



# Mixed Credit Program in Vietnam 2003-2019



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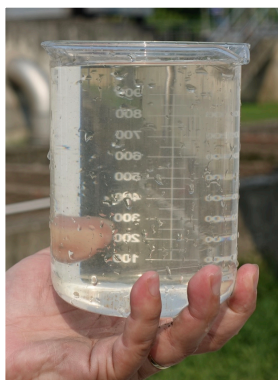
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## NORAD/KFW MIXED CREDIT PROGRAM IN VIETNAM

Consultant's Program Summary Report  
February 2020

### RÉSUMÉ

After a Program period of 16 years, and an investment of about 105 million euro, were the 12 projects in the fields of water supply, waste water and solid waste, successfully completed in December 2019. When the service areas are fully developed will the projects potentially improve the life (health, hygiene, environment) of about 1.2 million beneficiaries, at an average investment cost of only 90 euro per person-equivalent. Already today benefit about 700,000 people from the investment. According to the Project Owners' own judgement of the results, they value (on average), Relevance to 5.4 and Sustainability to 5.5, on a scale where 6.0 is best.

Oddwin Skaiaa

Tranor International AS has on this Program had a demand-based advisory role to Norad. Any opinion not referred to a source is that of the consultant.

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## Norad/KfW Mixed Credit Program in Vietnam 2003-2019



Waiting for a better life!  
These boys are now  
young men...

### Why Vietnam?

Norad has a long and successful history of using mixed credit financing as support for social and economic development in selected countries. Upon termination of the support to China, around 2003, it was natural to look for another country in the region, with potential for rapid growth. After enactment of its “renovation” (doi moi) policy in 1986, Vietnam has experienced one of the world’s highest GDP growth rates, averaging 6.7% over the period 2007-2018 (WB). Years of war had disabled the country’s ability to develop its physical infrastructure in proportion to the population growth. Improvement to the water supply and sanitation sectors was therefore a priority that conformed with both Vietnam’s and Norway’s development policies.

### Why Mixed Credit?

Concessional mixed credit is a funding facility institutionalized by the OECD. It is a blend of commercial credit and grant financing, aiming at softening the loan, with some additional grant support, depending on the recipient’s financial (poverty) condition. It can be provided for projects with short-term funding difficulty, but with a long-term (>10 years) positive potential.

This report demonstrates that the mixed credit financing facility has worked well for Vietnam and that, because of the financing mix, all water supply programs can run on sustainable tariffs and that 50% of the wastewater projects can cover operation and maintenance costs. All 12 projects are expected to be long-term physical and financial sustainable.



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## Abbreviations, Acronyms and Notes

Batch 1	The first six projects (Separate KfW Loan Agreement)
Batch 2	The last six projects (Separate KfW Loan Agreement)
CB	Capacity Building
CPC	City People's Committee
DAC	Development Assistant Committee (OECD)
DOWASEN	Dong Thap Water Supply and Urban Environment JSC
EUR	Euro (6 projects had EUR Contracts)
Fafo	Fafo Institute for Applied Social Science
GDP	Gross Domestic Product
GIEK	Norwegian Export Credit Guarantee Agency
IPA	Individual Project Agreement (Between Norad and MPI)
JSC	Joint Stock Company
KfW	German Development Bank (Both loans are in EUR)
l/p.d	Litre per person per day
MC	Mixed Credit
MOA	Ministry of Agriculture
MOC	Ministry of Construction
MOF	Ministry of Finance (KfW's Agreement Partner)
MOH	Ministry of Health
MOU	Memorandum of Understanding (Between Norad and MPI)
MPI	Ministry of Planning and Investment (Norad's Agreement Partner)
NOK	Norwegian kroner (Norad Grant in NOK, but converted to EUR)
NOL	No Objection Letter (from Norad to relevant authority)
Norad	Norwegian Agency for Development Cooperation
O&M	Operation and Maintenance
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
Pe	Person-equivalent (Here: Water consumption 120 l/p.d)
PMU	Project Management Unit
PPC	Provincial People's Committee
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
URENCO	Urban Environment Company (Most have been converted into JSC)
USD	US dollar (9 Projects had USD Contracts)
VDB	Vietnam Development Bank
WASHE	Water, Sanitation and Health Education
WB	World Bank

## Physical Results

After an intervention period stretching 16 years (2003-2019), with events that will be explained later in this report, we see physical results of the Program as shown in the below table.

Figure 1 Program beneficiaries.

Project Location	Province	Total Physical Investment *) (EUR)	New				Potential Maximum Pe Capacity **)	Leakage or Reduced Capacity (%)	Current Effective Pe Capacity Potential	Current Beneficiaries (KPMG Report ***)	Population in area when fully developed
			Effective Old Production Capacity	Production Capacity (This Program)	Total Production Capacity	Unit					
1	2	3	4	5	6	7	8=6/Pe	9	10=8-9	11	12
<b>Water Supply Projects</b>											
Dien Bien Phu*	Dien Bien	4 379 827	8 000	8 000	16 000	cbm/d	133 333	24 %	101 333	80 212	120 312
Hoi An*	Quang Nam	5 836 423	6 000	15 000	21 000	cbm/d	175 000	22 %	136 500	80 420	150 000
Lai Chau*	Lai Chau	4 336 565	4 000	8 000	12 000	cbm/d	100 000	24 %	76 000	47 315	53 000
Song Cong*	Thai Nguyen	5 051 093	5 000	15 000	20 000	cbm/d	166 667	21 %	131 217	42 496	72 000
<b>Waste Water Projects</b>											
Cao Lanh	Dong Thap	16 281 002	-	10 000	10 000	cbm/d	104 167	-	104 167	40 426	70 180
Chau Doc*	An Giang	11 239 122	-	5 000	5 000	cbm/d	52 083	-	52 083	20 175	55 000
Hong Linh*	Ha Tinh	9 320 162	-	7 000	7 000	cbm/d	72 917	-	72 917	14 759	16 000
Quang Tri*	Quang Tri	6 543 271	-	5 000	5 000	cbm/d	52 083	-	52 083	15 791	22 100
Thai Binh	Thai Binh	10 174 652	-	10 000	10 000	cbm/d	104 167	-	104 167	113 000	348 617
Thuy Van	Phu Tho	4 052 387	-	5 000	5 000	cbm/d	52 083	-	52 083	3 500	35 000
<b>Solid Waste Projects</b>											
Soc Trang*	Soc Trang	7 906 461	-	160	160	ton/d	153 000	-	153 000	116 078	369 242
Son La*	Son La	8 218 458	-	80	80	ton/d	120 000	-	120 000	105 000	121 000
<b>Totals</b>		<b>93 339 423</b>					<b>1 285 500</b>		<b>1 155 550</b>	<b>679 172</b>	<b>1 432 451</b>

As shown in column 10, the potential total treatment capacity (water supply and sewage) of the projects corresponds to around 1.155 mill. person-equivalents. As indicated in column 11, the current beneficiaries covered are around 680.000. We cannot tell exactly how many domestic beneficiaries ultimately can be connected without detailed knowledge of the industrial and commercial consumptions. For example, is the industrial consumption in Song Cong 60% of the production. This is a higher figure than anticipated during Norad's appraisal. But it is made possible, and is fully acceptable, due to another new water supply system nearby, that is compensating for the "deficit". We can however conclude, that while the theoretical capacity of the Program corresponds to around 1.2 million domestic beneficiaries, the actual result will be less, due to industrial and commercial consumption. Therefore, in order to serve the total future population in the service areas, as indicated in column 12, new investments are needed for most projects, while some projects can expand their service area within the current capacity.

### Box 1 Explanation to Figure 1.

- In Vietnam, one person-equivalent (Pe) varies between 120-150 l/p.d. In this table, we have assumed 120 l/p.d (recommended by Vietnam) and that 20% of the water is lost before reaching the sewage treatment plants.
- \*) Nine projects had USD contracts – marked with \*. In column 3 they have been converted to EUR with exchange rate base on the date of completion.
- \*) Additional to the total investment of 93.3 mill. EUR, Norad has provided a grant of 208 mill. NOK, of which 44% is used for interest payment and 56% for Cash Contribution. Plus, a capacity-building component of 17 mill. NOK.
- \*\*) Total potential beneficiaries, including industry and commercial consumption (if more industry, less people)
- \*\*\*) Low figures: service areas still being developed, and part of the water is used by industrial and commercial users.
- By "beneficiaries" we understand users with new or improved services.
- Please note that all 12 projects are located in different cities/provinces.
- **Population source: Project Completion Reports. Some figures vary slightly.**

## Investment Summary

The total physical investment of the Program is explained in Figure 1. It is the sum of the disbursed loans from KfW, EUR 76.5 m. (two loans: Batch 1 and Batch 2), including the cost of Fichtner, and local fund contribution from the projects (VAT, design costs, land acquisition, etc.), EUR 16.9 million. Of Norad's grant, ~EUR 22 m<sup>1</sup>., 44% is interest subsidy and 56% Cash Contribution, which is targeted to down-payment of the loans and does not affect investment costs. Norad's interest contribution is thus about 10 million EUR.<sup>2</sup> By adding Norad's investment, including the Capacity Building Program (~2 m. EUR) to the sum in column 3, Figure 1, we arrive at a total Program investment of ~105 million EUR. Figure 1 also tells us that the Program is potentially reaching out to about 1.2 million beneficiaries. The investment is summarized in Box 2.

Box 2 Investment in brief.

### Investment:

- Investment: ~105 million EUR
- Beneficiaries: ~1.2 million Pe
- Investment/Beneficiary: ~90 EUR

### Norad's contribution:

- Total grant: 225 million NOK
- Grant/Beneficiary: ~190 NOK

(Rounded figures; Pe = person equivalent)

## Socio-Economic Results

A cross-cutting objective, in the twelve individual project agreements (IPA) between Norad and Vietnam, is improved life condition for the affected people in the projects' coverage areas. This is often expressed as: "*The overall Goal of the Project is to improve quality of life of residents in <city>, promoting social and economic development and infrastructure in <city> ...*". Some IPAs<sup>3</sup> also include: "*... reduce epidemic diseases related to environmental pollution, ...*". Other IPAs include coverage targets, like: "*supply safe water to xx % of the population by 20xx and ensure adequate supply of water for industrial, economic, cultural and social activities ...*". Some agreements refer to Vietnams national strategies, goals, targets and policies for the water supply and sanitation sectors. One agreement has, as part of the *Overall Goal*, included the development of a "*green, clean and beautiful city*".

In sum, it is fair to conclude that all *Overall Goals* in the project agreements point in the same health-related socio-economic direction: health > education > employment > income. These factors relate to and influence one another: Water-borne diseases prevent children from going to school and adults from going to work > low-grade education, low-grade or no work > no work, no income.<sup>4</sup> Needless to say, reliable and adequate water supply and wastewater treatment are, with no exception, also pre-requisites for sustainable industrial and commercial development. Most projects are quite recently completed and it might seem too early to cast judgement on fulfilments on all the *Overall Goals*. These may better be subject to an evaluation later. This report will however try to see if there are glimpses of trends in positive direction.

<sup>1</sup> The available grant is actually higher, due to historic exchange rates and several years of interest accumulation.

<sup>2</sup> Please note that the exchange rates between VND, EUR, USD and NOK have varied considerably during the period of the Program. Figures presented in this report does not always correspond to the exchange rate on the date of execution. They must therefore be viewed with a certain flexibility.

<sup>3</sup> IPA: Individual Project Agreement, is the main bilateral agreement, for each of the 12 projects, between Norad and Ministry of Planning and Investment (MPI).

<sup>4</sup> This simplified definition will suffice for this report. Socio-economic *status* is of minimal interest, except for the poverty reduction issue, which should be included in an evaluation, if being implemented later.



## Health

All feasibility studies of the twelve projects did include socio-economic information and nine included the prevalence of water-borne diseases. A proper evaluation would be needed in order to process this material in a professional way. This report will only present the prevalence of some selected water-borne diseases, before and after intervention, as reported by the project owners in their completion reports.

As can be seen in Figure 2, all projects did report on some of the potential illnesses linked to inferior water supply and sanitary conditions. Three water supply projects, Hoi An, Lai Chau and Song Cong, report the issue as insignificant in their supply areas. One project, Quang Tri, lacks baseline figures in the feasibility study and did not deliver updated figures. Thuy Van is industrial treatment, with few domestic users. Cao Lanh and Soc Trang did not include baseline information, so their information is from the last two to four years. The reported information is however enough to accept that there may be a positive trend: Three to five years after completion of the constructions, there is a significant reduction in the occurrence, compared to the reporting at time of the feasibility study.

Yes, definitely glimpses of a positive trend, enough to expect that the overall objective of an improved quality of life for the residents is already, and will continue to be, improved. This was also confirmed by the project owners' statements during the closing seminar in Hanoi in April 2019.

Figure 2 Reporting on reduced prevalence of water-borne diseases.

Project	Feasibility Report	Construction Start-Compl.	Dengue/ Malaria	Diarrhea	Typhoid/ Dermatol.	Eye Infection	Respiratory
<b>Water Supply</b>							
Dien Bien Phu	2005	2014-2015		-98 %		-66 %	
Hoi An	2004	2007-2014	Not significant				
Lai Chau	2006	2013-2014	Not significant				
Song Cong	2004	2012-2015	Not significant				
<b>Waste Water</b>							
Cao Lanh 1)	2008	2014-2018	-40 %	-33 %			
Chau Doc	2008	2013-2015	-53 %	-35 %	-96 %		
Hong Linh	2006	2012-2015		-75 %		-78 %	
Quang Tri 2)	2009	2014-2016	Insufficient data				
Thai Binh	2006	2014-2016	-77 %				-69 %
Thuy Van 3)	2007	2014-2016		-94 %	-84 %	-86 %	
<b>Solid Waste</b>							
Soc Trang	2008	2014-2018	-15 %	-27 %	-96 %		
Son La	2005	2012-2014		-4 %		-4 %	

1) Period 2017-19. 2) No base line. 3) Period 2014-17.

### Box 3 Water, sanitation and health.

#### Is water supply and sanitation improving health?

There is no option: All humans need adequate water supply and proper sanitary conditions in order to stay alive and remain healthy.

But good health depends on many factors, additional to clean drinking water, some of them being knowledge and attitudes. It is therefore often difficult to demonstrate a decisive link between improved water supply and sanitation and improved health.

It is however reasonable to assume that the prevalence of typical "water-borne diseases", like e.g. cholera, diarrhea, eye infections and skin rash, may partly be attributed to the available quantity and quality of clean water and sanitary conditions.

## Economics

Clean water and sanitation are in itself not the final solution, but it is one of the most effective catalysts for job creation through improved conditions for industrial and commercial development. Clean water and sanitation will therefore: 1. Improve the peoples' health so that they are able to work, and 2. Provide an enabling environment for industrial and commercial development, and thereby indirectly give the population the potential of working themselves out of poverty.

We do neither have enough baseline information, nor updated reporting, to bring objective information of the projects' impact on employment and commercial/industrial development, as a result of the Mixed Credit Program. We have however some samples and we can make some assumptions.

We can with 100% certainty (if the reported figures are correct, which we have no reason to doubt) state that due to the reduction in the occurrence of diseases shown in figure 2, be it from this Program or not, comparatively more people than before can go to school or to work and participate in the society's social and economic affairs. There is also strong indication that the Program has had significant impact on industrial and commercial developments, and thereby job creation, in the service areas. Three cases may illustrate this, as shown in the boxes on this page.

*Box 5 The case of Thuy Van.*

### Enabling industrial development.

There were 50 factories with no external treatment in the Thuy Van Industrial Zone before the intervention. Pollution stopped further expansions and brought financial burden through environmental-based compensations.

Now, the environment is cleaned up, no more compensations are needed and the number of factories has risen to 88, almost reaching the full capacity of 91 factories. See next page regarding environmental results.

Similar results are reported for all project cities. For cities with previous investment is the result both an improvement, but also a significant extension. This report concludes that, with a high degree of certainty, we may confirm that the Program already has, and will have, a significant positive impact on employment and economic development in general.

*Box 4 The case of Song Cong.*

### Why so "few" beneficiaries?

It came as a surprise that the Song Cong treatment plant, while running at almost full capacity, apparently is serving only ~40% of its population. Reportedly, this is because the operator is channeling ~60% of the water to industrial and commercial use. Water from another treatment plant is compensating for the "deficit", so that all are having a satisfactory supply today. This is a win-win situation for all consumer groups.

During the closing seminar in Hanoi on 8 April 2019, all twelve projects were represented and gave their statements. All praised the impact that the project had had on the developments in their city, both domestically, commercially and environmentally. It must be remembered that some of the project cities had no previous investment of this kind. For them is the change of fundamental significance.

*Box 6 The case of Hoi An.*

### The city and tourism are thriving!

Hoi An is a different kind of project. It is not a poor city like most of the other program towns. However, mixed credit may also be used for industrial and commercial development, if access to commercial financing is limited. Hoi An is a UNESCO World Heritage site, that suffered heavily under inadequate water supply.

Now the city is flourishing, with clean water and probably the best-looking treatment plant in the Program's portfolio.

## Environment

Water supply, wastewater treatment and solid waste collection and treatment are per definition interventions with positive environmental impact potential. Can we see positive environmental impact coming out of the mixed credit program?

During Norad’s appraisal of the twelve projects, the staff saw cities with dirty streets, smelly local environments, flood-prone streets and overgrown canals with black water and garbage floating around. The garbage that was collected ended up on uncontrolled dump sites with inhuman working conditions. The following photos may illustrate the situation and mitigation.

**Before intervention**

**After intervention**

**Son  
La**



**Thai  
Bin**



**Thuy  
Van**



We could go on with similar positive photos for all twelve projects. All reporting from the project owners confirm that the Program has had a very positive environmental impact in all cities.

We can however not leave the environmental issue without mentioning some specific problems facing the two solid waste projects Soc Trang and Son La. A common challenge for both, which is not solved at the time of writing this report, is successful composting and plastic removal/recycling. It turns out that both projects do not have the market potential as was expected during the planning stages. The compost has a strong competitor in the artificial fertilizers, which seem both cheaper and more readily available everywhere. A similar situation is unfortunately also facing the plastic issue. While it is important that Son La and Soc Trang manage to provide as good and market-oriented products as possible, it is also definitively, and probably more so, a serious sector problem in Vietnam today, that need the attention of the central Government. Uncontrolled use of fertilizer and plastic pollution is today a global issue.

A third issue, additional to the fertilizer and plastic challenge, is Soc Trang's and Son La's ability to keep control over their new dump sites and properly treat leachate from these sites. This will require both knowledge, attitude and the means to appropriate action over time. Only time will tell if they succeed. A stronger national sector regulation is also needed. More information can be found in the various project completion reports. We end this chapter on a happy note, with the successful story of Thuy Van, at Viet Tri City in Phu Tho Province.

*Box 7 The happy story of Thuy Van.*

**Successful industrial treatment, lake rehabilitation and improved environment.**

The wastewater produced by the 50 factories in Thuy Van Industrial Park had been partly pre-treated for toxics and heavy metals in the factories, but not collected and treated externally. Wastewater was discharged into a lake, then into some ponds and canals and from here into the Red River, causing unhygienic and serious environmental pollution, affecting the production and life of the population. It also directly affected the water environment in the area of Vinh Phuc Province, Hanoi and lower areas of Red River and Lo River. Lo river and Red River are the water sources for the daily life of Viet Tri city, and is the water supply source of Hanoi and downstream provinces.

During construction, questions were raised as to the quality of the lake that had been receiving the industrial discharges. Thanks to a professional contractor, the Hanoi University of Science and Technology, School of Environmental Science and Technology, was invited to carry out an assessment of the lake. It turned out that the bottom sediments were contaminated with chemicals and heavy metals and was classified as hazardous waste. The study also recommended mitigation methods. The People's Committee of Phu Tho and Norad approved the shift from normal to hazardous waste treatment method. The bottom sludge of the pond was then treated (dredged, dried and burned in a special factory certified by the government).

The lake recuperated reasonably rapid after this intervention. The water in the lake has turned into a natural green color. The aquatic species, such as fish, shrimps and crabs, are back. Birds begin to migrate around the lake and local people have started fishing.

The water from the lake, which flows down-stream, does not anymore negatively affect the life and production of the population as it did during the previous years. Before 2016, Phu Tho Province had to pay compensation for losses of crop production (paddy fields) and livestock (fish) to the farmers of Thuy Van and Thanh Din communes. After 2016, no compensation had to be paid.

The project owner states: "This is a new bright spot in the development of Viet Tri City. It is a project that the Government of Vietnam should repeat in other provinces with similar problems."

(Source: Project owner's report) Regarding improvements in people's health, see Figure 2.





*Mr. Duck: I've had enough - I'm out of here!*

Thuy Van: Left, a glimpse of the lake before rehabilitation. Right: Treated water being discharged in a controlled way, via the lake, into the surrounding water system.

## Gender

Gender **issues** include all aspects and concerns related to women's and men's lives and situation in society, to the way they interrelate, their differences in access to and use of resources, their activities, and how they react to changes, interventions and policies. UNICEF says gender **equality** "*means that women and men, and girls and boys, enjoy the same rights, resources, opportunities and protections. It does not require that girls and boys, or women and men, be the same, or that they be treated exactly alike.*"

The main reason why gender issues are not particularly focused in this Program is that adequate *water supply and sanitation facilities are cross-cutting issues by themselves*. This is because all human activity depends on it. We know that women are the main worker in the household and child care, but also in many external tasks, e.g. sweeping streets and keeping a clean environment. We know that many households in the Program receive these services for the first time, or extended services and better quality, so we have good reason to assume that women and children do greatly benefit from the Program.

We also know that improved water supply and sanitation services make it easier for public health and hygiene campaigns, and also for other development assistance programs, to succeed:

*Box 8 Women in development.*

### **Socio-economic development.**

Vietnam has achieved significant progress in poverty reduction during the first decades of market reform. The share of population living on less than 2 USD/d has been brought down to 13.5% in 2014. Life expectancy was 75 years in 2014.

Vietnam's Gender Inequality Index ranked 60 out of 155 countries in 2014. Women made up 24.3% of parliamentary membership and 73% of the labor force in 2014. Nearly 60% of adult women have reached secondary level of education or higher, compared to about 71% of their male counterparts.

**Source: Bertelsmann Stiftung's Transformation Index (BTI) 2018 Country Report.**

for example, various WASHE<sup>5</sup> programs and the likes of “Water for Women”. In short: The Program opens up for a variety of improvement opportunities related to gender issues, which do not necessarily need to be included in one single program.

## Sustainability

Sustainability is the ability to exist constantly. On the Program’s level, we want the 12 projects to be able to continue fulfilling the overall goals, to satisfy the needs of the households and the commercial activity and to provide good health and prosperity for the people in the service areas – for many years to come. For our purpose, we may describe the sustainability issues as a socio-economic-environmental process, striving to reach a common goal: A better and stable life for the next generation. Therefore, in this report, the sustainability issues will be limited to: funding > knowledge > attitude. You need funds for operation, maintenance and expansion, you need knowledge in operation and management and you need the right attitude to get the job done. If this process succeeds, the projects will last. (URENCO, PPC, O&M, MOC, CB<sup>6</sup>)

*Box 9 A, B, C. The key sustainability process components.*

<b>A Funding</b>	<b>B Knowledge</b>	<b>C Attitude</b>
<p>Two types of O&amp;M funding are being applied in Vietnam: Tariff income and state (province) subsidy. Traditional URENCOs are 100% depending on subsidy, as all tariff income go into the provincial treasury. Joint stock companies may keep the tariff income, but may still need additional subsidy from the province if the tariffs, approved by the PPCs, do not cover the funding needs. The PPCs may keep the tariffs low for socio-economic reasons, subject to subsidy compensations. Therefore, in Vietnam is the tariff alone not a parameter for sustainability, as most projects need, and do actually receive, considerable subsidy funding. A low tariff is therefore not a parameter for a less successful project.</p> <p>See also Box 10.</p>	<p>Sufficient quality knowledge is a prerequisite for successful O&amp;M. The experience in the provinces on modern project handling and O&amp;M was originally limited. As part of the Program, Norad financed 17 million NOK through MOC for a capacity-building project, aiming at the 12 project organizations. This has given the projects a base, on which they can continue to build increasing knowledge. Courses i.a:</p> <ul style="list-style-type: none"> <li>- Tariff policy and road maps</li> <li>- Orientation plans</li> <li>- Standard Op. Procedures</li> <li>- Asset management tools</li> <li>- O&amp;M management tools</li> <li>- Business plans</li> <li>- Enterprise management</li> <li>- Risk management</li> <li>- Software tools</li> <li>- Customer management</li> <li>- Environmental health</li> <li>- English training</li> </ul>	<p>Attitude is actually a cross-cutting issue in itself. Building the right attitude to the work, responsibilities and tasks is considered fundamental for success and future positive impact.</p> <p>It is important for the project owners that they understand that they are first and foremost accountable to their customers.</p> <p>The customers and user groups must learn to understand and accept that health and hygiene do not come automatically, but only in combination with improved water, sanitation and good health and hygiene practices. The right attitude is achieved through a knowledge-based learning process. The Province is here the key initiator.</p>

<sup>5</sup> WASHE: Water, Sanitation, and Health Education.

<sup>6</sup> URENCO: (Public) Urban Environmental Company, to be converted to Joint Stock Co. PPC: Provincial Peoples’ Committee. O&M: Operation and maintenance. MOC: Ministry of Construction. CB: Capacity-building.

*Box 10 Water supply and sanitation tariffs.*

**Tariffs status in the Program**

In Box 9A above, it is argued that tariffs alone have a limited impact on the sustainability of water and sanitation projects in Vietnam. The sanitation sector is country-wide not as developed as the water sector. It will still take some time before it is socially and politically accepted to raise these tariffs to a sustainable level. There are regulations in place, describing how to calculate tariffs, but the PPCs are allowed to keep the tariffs low, for socio-economic reasons, provided the difference is compensated by subsidies to the companies. This is what happens on this Program also, as shown in the enclosed table. The same situation is reported on other programs in Vietnam and is therefore a national issue: Transition from a centralized, 100% “subsidy”, to a decentralized system. It is therefore good reason to expect that the Provinces will provide enough funds for the projects to become financially and physically sustainable.

What we do see as a result from this MC-Program and the CB-Project, is that the Projects are stronger on their way to becoming self-financed than they would have been without the intervention.

Project	Company	Approved tariff?	Covers O&M?	Covers depreciation?	Subsidy needed?
<b>Water Supply</b>					
Dien Bien Phu	JS	Yes	Yes	Yes	No
Hoi An	JS	Yes	Yes	Yes	No
Lai Chau	JS	Yes	Yes	Yes	No
Song Cong	JS	Yes	Yes	Yes	No
<b>Waste Water</b>					
Cao Lanh	JS	Yes	No	No	Yes
Chau Doc	JS	Yes	Yes	No	Yes
Hong Linh	JS	No	No	No	Yes
Quang Tri	JS	No	No	No	Yes
Thai Binh	Lease	Yes	Yes	Yes	No
Thuy Van	JS	Yes	Yes	No	Yes
<b>Solid Waste</b>					
Soc Trang	JS	Yes	No	No	Yes
Son La	JS	Yes	No	No	Yes

JS: Joint Stock Company

## Vietnam, a country in transition

When evaluating sustainability issues at provincial level, it is extremely important to understand the special context prevailing in post “doi moi”<sup>7</sup> Vietnam. If traditional western democratic sustainability parameters are mixed into this equation, the conclusion will be wrong. The developments in Vietnam from 1986 until today are multi-faceted and complex, but for our purpose we may mention the “equitization”<sup>8</sup> policy from 2009. With relevance to this Program, it started with water companies. The wastewater and solid waste companies joined later. It must also be mentioned that the sector is divided between three ministries: MOC (urban), MOA (rural and MOH (health)<sup>9</sup>. It must therefore be appreciated that autonomy at provincial levels is still young and immature, and more so for wastewater and solid waste than water supply. The Province is still heavily involved in the affairs, also of the joint stock companies. What we do know is that the regulation is in place and that we see considerable positive developments year by year. It would be unfair to the companies of this Program if the “success score” is reduced due to reasons so clearly embedded in the national context. Subsidy of utility companies is still an acceptable and successful budget procedure in Vietnam.

<sup>7</sup> «Renovation»: Is the name given to the economic reforms initiated in Vietnam in 1986, with the goal of developing from a “command economy” to a “socialist-oriented market economy”.

<sup>8</sup> A byword for creating financially autonomous utilities out of previous state enterprises (that ultimately would be able to borrow from commercial banks).

<sup>9</sup> MOC: Ministry of Construction; MOA: Ministry of Agriculture; MOH: Ministry of health.

## The Capacity-Building Program

Norad requires international competitive bidding procedures in all mixed credit programs. At an early stage it became clear that this knowledge, and experience with international project management in general, was limited at the provincial levels in Vietnam. Also issues like e.g. tariff policy, business plans, customer accountability and asset management were not well developed. In order to improve the long-term physical and financial sustainability of the forthcoming considerable investment, Norad offered to finance a Capacity-Building Program (CB-Program).

Under the OECD Mixed Credit arrangement, there is room for setting aside 3% of the project cost for education and training. The Agreement Partners decided to put the 3% from all 12 projects into one basket, in order to create a CB-Program which would presumably provide better impact. This way, a budget of 17 million NOK from Norad and 300,000 USD from the Government of Vietnam was secured and an Agreement was established between Norad and the Ministry of Construction (MOC), as the executive agency.

After an international bid process, a joint venture of: BKT Co. Ltd. Korea; Korea Water and Wastewater Association; and Water Construction Consultant, JSC, Vietnam; was selected.

After a Needs Assessment Study, the CB-Program was designed in detail and executed over a period of 3.5 years, July 2012 – December 2015, plus an extension, with the following topics:

- ✓ Tariff Policy and Tariff Road Maps;
- ✓ Orientation Plans;
- ✓ Standard Operating Procedures (SOP);
- ✓ Asset Management Tools;
- ✓ Operation and Management (O&M) tools;
- ✓ Study Tours (Korea and Japan);
- ✓ Business Plans;
- ✓ Enterprise Management;
- ✓ Risk Management;
- ✓ Software Tools;
- ✓ Customer Management;
- ✓ Environmental Health;
- ✓ English Training.

All topics under the CB-Program are in reality cross-cutting issues for long-term sustainability. The CB-Program turned out to be very useful and was well received. It is considered to be a very important input for the success of the overall Mixed Credit Program.



## Summary of Relevance and Sustainability

Relevance is normally a measure of, to which extent a project meets the needs of the beneficiaries it was intended to serve. The underscoring is important: A water supply project which serves only 50 % of a city may initially be considered not very relevant. But if it was planned, designed and built to serve 50 % of the city, it will be considered highly relevant and successful. An evaluator that do not understand the difference, may derive at a wrong conclusion. The best “evaluator” in this sense is the Project Owner, i.e. the operating institution itself. In order to sum up the results related to Relevance, Sustainability, Subsidy and Overall Impression, we have put the following four questions to the twelve Project Owners:

1. How do you rate your project’s RELEVANCE on a scale from 1 to 6, where 6 is best? (The extent to which your project meets the needs of the Owner and Beneficiaries.)
2. How do you rate your project’s SUSTAINABILITY on a scale from 1 to 6, where 6 is best? (The probability of continued long-term benefit.)
3. Do you think that provincial SUBSIDY my influence negatively on the sustainability in Point 2? (On a scale from 1 to 6, where no negative influence is 1 and high negative influence is 6.)
4. OVERALL impression: Considering all factors, how satisfied are you with the project on a scale from 1 to 6, where 6 is best?

We see that the Project Owners themselves express very high satisfaction with the results. It is also interesting to note that there is no difference between the three sub-sectors water supply, wastewater and solid waste. We also note, as described on the previous page, that none of the projects think that the need for subsidy will have a negative impact on the sustainability. On the contrary, one project confirms that the subsidy is improving the sustainability, because it counteracts the negative effect of having a tariff adjusted to the prevailing socio-economic situation in the service areas. We may conclude that a reduced tariff with subsidy compensation may reach the same level of sustainability as a higher tariff without subsidy.

Figure 3 Results of a satisfaction survey.

Project	Question 1 Relevance	Question 2 Sustainability	Question 3 Subsidy	Question 4 Overall
1	2	3	4	5
<b>WS Projects</b>				
Dien Bien Phu	6	6	1	6
Hoi An	6	6	1	6
Lai Chau	6	6	1	6
Song Cong	4	4	2	4
<b>WS Average</b>	<b>5,5</b>	<b>5,5</b>	<b>1,3</b>	<b>5,5</b>
<b>WW Projects</b>				
Cao Lanh	5	5	1	4
Chau Doc	6	6	1	3
Hong Linh	6	5	1	6
Quang Tri	5	6	2	5
Thai Binh	5	6	1	5
Thuy Van	6	6	1	6
<b>WW Average</b>	<b>5,5</b>	<b>5,7</b>	<b>1,2</b>	<b>4,8</b>
<b>SW Projects</b>				
Soc Trang	5	5	1	5
Son La	5	5	1	6
<b>SW Average</b>	<b>5,0</b>	<b>5,0</b>	<b>1,0</b>	<b>5,5</b>
<b>Total Average</b>	<b>5,4</b>	<b>5,5</b>	<b>1,2</b>	<b>5,2</b>

A deeper analysis of the scores below 5 in the table reveals that, while all Project Owners confirm their top score satisfaction for the projects per se, they have, for the overall score, also included issues like time-consuming design changes, construction delays, land acquisition delays, organizational issues (from URENCO to Joint Stock Company) and, in one project (Chau Doc), the need for immediate capacity expansion. This shows that, while the actual end result is deemed excellent, there is still room for improvements of the pre-construction and construction processes and organizational issues. This is also our experience as consultants.

# Time Line and Efficiency

Figure 4 Time line, historic events.



From the signing of the MOU, between Norad and Ministry of Planning and Investment (MPI) in 2003, we may divide the period until 2019 in five distinct phases:

**Phase 1**, efficient period: Norad started appraisal of selected projects and entered into the first individual project agreements (IPA). Bidding processes were initiated and Hoi An started the first project construction in 2007. However, unexpectedly, it turned out very difficult to find a guarantor for the credits after Norway untied its development assistance in 2002.

**Phase 2**, “low efficiency” period: The construction in Hoi An had to stop, while Norad worked very hard to solve the main financing issue. The work on appraisals of new projects and establishing IPAs did however continue with full force and a lot of work was done.

**Phase 3**, efficient period: Norad established contact with KfW in 2010 and entered into an agreement in 2011. KfW signed loan agreements with MOF in 2011 (Batch 1) and 2012 (Batch 2). All construction started from 2012 onwards. In terms of construction work the period from 2007 to 2012 had in reality been inefficient years. Therefore, the projects’ cost estimates had to be updated and two Addenda to this effect were in 2012 added to the MOU from 2003. From then on, until 2017, the Program was very efficient.

**Phase 4**, low efficiency: In 2015, Vietnam introduced a bureaucratic restriction on the use of ODA, affecting all development programs in Vietnam. The problems peaked in 2017-18 with the consequence that the two

last projects in the portfolio, Cao Lanh and Soc Trang were financially delayed, which in turn spilled over to physical delays.

**Phase 5**, efficient period: The ODA issue was solved in December 2018 for Cao Lanh and June 2019 for Soc Trang. The main Defect Liability Periods (guarantee periods) for both projects expired in October 2019. These are the two last projects of the portfolio of 12 in the Program.

## Effectiveness

Can a program with inefficient periods, as described in Figure 4, still be effective? Yes, it can and it is. In hindsight, the ideal solution would have been if Norad and KfW had made contact shortly after signing of the MOU in 2003. The untying of development assistance, that came into effect in 2002, created an unexpected funding vacuum for the mixed credit facility. The “fault” was not on the Vietnamese side. When international bidding procedures were introduced, the Norwegian Export Credit Guarantee Agency (GIEK), could not provide guarantees for non-Norwegian bidders. In particular also because civil works were included as part of the total cost<sup>10</sup>. Norad tried to influence that GIEK’s ability to provide guarantees for development aid projects, when funded by Norway, also should be “untied”, but without success<sup>11</sup>. As it were, the projects that were appraised during the period 2004 to 2009 could not start construction until 2012, leading to the need for updating of the project costs<sup>12</sup>.

However, during period up to 2012, a solid amount of preparatory work was done:

- Fourteen projects were appraised, of which two that never materialized: Sam Son Solid Waste Treatment in Thanh Hoa Province and Hanoi Oncology Hospital did not meet the joint requirements of Norad and KfW;
- Twelve Appropriation Documents were prepared and approved by Norad;
- Twelve Individual Project Agreements were signed between Norad and MPI;
- Twelve international bid packages were prepared by the Projects and checked by Norad;
- A capacity-building program was negotiated and the agreement signed between Norad and MOC.
- Negotiations between Norad and KfW were successfully completed;
- Two loan agreements were signed between KfW and MOF.

It should be appreciated that this in sum was quite a bit of work for a program with a total investment of about 105 million EUR, including 225 million NOK from Norad. Norad was continuously involved with monitoring, checking and no objections at every step on the way. This preparatory work paved the way for full concentration on physical construction from 2012 onwards. The construction period for the 12 projects, from 2012 to 2018, was in its totality very effective. Norad was also heavily involved with scrutiny and no objections during construction.

This report concludes that in its totality, the CB-Program has actually been very effective and that it is quite amazing what can be achieved with a total investment, when fully utilized, of only 90 EUR per beneficiary, and a grant from Norad of only 190 NOK per beneficiary (Box 2).

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<sup>10</sup> GIEK promotes Norwegian exports.

<sup>11</sup> This is still a very good idea, that should be further pursued when discussing future “blended financing” from Norway.

<sup>12</sup> Addendum 1 and 2 in 2012 to the MOU of 2003, and corresponding Addenda to the relevant IPAs.

## Monitoring and corruption mitigation

Norad and KfW, in agreement with MOF and the Project Owners, introduced and implemented a quite comprehensive, and rigid, project monitoring and fund handling system in the Program:

**Separate Agreement (SA)**<sup>13</sup>: The purpose of the “Separate Agreement” (to the loan agreements), which had to be signed by all twelve project owners, was to establish a common understanding of all matters relating to the projects’ implementation and later operation. Issues were i.a. responsibilities, time, costs and how to handle changes. Other issues were how to tender and award contracts; one single contract for each project and international competitive bidding. The SA also included “*KfW Program Minimum Requirements*”, reporting requirements, monitoring requirements, the creation of Project Management Units at project level and the hiring of an international supervision consultant to be on the construction sites at all times.

**KfW Minimum Requirements (annex to the Separate Agreement):** Included

- Qualification criteria for cities;
- Benchmarks during implementation;
  - Before award of contract for works/supplies;
  - Before first disbursement;
  - Before end of implementation;
- Objectives to be achieved at the end of the Project (start of operation).

**Supervision Consultant:** After an international bid process was the German firm **Fichtner Water and Transportation GmbH** hired to monitor and supervise the construction works. Fichtner entered into separate consulting contracts with all project owners, hired international and local staff and was at all times represented on the construction sites.

**General Provision of Norad:** Norad’s general requirements on:

- Ethical standards, fraud and corruption;
- Quality standards and cost efficiency;
- Transfer of knowledge and training;
- Workers’ rights, occupational safety and health;
- Environment and green production;

were embedded in all bid documents and construction contracts.

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<sup>13</sup> Relevant issues were naturally also included in the Individual Project Agreements between Norad and MPI, bid documents and construction contracts.



## Invoicing and disbursement of funds.

The only recipients of funds from the KfW loans (ODA) are the construction contractors and the supervision consultant Fichtner. Vietnam ministries, institutions or persons never receive or see any money from KfW. For Norad's disbursement of grants, see Box 11.

Each of the two loans from KfW is split into 6 tranches, one for each project and with individual reference numbers. Each tranche corresponds to the approved ODA cost budget, between Norad and MPI, for the respective project. The project owner is responsible for paying VAT and any cost above the approved ODA budget. Each project has strict construction and invoicing schedules approved by Norad in writing, by "Letter of No Objection"<sup>14</sup>. When the contractor presents an invoice to his client (the Project Owner) the following happens:

- Fichtner verifies that the works/delivery has been carried out, that it conforms with the Contract, Bills of Quantities, Unit Prices and Specifications, that the quality and quantity is correct, that provisions for Retention Funds are made, etc, and that the figures are correctly calculated;
- The invoice is then sent to the PMU for checking and approval (authorized by the Project Owner);
- The PMU then sends the invoice to the Provincial Treasury (for wastewater and solid waste projects) and to the Vietnam Development Bank (VDB) (water supply projects) for approval (authorized by MOF)<sup>15</sup>;
- The PMU then sends the invoice to MOF Hanoi for approval, signature and forwarding to KfW (original) and Norad (copy).
- Norad confirms that the invoice conforms to the Construction and Invoicing Schedules, that the amount is within the approved ODA budget, and sends No Objection Letter (NOL) to KfW.
- KfW disburses the invoice amount directly to the contractor's account.
- Invoicing from Fichtner follows the similar procedure. Verification of this invoice is done by the PMU.

*Box 11 Norad's disbursement of grant.*

### **Norad's grant disbursement.**

Norad's grant has two purposes: The first priority is interest payment to KfW. The second priority is to use the balance for Cash Contribution to MOF, for part down payment on the loans. The grants are fixed for each project and the amounts are calculated based on the OECD regulations for mixed credits, with a concessionality level of 35%. Two of the poorest provinces, Son La and Lai Chau, were granted 50% concessionality. All grants were approved by Norad several years ago and transferred to designated project accounts in a Norwegian bank, selected through a bid process.

Interests are paid upon request from KfW twice a year, in June and December. Norad's bank is delegated direct payment of the grant's interest component. The loans mature 30 June 2024 (Batch 1) and 30 June 2026 (Batch 2).

The cash contribution component is paid out to a MOF account in Vietnam, upon a payment order from Norad to their Norwegian bank, when a project is confirmed successfully completed and also the loan agreement is confirmed successfully completed.

<sup>14</sup> Norad, as the lead donor, gives 'no objections' also on behalf of KfW. 'No objection' is required for the original plans and any physical or financial deviation from the original plans. All no objections need explanation, justification and recommendation in writing from Fichtner, before Norad's approvals.

<sup>15</sup> Wastewater receive 100 % state grants, solid waste state grant/on-lending 80/20 and water supply 100 % state on-lending via the Vietnam Development Bank (VDB).

## Provincial project monitoring

In Vietnam, the Provincial Peoples' Committee (PPC) is always the executing agency and the recipient of all national government funds. PPC will select the City Peoples' Committee (CPC), or a company, to implement the projects (implementing agency). The Implementing Agency will then appoint the Project Management Unit (PMU), which consist of about 5-7 staff. The PMU has the day-to-day responsibility for the implementation of the project: Bid documents, bid process, contracts, construction and contact with the supervision consultant. As explained in the previous chapter, neither of these agencies see or receive any ODA money. PMU does receive national fund from PPC needed for paying VAT and project funds above the ODA budget. They also receive funds for a.o. project design, document preparation, land acquisition and compensation, electricity supply, not covered by the ODA

## Norad and KfW monitoring

Norad's and KfW's role in the fund disbursement and approval process is explained above. Norad, as the lead donor in the Program, issues No Objection Letters (NOL) also on behalf of KfW. It is a quite detailed and extensive arrangement. NOLs are required for:

- Bid documents
- Bid evaluation documents. The bidders must deliver a copy of their bid also to the Norwegian Embassy in Hanoi at the same time as to the Project Owner. This way, there is always a reference document available, if needed.
- Construction contracts
- During construction: All substantial physical or financial deviations from the plans, or addendum to the contracts. Minor adjustment to works can be decided locally, by use of Variation Orders, agreed between the parties on site, if approved by the Supervision Consultant Fichtner and the Project Owner. Experience has however shown that the Project Owners (and PPC) want Norad to give NOL to most adjustments and changes.
- Disbursement of ODA funds, as explained above.
- Approval of completion reports: One technical/financial report prepared by the supervision Consultant Fichtner on behalf of the Project Owner and one report directly by the Project Owner, with a stronger reference to the requirements of the Individual Project Agreements between Norad and MPI.

Norad and KfW have made one or two joint visits to Vietnam every year, visiting construction sites and MPI, MOF and MOC. A big Completion Workshop was held in Hanoi in April 2019.

To support Norad in this work, Tranor International AS was hired after a bid process and has been following the development in Vietnam during the important last years. Upon request from Norad, a local consultant, Mr. Tran Trong Chinh (former Norwegian embassy employee), was hired by Tranor to strengthen the communication between all parties and stakeholders at national, provincial and project level. Mr. Chinh's work has been very valuable, both for the donor side and the Vietnamese side and is a key factor for the success of the Program.

## Corruption mitigation

It is believed that the very comprehensive project monitoring and funds handling, described above, has been sufficient for mitigating irregularities in this Program. There have been no reports on fraud or corruption during these years. We have been informed on few occasions that staff has had to go, for various reasons. This shows rather that the system works and is not a sign of weakness. It is actually astonishing to have implemented a Program of this magnitude over so many years with hardly any negative reporting.

Norad and KfW can obviously not be present on the construction sites. We have no option but to trust the work of the German supervision consultant Fichtner. We have the best impression of Fichtner. They are professional and have shown patience under partly difficult working environment (periods of late approval of payments). Fichtner has been submitting Monthly Progress Reports on financial and physical progress and problems that may arise. These have been very useful reports for Norad and KfW.

There was one incident in Cao Lanh, as explained in Box 12. However, it was not related to this Program and it was successfully handled after involving all concerned parties.

All 12 projects have been subjected to Vietnamese State Audit, as required by Vietnamese regulation. Up to now, no irregularities have been reported.

We believe that the total sum of all measures described in the chapters above, has contributed to the successful completion of the Program.

*Box 12 The Cao Lanh incident (Dong Thap Province).*

### **Successful resolution.**

During the construction phase in Cao Lanh, we were informed that one company in the construction joint venture had been debarred by the World Bank for 10 years. It had been an incident on another project, not related to this Program. Norad and KfW involved their respective compliance departments on the issue. To stop the project in mid-construction and go for new bidding would constitute a delay of 1-2 years and increasing costs. There was no irregularity in this project and it was a joint venture contract. It was finally, after all parties had been heard, decided to continue with the same contractors but with a stricter monitoring regime, in agreement with the PPC:

1. As part of Dong Thap PPC's strengthened monitoring, PPC will follow closely the performance of the Joint Venture Partners and to the best of their ability verify that:
  - a. All persons from <the company> employed on the project, including freelancers and temporary staff, have not been included in any compliance case;
  - b. The Joint Venture Partners have an active ethical compliance strategy and policy in place for this project, which is being followed up, also towards their business partners involved in the project;
2. Dong Thap PPC will immediately inform Norad in the event of becoming suspicious of criminal offence, such as fraud, corruption or similar activities, by any partner involved in the project;
3. Dong Thap will every six months, in a letter to Norad, inform about their strengthened monitoring activities and confirm that the above points are being closely watched.

*"Dong Thap PPC will organize monthly meetings of Steering Board to monitor the implementation of the project of Dowasen; as well as direct the relevant departments to support Dowasen for controlling and supervising the execution process, the performance of the Joint Venture and persons from the Contractor employed on the project as well, in order to ensure the progress, the quality, and under legal regulations". \*)*

Note: The Project Steering Board, est. 2014, is headed by the Vice Chairman of the Dong Thap PPC. DOWASEN is the Implementing Agency and Operator.

\*) Source: Letter from Dong Thap PPC to Norad, 27 July 2016.

## Consultant's Assessment

This Program Summary Report is closed with the Consultants assessment of why this Program has been successful. We recommend that these issues be carefully studied and applied in later Norad programs and projects. The points below are not listed in priority, but are considered of equal importance.

1. We have never ever scratched the surface only, we have always gone fully in-depth of things.
2. We have at all times respected Vietnam as the owner of the Program. We have studied and understood all relevant Government Decrees and Regulations related to the water and sanitation sectors, including the Vietnamese Procurement Guidelines, and tried to our level best to understand the Vietnamese culture and way of thinking, including the socio-economic context, which is so important for these sectors. We believe that this has been a decisive factor for success.
3. The hiring of a local Program Coordinator, Mr. Tran Trong Chinh, has also been a success. As a previous employee of the Norwegian Embassy, in addition to his other comprehensive experience, Mr. Chinh has been the never-tiring watchdog and activator in the communication between MPI, MOF and MOC at the Central Level and the PPCs, CPCs, Project Owners, PMUs and Fichtner at Provincial and Project Level. Additional to this, Mr. Chinh has also carried out written and oral translation work, arranged all logistics for the joint Norad/KfW missions to Vietnam, including educating the mission participants in the Vietnamese way of life.
4. A strong and good contact and relationship with Norad's Agreement Partner MPI, including also the other Program stakeholders has been very important. Annual meetings and site visits in Vietnam during the project preparation and semiannual visits during project execution have assisted in rapid solutions to problems and challenges.
5. The strong and comprehensive disbursement procedures and Norad's monitoring regime described in this report (page 17 and 18) seems to have been successful (no negative reporting at this stage). One important measure should be mentioned: During the submission of the bids for construction, it was required that one complete bid document should at the same time also be submitted, by the Bidder, to the Norwegian Embassy in Hanoi. This way, we always had a clean document available, if later in doubt about issues of deviation or conflict.
6. The Capacity-Building Program, described on page 12, must be regarded as a prerequisite for the success of a Program of this type and magnitude. The need for capacity-building must not be underestimated in future programs.
7. The issue of tariff subsidy has been thoroughly discussed in this report (pages 11,12). This is because some reports do not seem to have understood and appreciated the



special contexts prevailing in Vietnam, nor the nature of mixed credit financing. As an additional note, we would therefore like to refer to an **“Evaluation of the Norwegian Mixed Credit Programme”, a report prepared by Fafo, Center for international studies in October 2000**. In Chapter 2.1 Assessment of project success, is stated: *“A project is cost recovering if it is able to cover all operational costs, including servicing the (soft) credit with which it was financed, according to the terms agreed (this may also be called post-grant financial viability). Mixed credit projects are normally expected to fall into this category, and, if not, measures should have been taken to guarantee public subsidies from the recipient country to accommodate the cost of operations. This is made clear in the NORAD regulations (NORAD 1998:32) in which the DAC guidelines are cited as follows: “Where a project is not financially self-supporting, special care must be taken to make certain that the subsidies required to maintain operations are ensured and that this represents a priority use of the recipient’s public resources”. .... Projects should not be commercially viable to fall within the Helsinki Guidelines, but should be able to recover their costs and be economically viable. If they do not recover the costs, the recipient country must provide support in the form of operational subsidies for the projects to fall within the guidelines for Norwegian mixed credits.”*

In this report, we strongly support this view, particularly because it is exactly what is also stated in the Vietnamese guidelines, e.g. DECREE On Drainage, Sewerage and Wastewater Treatment No.80/2014/ND-CP, Article 38.2: *“In case the wastewater service price decided by the provincial people’s committee is lower than that calculated taking into account accurate and full costs of drainage, sewerage and wastewater treatment and reasonable profit level, the provincial people’s committee shall compensate from local budget to ensure the legal rights and benefits of the drainage and sewerage entity.”* A similar regulation is in force for water supply projects.

The above supports fully our conclusions in this report regarding tariff subsidy and sustainability, and we repeat that we may conclude that a reduced tariff with subsidy compensation may reach the same level of sustainability as a higher tariff without subsidy.

8. We may initially think that an investment of 105 million EUR, close to one billion NOK, is too much for a Program of this kind. However, when we realize that up to 1.2 million beneficiaries may receive a better life, at an average cost of only 90 EUR per beneficiary – it does seem somewhat reasonable. When we also know that about 80% of the physical investment is a loan from KfW to Vietnam, of which Norad’s grant covers all the interest, it looks even better. The catalytic factor that made this project possible was the intelligent structure of the OECD/DAC regulated mixed credit financing facility, which provides Vietnam with a grant from Norad consisting of interest subsidy and cash contribution. Of the total 225 million NOK, after the CB-Program and interest subsidy are deducted, an amount corresponding to about 16.5 mill EUR, is available as cash

- contribution to Vietnam for part down payment of the loans. This is quite a bit higher than initially expected, due to many years of interest accumulation on the grant.
9. While the strict monitoring regime and general Norad (and KfW) involvement in this Program may seem high, it has definitely been a decisive factor for the Program's success. Without knowing the exact cost figures, since various actors have been involved over the years, we still dare to suggest, considering the total investment of close to one billion NOK, that the monitoring cost may be considered modest. The Program's success is greatly attributed to this involvement and Norad deserves to be commended for realizing these needs and also for the good cooperation at all times with KfW.
  10. One problem should be mentioned here, as it has affected not only Norad's Program, but all donor programs in Vietnam. In 2015 Vietnam introduced the requirement that the annual needs of all ODA-financed programs in Vietnam should be reflected in the country's annual budgets to be approved by the National Assembly. The Provinces have the responsibility to submit their annual ODA needs for inclusion in the national budget process. This has caused stress, misunderstandings and missed deadlines. Most of the Program's delay between 2016 and 2019 is due to the ODA budget problems. Our Program is now fortunately ok, but any potential new program in Vietnam should be aware of this obstacle.
  11. Due to the Phase 2 delays described on page 15, not all, but most of the projects' scope had to be reduced in order to fit into the agreed budgets. In hindsight, this was not a good solution. The population and prices had increased during the period of delay and we should have spent more efforts in increasing the budget frames to accommodate these changes, instead of reducing the scopes. As it turned out, some projects do not quite cover the current service needs. This is a negative lesson learned.
  12. Mixed credit is a very favorable facility. It can be called mixed credit, blended financing, or whatever. The point is, that the combination of loan and grant is an excellent form of financing. It is just, creates accountability on the recipient side, and it is a credit solution viable for countries with limited resources. It should be kept low-level, like this Program in Vietnam. This Program proves that big investments can be successfully handled with a "micro" organization consisting of a limited number of Norad and KfW staff and a couple of on-demand-based external advisors.

**Tranor International AS would like to thank Norad for the assignment and thank Norad, Mr. Tran Trong Chinh and KfW for professional, interesting and good cooperation. We also thank KfW, MPI, MOF, MOC and the PPCs, CPCs, Project Owners and PMUs of all 12 projects, and all other staff we have met over the years, for good cooperation, with best wishes for the future.**

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## Annex 1a: The four water supply projects – basic data.

See Figure 1 for more details on investment costs and beneficiaries.

See Figure 2 for more information on water-borne diseases.

See Box 10 for information on tariff status.

These below boxes are cut from the respective IPA Completion Reports. For more and better details see the reports.

### Song Cong

Parameters	At the time of Feasibility study	Current situation	Situation when area fully developed	Final overall % increase/decrease
Designed treatment capacity *	15,000 m <sup>3</sup> /day	20,000 m <sup>3</sup> /day	20,000 m <sup>3</sup> /day	33%
Treatment capacity utilization	5,000 m <sup>3</sup> /day	9,276 m <sup>3</sup> /day	20,000 m <sup>3</sup> /day	300%
Billed water quantity	3,500 m <sup>3</sup> /day	7,195 m <sup>3</sup> /day	16,600 m <sup>3</sup> /day	374.2%
Number of employees	36	74	74	105.5%
Women employees	16	32	32	100%
Population in the service area	57,000	64,000	72,000	26.3%
Serviced population	8,000	38,624	50,000	525%
Number of customers	1,985	9,923	20,000	907.5%
Non revenue water (leakage)	40%	21.27%	20%	-50%
Waterborne diseases: Diarrhea	Not significant	N/A	N/A	
Waterborne diseases: Eye infections	Not significant	N/A	N/A	

\*Design capacity of the old WTP was 15,000 m<sup>3</sup>/day, but the actual treatment capacity was around 5000 m<sup>3</sup>/day only.

### Hoi An

Parameters	At the time of Feasibility study	Current situation	Situation when area fully developed	Final overall % increase/decrease
Designed treatment capacity *	6,000 m <sup>3</sup> /day	21,000 m <sup>3</sup> /day	21,000 m <sup>3</sup> /day	250%
Treatment capacity utilization	6,000 m <sup>3</sup> /day	15,500 m <sup>3</sup> /day	21,000 m <sup>3</sup> /day	250%
Billed water quantity	4,080 m <sup>3</sup> /day	12,090 m <sup>3</sup> /day	18,260 m <sup>3</sup> /day	347%
Number of employees	35	48	60	71%
Women employees	16	25	35	118%
Population in the service area	121,000	134,450	150,000	24%
Serviced population	22,000	57,000	80,000	264%
Number of customers	5,600	15,200	17,000	203%
Non-revenue water (leakage)	32%	22%	18%	-43%
Waterborne diseases: Diarrhea	Not significant	Not significant	Not significant	Not significant
Waterborne diseases: Eye infections	Not significant	Not significant	Not significant	Not significant

### Lai Chau

Parameters	At the time of Feasibility study	Current situation	Situation when area fully developed	% Overall increase/decrease
Treatment capacity	4,000 m <sup>3</sup> /day	8000+4000 <sup>†</sup> m <sup>3</sup> /day	12,000 m <sup>3</sup> /d	200 %
Number of employees	40	80	120	200 %
Service area population	32,000	42,000	53,000	66 %
Women employees	26	42	50	92 %
Number of customers	3,466	10,500	12,000	246 %
NRW	35%	24%	20 %	-43%
Waterborne diseases : Diarrhea	Not significant	N/A		
Waterborne diseases : Eye infections	Not significant	N/A		

(<sup>†</sup>)4000m<sup>3</sup>/day: capacity of pressure filters funded by the owner before the project.

### Dien Bien Phu

Indicators	At the time of F/S	Current situation	Situation when the project is fully developed	Overall Increase/decrease (%)
(1)	(2)	(3)	(4)	(5) = $\frac{(3) - (2)}{(2)} \times 100$
Designed water treatment capacity	8,000 m <sup>3</sup> /day (*)	8,000 + 8,000 m <sup>3</sup> /day	16,000 m <sup>3</sup> /day	+100 %
Treatment capacity utilisation	8,000 m <sup>3</sup> /day	16,000 m <sup>3</sup> /day		+100%
Billed water quantity	4,448 m <sup>3</sup> /day	12,160 m <sup>3</sup> /day		+173%
Number of employees	135	226	226	+67 %
Number of female employees	26	57	57	+119 %
Population in the project location	64,370	120,312	120,312	+87%
Population provided with treated water	29,324	85,500	85,500	+192 %
Number of households	7,331	18,500	18,500	+152 %
Rate of non revenue water	43,83%	24%	24%	-45 %
Water related disease: Diarrhea (**), (***)	457	10		-98%
Water related disease: Pinkeye (**), (***)	3,548	1,224		-66%

(\*) 8000 m<sup>3</sup>/day is the capacity of the pressure filter tank system previously invested by the company.

(\*\*) The data is taken from water related diseases Preventive Medicine Center of Dien Bien Province .

(\*\*\*) compared between the current data and the previous data

## Annex 1b: The six waste water projects – basic data.

### Chau Doc

Parameters	At the time of Feasibility Study	Current situation	Situation when area fully developed	Final overall % increase/decrease
Treatment capacity		4.800 m <sup>3</sup> /day	5,000 m <sup>3</sup> /day	No previous project to compare with
Number of staff		16	16	No previous project to compare with
Number of female employee		1	1	No previous project to compare with
Population in the service area	36.000	54,500	55,000	151%
Serviced population		20,000	21,000	No previous project to compare with
Number of serviced household		4.035	4.200	No previous project to compare with
Waterborne disease: Dengue	182	86		-53%
Diarrhoea	345	223		-35%
Typhoid	167	6		-96%

### Quang Tri

Parameters	At the time of Feasibility study	Current situation	Situation when area fully developed	% Overall increase/decrease
Designed Treatment capacity	5.000 m <sup>3</sup> /day	3.500 m <sup>3</sup> /day	5.000 m <sup>3</sup> /day	-30%
Treatment capacity utilisation	3.500 m <sup>3</sup> /day	1.500 m <sup>3</sup> /day	5.000 m <sup>3</sup> /day	-57,14%
Number of employees	0	10 persons	26 persons	0
Women employees	0	2 persons	6 persons	0
Service area population	14.000 persons	15.791 persons	22.100 persons	12,79%
Number of customers (households)	0	3.715 HHs	5.196 HHs	0
Water borne diseases: Diarrhea	Inappreciable	13	N/A	
Water borne diseases: Eye infections	Inappreciable	367	N/A	

### Thai Binh

Parameters	At the time of F/S	Current situation (phase 1)	Situation when area fully developed	Overall Increase/Decrease (%)
Design capacity	0 m <sup>3</sup> /day	10.000 m <sup>3</sup> /day	20.000 m <sup>3</sup> /day	
Real operating capacity	0 m <sup>3</sup> /day	9.500 m <sup>3</sup> /day	20.000 m <sup>3</sup> /day	
Number of employees	0	24	40	
Number of women employees	0	1	N/A	
Population of the service area	85.644	268.167	348.617	213 %
Number of customers	58.751	268.167	348.617	356 %
Waterborne diseases: Dengue	562	131		-77 %
Waterborne diseases: Respiratory infections	5.043	1.576		-69 %

### Cao Lanh

Parameters	At the time of feasibility study	Now (phase 1)	Future Service area fully developed	Increased / Decreased rate
Design capacity	0	10,000 m <sup>3</sup> /day	20,000 m <sup>3</sup> /day	
Actual operation capacity	0	3,000 m <sup>3</sup> /day	20,000 m <sup>3</sup> /day	
Number of employees	0	8	21	
Number of women employees	0	4	N/A	
Population of the service area	40,426	39,230	70,180	74%
The population benefits from the project	35,200	34,955	65,750	87%

### Thuy Van

Parameters	At the time of F/S	Current situation	The situation when the area fully developed	The rate of increase / decrease
Design capacity	5,000m <sup>3</sup> /day	5,000m <sup>3</sup> /day	5,000m <sup>3</sup> /day	
Treated capacity	0	3,250m <sup>3</sup> /day	5,000m <sup>3</sup> /day	
Number of employees	0	11 persons	11 persons	
Women employees	0	03 persons	03 persons	
Number of businesses using services from plant	50 factories (no external treatment)	88 factories	91factories	
Population affected by untreated wastewater	997 households (Average 4 persons/1 household)	0	0	
Area of agricultural land affected by untreated wastewater	437.710 m <sup>2</sup>	0	0	

### Hong Linh

	Feasibility Study Time	Current situation	Situation when area fully developed	Final overall % increase/decrease
Capacity of water treatment system	0	5,000 m <sup>3</sup> /day	7,000 m <sup>3</sup> /day	
Number of operator	0	8	10	
Number of female operator	0	0	0	
Population of project area	12,299	14,759	16,000	30%
Number of customers	800	5,500	7,700	862%
Diarrhoea	176	89	43	- 75%
Trachoma	184	92	39	-78%



## Annex 1c: The two solid waste projects – basic data.

Parameters	At the time of Feasibility study	Current situation	Situation when area fully developed	% Overall increase/decrease
Project title	Investment in construction of solid waste treatment area project in Son La town, Son La province	Urban waste treatment enterprise in Son La city, Son La province	Urban waste treatment enterprise in Son La city, Son La province	
Administration area (Controlling building, dining room, etc.)	0	01	01	-
Treatment capacity	0	70 tons	80 tons	-
Digital scale station				
Guard house	0	01	01	-
Receiving and Pre-separation house	0	01	01	-
Fermentation house	0	01	01	-
Maturation house	0	01	01	-
Fine classification house	0	01	01	-
Sanitary landfill cell	0	06	06	-
Bio-tank	0	02	02	-
Rainfall storage tank	0	01	01	-
Leachate treatment station	0	01	01	-
Number of employees	0	32 persons	55 persons	-
Women employees	0	5 persons	-	-
Service area population	0	105.000 persons	121.000 persons	-
Number of customers (households)	0	26.250 HHs	30.000 HHs	-
Waterborne diseases: Diarrhea	1.523 persons/year	1.463 persons/year	-	-4
Waterborne diseases: Eye infections	1.423 persons/year	1.368 persons/year	-	-4

Son La

Parameters	At the time of preparation FS	Current situation	Situation when the area fully developed	Increased/Decreased rate
Design capacity	160 tons/day	160 tons/day	160 tons/day	
Treatment capacity	0	122 tons/day	160 tons/day	
Number of employees	0	51	60	
Female		24	32	
Population in service area (person)	137,899	138,087	369,242	167.7%
Population to be collected and treated domestic waste (person)	111,756	116,078	134,890	20.7%
Households	24,242	25,184	30,408	25.4%
Some indicators of diseases caused by waste and environment (*):				
+ dengue fever	1,614 cases	1,370 cases		
+ malaria	09 cases	0 case		
+ typhoid fever	28 cases	01 case		
+ diarrhea	6,710 cases	4,891 cases		

(\*) Source: from Soc Trang Preventive Medicine Center

Soc Trang