemetery of Việt Trì city
17.3.2006	Việt Trì Plywood Company	Hồng Hà St., Bến Gót ward, Việt Trì city
18.3.2006	Vĩnh Phú Textile Company	Hùng Vương boulevard, Nông Trang ward, Việt Trì city
18.3.2006	Bạch Hạc market	Bạch Hạc ward, Việt Trì city
21.3.2.2006	Việt Trì Ceramic Company	Hồng Hà St., Bến Gót ward, Việt Trì city
21.3.2006	Vân Phú Domestic Wastes Recycling Plant	Vân Phú commune, Việt Trì city
22.3.2006	Minh Khai Tunnel Brick Manufactory	Minh Phương commune, Việt Trì city
22.3.2006	Việt Trì Food Processing Factory	Hồng Hà St., Bến Gót ward, Việt Trì city

Annex 1.1.1: List of visited households benefiting the biogas plants

Households in Tiên Cát ward

No.	Full name	Number of plant
1	Cao Xuân Hưng	1
2	Đinh Hồng Kha	2
3	Lê Hồng Bện	1
4	Lưu Văn Tập	1
5	Nguyễn Ngọc Đính	1
6	Nguyễn Văn Nghĩa	1

Households in Minh Nông commune

No.	Full name	Number of plant
1	Đào Duy Hùng	1
2	Đào Văn Thân	1
3	Đào Văn Tiếp	1
4	Đỗ Xuân Tám	1
5	Lê Văn Đồng	1
6	Lê Văn Thảo	1
7	Nguyễn Văn Tân	1
8	Nguyễn Văn Hậu	1
9	Nguyễn Quốc Hoan	1
10	Nguyễn Văn Nông	1
11	Nguyễn Văn Hồng	1
12	Nguyễn Đức Xuân	1
13	Nguyễn Quang Sáng	1
14	Nguyễn Văn Tiến	1
15	Nguyễn Thị Hường	1
16	Nguyễn Văn Lâm	1
17	Nguyễn Văn Đường	1
18	Nguyễn Quang Trung	1
19	Phạm Đức Công	1
20	Phạm Văn Đoàn	1
21	Lê Văn Lợi	1
22	Nguyễn Văn Lâm	1
23	Nguyễn Thị Liên	1
24	Nguyễn Văn Long	1
25	Nguyễn Văn Bảo	1
26	Nguyễn Văn Cường	1

Annex 1.2: List of interviewees

Date & Time	Name and position	Contact information
06.7.2005 19.10.2005	Mr. Morten Jørgensen Senior Technical Advisor of Việt Trì Project	COWI A/S Parallelvej 2 Kongens Lyngby Tel: (0045) 45972211 Email: mjo@cowi.com
05.01.2006, at 14.00	Mr. Jan Riemer Senior technical advisor in the Environment Group of the Technical Advisory Services	Ministry of Foreign Affairs Asiatisk Plads 2, Copenhagen K Tel: (0045) 33920219 E-mail: janrie@um.dk
08.01.2006, at 10.00	Mr. Jens Lorentzen Chief Advisor of Danida's Centre for Competence Development	12 Strandgade, Copenhagen K Tel: (0045) 49760028 Email: jenlor@um.dk
10.3.2006, at 10.00	Ms. Tạ Hồng Yến ISO 17025 technical specialist of the Environmental Monitoring Station (EMS)	Phường Nông Trang, thành phố Việt Trì
11.3.2006, at 15.45	Mr. Vũ Sứ Quý Vice team-leader of Nông Trang Market Management Team	Chợ Nông Trang, phường Nông Trang, thành phố Việt Trì Tel: (0084-210) 847280
12.3.2006, at 11.00	Mr. Lưu Hùng Lục Leader of Dầu Market Management Team	Chợ Dầu, phường Dữu Lâu, thành phố Việt Trì Tel: (0084-210) 940532
12.3.2006, at 16.00	Mr. Bùi Đức Ngọc Leader of Tân Dân Market Management Team	Chợ Tân Dân, phường Tân Dân, thành phố Việt Trì Tel: (0084-210) 091 5 378232
13.3.2006, at 9.30	Mr. Mai Ngọc Thắng Leader of Gia Cẩm Market Management Team	Chợ Gia Cẩm, phường Gia Cẩm, thành phố Việt Trì Tel: (0084-210) 854249
13.3.2006, lúc 8.45	Mr. Phạm Nhật Thịnh Head of the Administration Section of Phú Thọ Provincial General Hospital	Phường Tân Dân, thành phố Việt Trì Tel: (0084-210) 846519
13.3.2006, at 14.00	Mr. Lưu Đức Thắng Leader of Gát Market Management Team	Chợ Gát, phường Thọ Sơn, thành phố Việt Trì Tel: (0084-210) 910531
14.3.2006, at 9.00	Mr. Phạm Huy Thưởng Head of the Administration Section of Phú Thọ Town General Hospital	Phường Âu Cơ, thị xã Phú Thọ, tỉnh Phú Thọ Tel: (0084-210) 822311
14.3.2.006, at 15.30	Mr. Đinh Hùng Kha – beneficiary of two biogas plants	Phường Tiên Cát, thành phố Việt Trì
15.3.2006, at 8.30	Mr. Đỗ Quốc Hội Technical vice-director of Việt Trì Chemical Company	Phường Thọ Sơn, thành phố Việt Trì Tel: (0084-210) 911696
15.3.2006, at 10.00	Mr. Phạm Văn Chính Technical manager of Trí Đức Company Ltd.	Đường Hồng Hà, phường Bến Gót, thành phố Việt Trì Tel: (0084-210) 862626
16.3.2006, at 9.00	Mr. Nguyễn Thế Yên, vice-director of Department of Industry	Đường Châu Phong, thành phố Việt Trì Tel: (0084-210) 848510
16.3.2006, at 14.00	Ms. Đỗ Huyền Bảo Ngọc Expert of Section of Economic and	Đường Trần Phú, thành phố Việt Trì Tel: (0084-210) 848400

	External Relations, Department of Planning and Investment	
16.3.2006, at 15.00	Mr. Nguyễn Bình Hoà Acting head of Phú Thọ Market Management Board	Chợ Trung tâm, thành phố Việt Trì Tel: (0084-210) 811467
17.3.2006, at 10.30	Mr. Phạm Văn Tính Specialist of Department of Health	Đường Trần Phú, thành phố Việt Trì Tel: (0084-210) 846322
17.3.2006, at 14.00	Mr. Vũ Chí Cần Technical manager of Việt Trì Plywood Company	Đường Hồng Hà, phường Bến Gót, thành phố Việt Trì Tel: (0084-210) 862362
18.3.2006, at 7.00	Mrs. Hoàng Thị Lê Hoan Technical manager of Vĩnh Phú Textile Company	Đại lộ Hùng Vương, phường Nông Trang, thành phố Việt Trì Tel: (0084-210) 846409/841516
20.3.2006, at 13.30	Mr. Đặng Đình Vượng Director of Department of Natural Resources and Environment	Đường Nguyễn Tất Thành, phường Tân Dân, thành phố Việt Trì Tel: (0084-210) 856 889
21.3.2.2006, at 9.00	Mr. Nguyễn Văn Minh Technical manager of Việt Trì Ceramic Company	Đường Hồng Hà, phường Bến Gót, thành phố Việt Trì Tel: (0084-210) 846487
21.3.2006, at 10.00	Mr. Đặng Xuân Tạo Technical and production planning officer of Vân Phú Domestic Wastes Recycling Plant	Xã Vân Phú, thành phố Việt Trì Tel: (0084-210) 952799
22.3.2006, at 8.00	Mr. Đỗ Thanh Tuấn Chief accountant of Minh Khai Tunnel Brick Manufactory	Xã Minh Phương, thành phố Việt Trì Tel: (0084-210) 844920
22.3.2006, at 14.00	Mr. Nguyễn Thanh Bình Shift chef of Việt Trì Food Processing Factory	Đường Hồng Hà, phường Bến Gót, thành phố Việt Trì Tel: (0084-210) 844468
28.3.2006, at 15.00	Mr. Đào Nhất Định National programme officer of the Royal Danish Embassy	19 Điện Biên Phủ, Hanoi Tel: (0084-210) 8231888 Email: nhadin@um.dk
02.4.2006, at 17.00	Mr. Nguyễn Tất Thắng Former Manager of Việt Trì Project	Phòng 503, Nhà A, Khu di dân Vĩnh Phúc, Phố Đội Cấn, Hanoi Tel: (0084) 98 9 556756 Email: nguyentat_kl@yahoo.co.uk
07.4.2006, at 14.00	Mr. Peter Van Dommelen Program Support Manager of Plan International in Vietnam	10th floor, Toà nhà thủ đô, 72 Trần Hưng Đạo, Hanoi Tel: (0084-4) 8220661 Email: peter.vandommelen@plan-international.org
11.4.2006, at 17.30	Mr. Nguyễn Chiến Thắng Manager of Plan International Project Office in Phú Thọ	Plan International Project Office in Phú Thọ, Tổ28, phường Tân Dân, thành phố Việt Trì Tel.: (0084) (210)940136 Email: thang.nguyenchien@plan-international.org

Annex 1.3: List of corresponded people

Date	Name and position	Contact information
03.4.2006	Mr. Nguyễn Đức Tân Project officer and officer of Quảng Trị Provincial People's Committee	45 Hùng Vương St., Đông Hà town, Quảng Trị province Email: newsnow2603@yahoo.com
07.4.2006	Mr. Nguyễn Quang Phước – Coordinator of Care International in Cà Mau Province	191 Lý Thường Kiệt St., Ward 6, Cà Mau city Tel.: (0084-780) 567944 Email: nqphuoc@carehcm.org
07.6.2006	Mr. Morten Jørgensen, Senior Technical Advisor of Việt Trì Project	COWI A/S Parallelvej 2 Kongens Lyngby Tel: (0045) 45972211 Email: mjo@cowi.com

Annex 2.1: Checklist of Plan International's economic and financial sustainability questions[22]

- Can the project continue without further funding from Plan?
- Does the community know for how long Plan will finance the project?
- Is there a gradual reduction of Plan's contribution to allow communities / other institutions to adjust to their own increasing responsibility?
- Are the government / other institutions required to provide continued financing (and/or human resources, materials)?
- What evidence is there that this commitment will be fulfilled (e.g. contractual agreement, previous experience)?
- Is the community required to fund this project in the future?
- Was the ongoing community contribution clearly explained during planning? Were the community members involved in setting contribution levels required? Are community members aware of their ongoing commitment?
- What evidence has there been to date that the community can make financial contributions – e.g. capital contribution at start of project, regular contributions to other projects?
- Can members of the community afford to contribute towards this project? Are there mechanisms to ensure that the poorest can still benefit from the project?

[22] Plan International. 2002a. *ETG 0.4 Program Sustainability* in CPME Evaluation Technical Guides, pp. 3-4.

- Do cost recovery mechanisms include contributions for operational (including running costs and repair costs) and replacement costs if appropriate?
- Does the community have access to markets/supplies required to sustain the project?
- Are income-generating projects resulting in increased income among participants? Is the increased income sufficient to justify the time/monetary commitment of participants? Is the income sufficient after considering all future costs (including replacing equipment, travel costs, delivery costs originally covered by Plan)?
- Is there long-term demand for the products of income generating projects?

Annex 2.2: Checklist of Plan International's institutional sustainability questions[23]

- How does the political situation at the community, district or national level impact on the sustainability of the program?
- Are community leaders and district/national politicians involved in Plan's work?
- Are the aims of the program/project consistent with what local leaders and district/national government are trying to achieve – e.g. is it consistent with current Government policy?
- Is the project / program susceptible to a change in government or change in government policy?
- Are Plan communities able to access and influence local government?
- Has the project improved the community's ability to access government (or other) funding?
- Does the community have structures in place to manage project implementation (e.g. project development committee)? Are roles and responsibilities clearly defined?
- Is the community structure responsible for the management of Plan projects compatible with the established community leadership structure?
- Does the community have the capacity to manage all aspects of project implementation? If not, is Plan working to build this capacity of the community?
- Has the community developed links with local government or other institutions for ongoing support/technical input – e.g. Ministry of Health, Ministry of Education, etc?

[23] Plan International. 2002a. *ETG 0.4 Program Sustainability* in CPME Evaluation Technical Guides, pp. 4-5.

- Are records kept in a format that is transparent and accessible to members of the community?

- Does the community have a system to ensure that all contributions are made when required?

- What has been the experience so far in getting the community to contribute – money, materials, labour - as required? Have the community been able to solve problems that have arisen?

- Does Plan monitor project performance and community management performance and assess (over time) the financial sustainability of the project?

- Is the community (or other) contribution recognized in the project plan?

Annex 2.3: Checklist of Plan International's social sustainability questions[24]

- What evidence is there that all target groups (women, men, girls, boys) support the project? – e.g. how were the community management committee selected?

- How actively are these target groups involved and to what extent have they been consulted in project preparation?

- Are community relations conducive to the continuation of the program goals? Has the project caused any divisions in the community (social, political, religious)?

- If the program has had an impact on cultural values or priorities (e.g. - education for girls, traditional circumcision practices), to what extent will this continue after Plan's support is withdrawn?

- How will the project/program ensure that the poorest/most marginalized have continued access to the program benefits?

- Will the project lead to sustained and equitable access to women and men, girls and boys to the services and infrastructures?

[24] Plan International. 2002a. *ETG 0.4 Program Sustainability* in CPME Evaluation Technical Guides, pp. 4-5.

Annex 3.1: Further details of the provincial stakeholders

Phú Thọ Provincial People's Committee (Phú Thọ PPC), like any other Provincial People's Committees belonging to the Vietnamese administrative system, is the highest day-to-day executive authority at provincial level. It is elected by its corresponding People's Council and is responsible for executing the Constitution, laws and written documents issued by upper echelons, and resolutions of its corresponding People's Council. Its general obligations, responsibilities and rights are as follows (Le 2005:18-23).

In the economic field

- To make general socio-economic development planning, branch planning, and rural and urban development under its management; to make annual and long-term projects and plans in relation to provincial socio-economic development in submission to its corresponding People's Council;

- To participate in the division of economic zones; to implement ministerial and central-level programmes and projects in its territory; to organise and inspect the implementation of programmes and projects;

- To draw up state budgetary revenue in the locality; to draw up the local revenues and expenditures; to plan for budget allocations in its territory andsubmit to its corresponding People's Council for consideration and approval; the estimate of revenue budget at its level; to plan for budget adjustments in necessary cases; to draw the balance-sheet in the locality and submit to its corresponding People's Council for consideration in line with provisions of law;

- To supply concrete guidance to and inspect tax offices and budget-collecting bodies entrusted by the State, in line with provisions of law;

- To set up projects on collecting charges and fees and people's financial contributions, and the level of capital mobilisation; submit the projects to its corresponding People's Council for consideration and approval;

- To set up projects on decentralising investments in the construction of socio-economic infrastructures of the locality in line with provisions of law and submit the projects to its corresponding People's Council for consideration and approval; organise and supply concrete guidance to the implementation of the approved projects;

- To establish a financial contingency fund in accordance with provisions of law, submit to its corresponding People's Council and report to the financial organ of higher level.

In land field

- To make plans for land use in submission to its corresponding People's Council for approval; to adopt planning and plans on land use of People's Committees under its jurisdiction; to decide land allocation, recovery and rent; to solve land disputes; to inspect land management and use, and some other tasks in accordance with provisions of law;

In the fields of industry and minor handicrafts

- To make plans for the development of industry and minor handicrafts in the locality; to organise the state management on industry and minor handicrafts enterprises in the locality under its jurisdiction;

- To organise the implementation of programmes and projects on developing industry, construction, industrial zones, processing zones, planned economic zones; to supply concrete guidance to and inspect the construction and development of industrial, commercial, services and tourist complexes, branches, occupations and traditional occupational villages in the locality; to develop foundations for processing agricultural-forestry-fishery produces and other industrial foundations;

- To organise the implementation of protecting unexploited natural resources and minerals in the locality.

In the fields of construction and urban development and management

- To organise the establishment, submission for approval, or consideration for approval by jurisdiction plans on building zones, urban areas in the locality; to manage the architecture, construction and construction land; to adopt plans and investment projects on construction works in line with its jurisdiction; to administer the construction and issue construction permits in the locality;

- To manage the investment, exploitation and utilisation of urban infrastructure technical works, urban areas, populated areas in rural areas; to administer the implementation of policies on housing and residential land; to administer public houses;

- To make plans for developing construction materials; to administer the exploitation, production and selling and buying of construction materials in the locality in line with its jurisdiction.

In the fields of health and social issues

- To administer the activities of provincial health units and issue health and pharmaceutical operation permits for individuals;

- To supply concrete guidance to and inspect the implementation of measures of protecting people's health, caring for elder people, the disabled and homeless orphans; to protect and take care of mothers and children; to implement population and family planning policies;

- To supply concrete guidance to and inspect the implementation of policies and privileged regulations for war invalids, sick soldiers, martyrs' families, people and family to whom the country is indebted;

- To carry out plans and measures of using labours and solving employment-related problems; to figure out unemployment problems;

- To carry out policies on labour protection, social insurance and aid, hunger elimination, poverty reduction and improvement of living conditions for people; to give guidance to the implementation of charitable and humanitarian work; to prevent and fight against social evils and epidemics in the locality.

In the fields of science, technology, natural resources and environment

- To supply concrete guidance to and inspect the implementation of concrete tasks and plans relating to science and technology development, and environmental protection; to implement measures of encouraging researches, promoting technological improvement initiatives, applying technological and scientific advances to production and life;

- To supply concrete guidance to and inspect the implementation of measures relating to the management and utilisation of land, forests and mountains, rivers and lakes, water sources, underground natural resources, sea beneficial sources in the locality in accordance with provisions of law;

- To supply concrete guidance to, organise the implementation of and suspect the protection and improvement of environment; preventing, fighting against and rehabilitating consequences of natural disasters, storms, floods, environmental

pollutions and degradation; to define responsibilities of organisations and individuals connected with environmental problems in accordance with provisions of law;

- To administer scientific research projects and programmes at provincial level or assigned by upper echelons; to administer the technological transfer activities; to participate in making a state expertise on technology in relation to important investment projects in the locality;

- To supply concrete guidance to, investigate and inspect the implementation provisions of law with reference to measurement standards and product quality; radiation safety and control; industrial possession; execution of policies and laws on science, technology and environmental protection in the locality; prevention of producing and circulating on the market false or bad-quality commodities.

Department of Science, Technology and Environment (DoSTE); Department of Planning and Investment (DPI); Department of Health (DoH); Department of Industry (DoI); Department of Labour, Invalid Soldiers and Social Affairs (DoLISSA); and Department of Construction (DoC) are provincial *line representatives* (cơ quan chuyên môn) acting as advising bodies to Phú Thọ PPC in accordance with their functions, obligations and rights. They assist Phú Thọ PPC in realising state management tasks within Phú Thọ province and ensuring a unified management of the concerned sector from national to local level. All these departments operate under the overall and direct supervision of Phú Thọ PPC, and simultaneously under the steering, instruction and professional monitoring of their line ministry.

According to Government Decree No.171/2004/ND-CP regulating the organisational structure of *line representatives* of People's Committees of Provinces and Municipalities, provincial *line representatives* have the following fundamental duties and rights (Le 2005:27-28):

- To propose their corresponding People's Committee to issue decisions and instructions related to their assigned tasks;

- To submit to their corresponding People's Committee projects; annual, 5-year and long-term plans;

- To submit to their corresponding People's Committee programmes and measures of implementing the assigned administrative reform tasks;

- To submit to their corresponding People's Committee decisions concerning the establishment, merging or disintegration of their sub-units;

- To propose their corresponding People's Committee to issue standards and titles for directors and vice-directors of line representatives of districts, precincts, towns and cities;

- To organise the implementation of legal documents, projects, plans;

- To organise the implementation and take responsibility of making a valuation, registering, issuing permits, diplomas and certificates in accordance with provisions of law or the assignment or entrustment of their corresponding People's Committee;

- To help their corresponding People's Committee in managing and supervising enterprises, collective economic organisations, individual economic organisations, civil societies and NGOs;

- To take care of international cooperation in accordance with provisions of law or the assignment or entrustment of their corresponding People's Committee;

- To chair or coordinate with Department of Home Affairs and Department of Finance to inspect and instruct the self-reliance and self-responsible mechanism of units under their jurisdiction;

- To carry out researches and applications of science and technology advances;

- To solve claims and accusations;

- To regulate functions, obligations and rights of offices, professional divisions and career units under their jurisdiction.

Here I would like to note that until 2003, Department of Science, Technology and Environment (DoSTE) was responsible for doing researches, transferring and applying scientific and technological advances into practice, managing water and mineral resources, environmental-related issues, hydrometeorology, and surveying. In 2003, however, DoSTE was divided into two different departments: Department of Science and Technology (DoST), and Department of Natural Resources and Environment (DoNRE). Since then, DoST has only been having the responsibility of doing researches, transferring and applying scientific and technological advances into practice, whereas DoNRE is assigned to take care of managing land-water-mineral resources, environmental-related issues, hydrometeorology, and surveying (People's Committee of Phú Thọ Province 2006:91-100).

The Management Board of Phú Thọ Industrial Zones is the body that was set up in 1997 and has the authority of monitoring all industrial zones located in Phú Thọ province. It assists domestic and international investors in terms of legal procedures; receives, considers

and approve projects; issues, allocates or withdraws investment licences; organises the implementation of the ratified projects and supervise the activities of enterprises located in the industrial zones.

Phú Thọ Provincial General Hospital was founded in 1964. It is located in Tân Dân ward, Việt Trì city, and is under the direct management of Department of Health. It has 28 departments and divisions and more than 500 employees (Interview with Mr. Phạm Nhật Thịnh, head of the Administration Section, Phú Thọ Provincial General Hospital), and is capable of receiving 850-900 patients per day, 750-800 of whom are in-patients.[25]

Phú Thọ Provincial General Hospital

Being located in Âu Cơ ward, Phú Thọ town, **Phú Thọ Town General Hospital** was set up under the French colonial period and is, like Phú Thọ Provincial General Hospital, directly administered Department of Health. It has 20 departments and 230 employees, and is capable of serving 230 patients per day even though the actual number of daily patients is always up to 270 and 300 (Interview with Mr. Phạm Huy Thưởng, head of the Administration Section, Phú Thọ Town General Hospital).

There were **13 district hospitals, clinics and health care centres** selected to participate in Việt Trì Project, but their participation was very little, not as Phú Thọ Provincial General Hospital and Phú Thọ Town General Hospital's.

Phú Thọ Environmental Monitoring Station is based in Gia Cẩm ward, Việt Trì city, and administered by Phú Thọ DoNRE. It has three Divisions: Division of General Administration and Planning, Division of Environmental Analysis and Monitoring, and Division of Environmental Management. The key functions, obligations and rights of the Station are to periodically monitor, supervise and control environmental data both in the province and the neighbouring area; to collect and archive environmental data and database; to carry out environmental statistical surveys; analyse the environmental status quo and make solution proposals; to organise environmental consultation and technological transfer activities; etc. (Ủy ban nhân dân tỉnh Phú Thọ 2005).

Hữu Nghị Soldering Manufactory is located in Nông Trang ward, Việt Trì city and owned by the Financial and Administration Section of Phú Thọ Provincial People's Committee. The Manufactory has two similar production lines which produce solders of all types, and automatic and semi-automatic welding wires. Major environmental problems are high emissions of dust and noise (Viet Nam Cleaner Production Centre 2004b:1).

[25] http://www.baophutho.org.vn/baophutho/vn/website/tin%2Dtuc%2Dsu%2Dkien/100CFB8155A/2007/12/1099A057BBE/

Minh Khai Tunnel Brick Manufactory (henceforth: Minh Khai Manufactory) is a subsidiary of Phú Thọ House Construction and Development Company and was established in 1958 in Minh Phương commune, Việt Trì city. Before 1998, Minh Khai Manufactory was producing bricks and tiles using vertical shaft kiln, but since 1998, Minh Khai Manufactory has been focusing on producing 2-hole bricks using tunnel kiln (tunnel bricks for short) thanks to the installation of a semi-automatic brick production system.

Minh Khai Manufactory under production

The new system has positively changed the production capacity at Minh Khai Manufactory, from 3 to 5 million pieces to 18 million pieces per year. Main production inputs are clay dust, electricity and clay. Major environmental problems at Minh Khai Manufactory are accumulated wastes deriving from broken bricks and redundant clay; CO and SO_2, which are not by any means filtered before they are discharged to the air; gases, which used to burn the rice fields nearby; and dust (Viet Nam Cleaner Production Centre 2004a:2&7).

Nghĩa Hưng Cotton-Yarn Company Ltd. was set up in 1996 and is located in Minh Phương commune, Việt Trì city. The company produces low-grade yarn from fibre wastes imported from textile and garment companies in the northern Vietnam, and paper tubes with diameters from 20 ^{mm} to110 ^{mm} in form of cone shape and cylinder. The main environmental problem of the company is high concentration of dust, which is 1.45 times higher than Ministry of Health's allowed standard (Viet Nam Cleaner Production Centre 2004b:3&4).

Sông Lô Ship-building Factory is a public enterprise owned by Việt Nam Shipping Industry Company, Ministry of Transportation. The factory was constructed in Dữu Lâu commune, Việt Trì city in 1969 and put into use in 1975. It has three yards: wood shell building yard, steel shell building yard, and mechanic-machine yard, which produce 400 DWT freighters, passenger boats, tourist boats, ferries, 200-600 DWT barges, ship accessories, and steel compositions serving industrial-agricultural purposes; and repairs freighters, barges, and ferries. The most serious environmental problem faced by the factory is sand dust, which is just blasted in the open air without any shielding or dust suction, affecting the workers/ heath and the residents living nearby (Viet Nam Cleaner Production Centre 2004j:1&2).

Trí Đức Company Ltd. was established in 1995 and is located in Bến Gót ward, Việt Trì city with 412 employees. At the beginning, the company had 20 weaving machines and 30 employees. In 2000, the company bought and installed an integrated production line from yarning, weaving to dying and other fabric finishing processes. Main production inputs are

polyester fibre (PE fibre), chemicals (silicate and soda), coal, electricity, DO oil, lubricant, gas, and water.

Trí Đức Company Ltd. under production

Primary products of the company are grey fabric, and bleached and dyed fabric, whose total capacity was approx. 1,230,000 tons in 2003, yarn, whose total capacity was approx. 460,000 kilos in the same year. The company's main solid wastes are cinders; such gases as CO_2, NO, SO_2, and H_2S; and wastewater containing BOD_5 and COD[26].

Việt Trì Ceramic Company was set up in 1974 and is affiliated to Viet Nam Glass and Ceramic for Construction Corporation. Being located in Tiên Cát ward, Việt Trì city, the company has been producing such advanced ceramic products such as tiles, lavatories, wash basins, accessories, etc. with "Viglacera" trademark. Main inputs for production activities are clay, fenspat, China clay, quartz, gas, electricity, water, and other additives.

Completed ceramic products at Việt Trì Ceramic Company

Primary solid wastes are from the clay, whose daily volume is about 2 tons, which are partly buried and partly given to a pagoda in the neighbourhood for serving construction purpose. Basic gases are CO, CO_2, NO, SO_2, and NO_2. Wastewater, whose average volume is 20 m^3 per day and night, contains BOD_5, COD, Fe, Al, Zn, Cr, Ba, and suspended matters. It passes micro-organic treatment before flowing to the lake nearby. The current number of employees at the company is 378[27] (See **Annex 4.3** for pictures of the company).

Việt Trì Chemical Company was founded by China's support in Thọ Sơn ward, Việt Trì city in 1961 on an area of about 11 ha. It produces liquid NaOH 100% (6,000 tons/year), HCl 31% (11,000 tons/year), liquid Cl_2 (1,000 tons/year), javel solution 7% (4,500 tons/year), $CaCl_2$ powder (2,500 tons/year), detergent (4,000 tons/year), NPK fertilizer (7,000 tons/year), and Na_2SiO_3 (2,000 tons/year).

The backyard of Việt Trì Chemical Company is congested by cinders

[26] Interview with Mr. Phạm Văn Chính, technical manager of Trí Đức Textile Company Ltd.; Viet Nam Cleaner Production Centre. 2004c:3&6; Trí Đức Textile Company Ltd. 2005:1-3.
[27] Interview with Mr. Nguyễn Văn Minh, technical manager of Việt Trì Ceramic Company; Việt Trì Ceramic Company. 2004:2-5.

The main production line, however, is NaOH-Cl_2 based upon the electrolysis of NaCl, Javelle water and HCl. Key resources and raw materials which have been used for production activities are coal; such chemicals as NaCl, Na_2CO_3, Lah, Na_2SO_4, NPK fertilizer, urea, MAP; DO + FO oil, electricity; and water. The company is facing a serious problem with accumulated solid wastes mainly deriving from cinders, whose daily volume is about 3.5 tons. Due to lack of a treatment place in the locality, the company has been solving the solid wastes by partly burying them and partly let them accumulate in the back-yard of the company (Viet Nam Cleaner Production Centre 2004e:3).

Việt Trì Food Processing Factory is the precursor of Việt Trì Vermicelli and Noodles Factory. It was constructed in Thọ Sơn ward, Việt Trì city in June 1962 on the basis of China's support. At the beginning, the main products composed of green bean vermicelli, monosodium glutamate, noodles, soya sauce, and shrimp chips for export. In 1989, the factory cooperated with Hải Hà Confectionery and focused on the production of hard and soft sweets.

Sweet processing at Việt Trì Food Processing Factory

The factory was merged with Hải Hà Confectionery in 1994 and has expanded and diversified the production since then. Today, there are two soft sweet production lines, one glucose production line, one jelly (a kind of sweet) production line, one instant noodles production line, and one starch paper production line at the factory. Main production inputs are granulated sugar, imported glucose, starch, cassava, oil, coal, electricity, and water. At the factory, 50% of wastewater, which mainly contains BOD_5, COD and suspended matters, is reused. The rest is not treated and just discharged to the nearest river. Emitted gases are CO, SO_2, and NO_2. Solid wastes are partly collected by Việt Trì URENCO and partly sold (Việt Trì Food Processing Factory 2004:2&8).

Việt Trì Plywood Company is located in Bến Gót ward, Việt Trì city and is possessed by Thái Nguyên Woodchip Board Company. The two main products of the company are fibreboards, whose annual production capacity is 10,000 m^3, and woodchip-boards, whose annual production capacity is 2,000m^3. Main production inputs are wood, urea adhesive 51%, ammonium chloride, paraffin 20%, $CaCO_3$ powder, sand paper, oil, coal,

The reservoir where all the wastewater is gathered and receives preliminary treatment

electricity, and water. The wood powder deriving from the section fibreboard production lines, the wood dust coming from woodchip-boards drying activities, phenol formaldehyde, and other chemicals whose pH, BOD_5, COD, and SS values exceed the allowed level are primary environmental problems at the company (Viet Nam Cleaner Production Centre 2004m:1&6).

Viger Brewery is a public enterprise and owned by Sugarcane Corporation No. 1, Ministry of Agriculture and Rural Development. Key products are beer in kegs, alcohol 96%, liquor of different types, and candy. Beer production at the brewery generates a large volume of wastewater - on evarage10 litre of waste water/ litre of beer. Wastewater contains a large amount of basically suspended matters, nitrogen, phosphorus, COD, and BOD. Main solid wastes are from grains and yeast, packages, labels, spoilt plastic bags, broken bottles, and domestic wastes. The spent grains are used as feed while the other wastes are collected by Việt Trì URENCO. Gases encompass CO, CO_2, NO, NO_x, SO_2, etc. (Viet Nam Cleaner Production Centre 2004f:3-14).

Vĩnh Phú Plastic Joint-Venture Company was established in Bến Gót ward, Việt Trì city in 1995 as a result of the partnership between Sông Lô Trading Company (Vietnam) and Sung Lip (South Korea). Main products of the company are PVC (Polyvinyl chloride) carpet, whose production capacity is 7.2 million metres per annum, and PVC plastered cloth, whose production capacity is 6 million metres per annum. At the company, the dust and organic solvent vapour in the workshop seem to be the most severe problems since they directly affect the workers' health (Viet Nam Cleaner Production Centre. 2004o:1-3).

Vĩnh Phú Textile Company was founded in Nông Trang ward, Việt Trì city at the beginning of the 70s with the assistance of the Chinese government and is today a member of Việt Nam Textile Corporation. The company has three member factories: yarn factory, weaving factory, and dying factory. Main products of the company are yarn (capacity approx. 4,000 tons/year), grey fabric (capacity approx. 5 million m^2/year), finished fabric (capacity approx. 5 million m^2/year), and finished towels (capacity approx. 200 tons/year).

Wastewater of the company is treated in a microbiological tank

Primary production inputs are cotton, PE fibre, dye, DO oil, coal dust, gas, electricity, and water; whereas the outputs include yarn of all types, grey fabric and grey towel. Solid wastes are fundamentally fibrous particles and cinders, whose daily volume is about 1.2 tons. Wastewater (800-1000 m^3/day and night) which contains different kinds of chemicals is treated in microbiological tanks before being discharged to the Red River. Dust in the

production workshops and gases are the next serious problems at the factory (Viet Nam Textile Corporation-Vĩnh Phú Textile Company 2003:1-3).

Annex 3.2: Further information about Việt Trì People's Committee, Việt Trì Urban Environmental Company, and the six urban markets

Việt Trì People's Committee (Việt Trì PC) is the highest day-to-day executive authority at local (city) level. It is elected by the corresponding People's Council and is responsible for executing the Constitution, laws and written documents issued by upper echelons incl. the provincial, and resolutions of its corresponding People's Council.

Việt Trì Urban Environmental Company (URENCO) used to be a public enterprise and is today equitilised. It was established to provide Việt Trì city with such fundamental public services as street lightening, cleaning of streets and parks, collection of domestic wastes, planting of trees on the streets and parks, and maintenance of drains and sewers. Operation budget relies mostly on the collected sanitary and environmental fees.

Bạch Hạc market almost did not exist until Việt Trì Project was launched. There were no basic buildings, stalls or vendors by the time the project proposal was made, submitted and approved (Informal conversations with Bạch Hạc market vendors). That is, a number of vendors doing temporary business like selling fresh meat, vegetables, spices, etc. around the existing Bạch Hạc market area was moved in after the market construction had been completed.


Fresh meat vendors of Bạch Hạc market

Nowadays, Bạch Hạc market is under the management of the People's Committee of Bạch Hạc ward. It's located in a residential area and very near to a river. The sanitary conditions at the market are very poor.

Dầu market is a kind of traditional market formed many years ago and located nearby a cultivation area. Before the existence of Việt Trì Project, all market vendors were sitting on the soil floor to do business. Some of them made temporary stalls for sun and rain protection. There were no toilets, no water and electricity supplies, and no fire prevention and control system.


The fish and seafood vendors of Dầu market

People gathered at the market only in the morning, and es
of the month – a very special local cultural choice which has almost no clear explanation.

Today, Dầu market is under the management of the People's Committee of Dữu Lâu ward, who appointed the so-called Dầu Market Management Board to take care of the daily supervision and management (Interview with Mr. Lưu Hùng Lục, head of Dầu Market Management Board).

Gát market is a large market with 6,130 m^2 in terms of area. The market is located in Thọ Sơn ward and has existed for many years. The business capacity of the market has however weakened since 1996 due to the fact that too many smaller temporary markets in the neighbourhood have come into existence. About 60% of the total area has been left unoccupied for several years, and it seems like more and more vendors tend to move out whereas fewer and fewer customers to visit the market.

The food vendors of Gát market

Before the Việt Trì Project's intervention, there were water-electricity supplies and fire prevention control system, yet the sanitary conditions at the market were very poor, and there was no toilet either. Together with Gia Cẩm and Nông Trang markets, Gát market is under the overall management of Phú Thọ Provincial Market Management Board (Interview with Mr. Lưu Đức Thắng, leader of Gát Market Management Team).

Gia Cẩm market is one of the central markets of Việt Trì city located on an area of about 2,000 m^2 in Gia Cẩm ward. The market has existed since 1995 and has always been crowded with vendors and customers thanks to the central location, the high concentration of residents, and especially the higher income level of its customers vis-à-vis that of customers at other markets.

Entrance of Gia Cẩm market

Before the intervention of Việt Trì Project in 2004, there were some buildings with divided stalls, limited water-electricity supply and fire prevention and control system at the market, yet no toilet, no concretised floors, and especially no water supply for the fresh meat vendors. Gia Cẩm market is under the daily supervision and management Gia Cẩm Market Management Team (Interview with Mr. Mai Ngọc Thắng, leader of Gia Cẩm Market Management Team).

Nông Trang market was set up in 1985 as a temporary, unstable and small market located in Nông Trang ward. During the formation process, it was upgraded gradually by Việt Trì city's related authorities. Today, the market has a total area of about 7,000 m^2 with a big

building for cloths, clothes, garments and other dry miscellaneous stuffs; a free area for vegetables and food vendors; two new buildings financed by Việt Trì Project; and a toilet.

There are water and electricity supplies as well as fire prevention and control system. The majority of customers of the market are those with low incomes – essentially factory workers. Nông Trang market is presently under the daily supervision and management Nông Trang Market Management Team (Interview with Mr.Vũ Sứ Quý, vice-leader of Nông Trang Market Management Team).

People doing business at Nông Trang market

Tân Dân market has come into existence on an area of approx. 1,200 m^2 in Tân Dân ward since 2000. At the beginning, it was a kind of temporary and unstable market. The vendors self-invested in some temporary stalls to do business. Like Dầu market, there were no buildings, no toilets, no water and electricity supplies, and no fire prevention and control system.

The front side of Tân Dân market

The number of vendors and customers at that time was not many. Tân Dân market has been under the overall management of the People's Committee of Tân Dân ward and the daily supervision and management of Tân Dân Market Management Team (Interview with Bùi Đức Ngọc, leader of Gia Cẩm Market Management Team).

Annex 3.3: Working Groups of Việt Trì Project[28]

Project Working Groups	Members
Working Group 1 (Component: Industrial Cleaner Production, Occupational Health Safety and Industrial Hazardous Waste)	Chambers of Environmental Management under Department of Science, Technology and Environment (Chair) Department of Industry (Vice-chair) Department of Planning and Investment Department of Labour, Soldier Invalids and Society Prevention Health Centre under Department of Health Environmental Monitoring Station under Department of Science, Technology and Environment Association of Trade Unions Management Board for the Industrial Zones Việt Trì City People's Committee Việt Trì URENCO Việt Trì Water Supply Company under Department of Construction
Working Group 2 (Component: Health Wastes and Wastewater)	Department of Health (Chair) Việt Trì Central Hospital under Department of Health (Vice-chair) Chambers of Environmental Management under Department of Science, Technology and Environment (Vice-chair) Department of Planning and Investment Preventive Health Care Centre under Department of Health Environmental Monitoring Station under Department of Science, Technology and Environment Việt Trì URENCO Việt Trì Water Supply Company under Department of Construction
Working Group 3 (Component: Industrial Wastewater)	Master planning Chamber under Department of Construction (Chair) Việt Trì Water Supply Company under Department of Construction (Vice-chair) Việt Trì URENCO (Vice-chair) Chambers of Environmental Management under Department of Science, Technology and Environment. Department of Industry Management Board for the Industrial Zones Department of Planning and Investment Department of Science, Technology and Environment; Chambers of Environmental Monitoring Prevention Health Care Centre under Department of Health

[28] COWI A/S & Danida. 2005b. *Industrial and Urban Development in Viet Tri City. Inception Report.* pp. 74-80. Ministry of Foreign Affairs, Denmark

	Việt Trì Central Hospital under Department of Health
Working Group 4 (Component: Urban Environmental Planning and Management, Markets, and Green Belts)	Việt Trì People's Committee (Chair) Việt Trì URENCO (Vice-chair) Chambers of Environmental Management under Department of Science, Technology and Environment (Vice-chair) Việt Trì Water Supply Company under Department of Construction Management Board for the Industrial Zones Environmental Monitoring Station under Department of Science, Technology and Environment Prevention Health Care Centre under Department of Health
Working Group 5 (Component: Community Awareness and Demo-projects, Information and Educational Material)	Department of Science, Technology and Environment (Chair) Việt Trì People's Committee (Vice-chair) Việt Trì URENCO Việt Trì Water Supply Company under Department of Construction Chambers of Environmental Management under Department of Science, Technology and Environment Environmental Monitoring under Department of Science, Technology and Environment Prevention Health Care Centre under Department of Health Women's Unions Youth's Unions
Working Group 6 (Component: Environmental Monitoring)	Department of Science, Technology and Environment (Chair) Environmental Monitoring Station under Department of Science, Technology and Environment (Vice-chair) Prevention Health Care Centre under Department of Health (Vice-Chair) Department of Planning and Investment Department of Industry Department of Labour, Soldier Invalids and Society Việt Trì URENCO Việt Trì Water Supply Company under Department of Construction

Annex 3.4: Expected outputs of Việt Trì Project

1. Developing Strategy and Action Plan, and a draft Project Document for support to Health Care Waste Management in Việt Trì city;

2. Developing Strategy and Action Plan and a draft Project Document for support to Industrial Hazardous Waste Management in Việt Trì city;

3. Developing Strategy and Action Plan and a draft Project Document for support to the Management of Industrial Cleaner Production including Occupational Health and Safety (OHS) for Việt Trì city;

4. Developing Strategy and Action Plan for the Integrated Management of domestic and industrial wastewater;

5. Developing capacity in Environmental Monitoring and Pollution Data Management within Phú Thọ DOSTE and Việt Trì city Water Supply Company;

6. Increasing awareness and knowledge of environmental problems and solutions - particularly related to household waste and sanitation at community and ward-level;

7. Increasing environmental awareness and knowledge of environmental management within industrial managers and provincial authorities;

8. Establishing around 20 small-scale fast-track cleaner production demonstration projects at industries in Việt Trì city;

9. Establishing a Green Belt (tree planting) as buffer zone between the domestic and industrial area in Việt Trì city;

10. Improving the environmental and sanitary conditions at a number of market places in Việt Trì city;

11. Developing ward-level environmental action plans and establishing low-cost environmental demonstration projects by local communities and ward-level representatives working in partnership with relevant authorities;

12. Improving the English language skill of the key project staff;

13. Producing and disseminating information and educational material (e.g. brochures, leaflets, videos) on environmental issues;

14. Implementing guidelines on Urban Environmental Planning and Management for Việt Trì city;

15. Facilitating and submitting for approval Application for Soft Loan financing of domestic and industrial wastewater treatment.

Annex 4.1: Key Articles about the Project Management Unit 18 (PMU18) Case

Monday March 20, 2006

"**State construction chief alleged of $500,000 bribe**[29]

Police said Sunday they have evidence to suggest a State construction director bribed senior policemen and State leaders with US$500,000 to clear his name from gambling charges.
Bui Tien Dung, general director of State road-construction Project Management Unit 18 (PMU18) handed out the money before he was arrested for gambling last month.

Earlier Dung was alleged to have bet US$1.8 million on international football games in just four weeks.

He has denied the latest charges by police– bribery and deliberate misconduct.

Evidence

Police said they have now identified three persons who raised some $50,000 and VND1 billion ($63,000) in the hopes of bribing officials to clear Dung's name.

They include Pham Tien Dung, PMU18 planning department manager who gathered the $50,000 from the PMU18 State budget, Nguyen Mau Thon, chairman of management board of Hoa Viet share-holding company, and an unnamed person.

Pham Tien Dung was arrested a month ago, while the two other persons came to police headquarters in Hanoi to return money they admitted was destined for bribery.

A source quoting information from police revealed there are still many other people whose identity has been kept secret, having joined in the campaign to clear the disgraced official's name.

Earlier, Thon had been summoned by police to give a statement concerning poor-quality construction projects, which Bui Tien Dung had assigned company Hoa Viet to building.

Last weekend, police convened Truong Tan Vien, chief of Planning and Investment Department under the Ministry of Transport, under allegations he had accepted a bribe of VND50 million ($3,150) from Bui Tien Dung.

A source said Dung has bribed Vien to get the bid on a construction package building national highway 27 in Ninh Thuan central province. The police investigation is ongoing, with more to be summoned to give statements on their involvement in the case."

[29] http://www.thanhniennews.com/society/?catid=3&newsid=13689

Wednesday, March 22, 2006

"**Deputy Minister admits to minor faults in corruption scam**[30]

With the PMU 18 state road construction agency embroiled in a major corruption scandal, the deputy minister of transport admitted to only a small part of the allegations against him. Nguyen Viet Tien, deputy minister of the Ministry of Transport, who was Tuesday summoned for police interrogation in Hanoi, admitted he made small mistakes in connection to serious corruption at the PMU18 – a state project directly managed by the transport ministry.

Tien spent his day responding police to three main issues – National Highway No 2's poor quality, the source of his large fortune in holdings including villas, plots of lands, farms and cars, and the illicit lending of at least 34 state cars to other individuals called 'bribery' by police, reported *Nguoi Lao Dong*.

Saigon Giai Phong newspaper Wednesday quoted a police chief as saying, Tien admitted responsibility in lending cars to other people and agencies, but rejected all the other allegations.

Nguyen Viet Tien was assigned by the transport ministry to directly manage fund investment capital of all projects carried out by PMU18.

Bribery allegations

Tien kept two of the 34 cars bought for PMU18 by the state, one of which was a Toyota Crown with valued at VND1.2 billion (US$75,500).

According to *Saigon Giai Phong,* an official whose name has been withdrawn from the transport ministry work list told police in a letter that Bui Tien Dung had earlier given a villa and a Toyota Camry 3.0 to one of Nguyen Viet Tien's girlfriends.

Earlier, Bui Tien Dung instructed his subordinates to buy a Mercedes E240 worth VND1.57 billion ($99,000) from state budget to give Nguyen Viet Tien as a 'gift'.

In addition, Pham Tien Dung, PMU18 planning department manager, once gave Bui Tien Dung and Nguyen Viet Tien each a villa worth VND3 billion ($189,000).

It has also been alleged that contractors interested in bids would have to bribe Bui Tien Dung from 5% to 15% of the total project to build it.

Under Vietnamese law a person making an illegal payment of VND500,000 ($31.5) or above is guilty of bribery.

[30] http://www.thanhniennews.com/society/?catid=3&newsid=13756

PMU18 was established in 1993 and till 1998, Nguyen Viet Tien was the general director, with Bui Tien Dung as his office manager.

From April 1998 till now, Tien jumped to deputy minister of the transport ministry and Dung was promoted to replace Tien as PMU19 general director.

Poor management

An unnamed official from the transport ministry said all construction projects managed by the PMU18 were involved in poor quality scandals, reported *Saigon Giai Phong.*

Since its establishment in 1993, PMU18 was allotted by its governing body, the transport ministry, to implement 20 projects which were divided into 3,000 construction packages worth VND32.9 trillion ($2.07 billion).

According to newswire vnexpress.net, during construction of the motorway from Noi Bai to Bac Ninh in north Vietnam, PMU18 falsified documents to inflate material prices four to five-fold to pocket the difference – about VND 40 – 50 billion ($2.5 million - $3.1 million).

The 140km, VND500 billion ($31.5 million) national highway number 2 project from Doan Hung to Thanh Thuy had cracks in its foundation, and sank after construction finished, reported the newswire.

Most motorways built by PMÚ8 and checked by authorities failed to meet construction standards.

Police questioning continues for the deputy minister today, March 22."

Reported by Nguyen Binh, Minh Thu – Translated by Minh Phat