STUDY OF RURAL WATER SUPPLY SERVICE DELIVERY MODELS IN VIETNAM

January 2010

LIST OF ABBREVIATIONS

CEMA	Committee for Ethnic Minority Affairs
CERWAS	Centre for Rural Water Supply and Sanitation
CPC	Commune People's Committee
DARD	Department of Agriculture and Rural Development
DEMA	Department of Ethnic Minority Affairs
DoET	Department of Education and Training
DoF	Department of Finance
DoH	Department of Health
DoLISA	Department of Labour, Invalids and Social Affairs
DPC	District People's Committee
DPI	Department of Planning and Investment
GoV	Government of Vietnam
IEC	Information, Education, Communication
MARD	Ministry of Agriculture and Rural Development
MoET	Ministry of Education and Training
MoF	Ministry of Finance
MoH	Ministry of Health
MPI	Ministry of Planning and Investment
MoLISA	Ministry of Labour, Invalids and Social Affairs
M&E	Monitoring and Evaluation
MTEF	Medium Term Expenditure Framework
NGO	Non Government Organisation
NTP	National Target Programme
O&M	Operation and Maintenance
PC	People Committee
PPC	Provincial People Committee
RWSS	Rural Water Supply and Sanitation
SAV	State Auditor of Vietnam
SEDP	Socio-Economic Development Plan
SO	Standing Office
SPS	Sector Programme Support
TA	Technical Assistance
ToR	Terms of Reference
ToT	Training of Trainers
TPBS	Targeted Programme Budget Support
UNICEF	United Nations Children Fund
VND	Vietnamese Dong
WSS	Water Supply and Sanitation

Contents

One USD = 19,000 VND

Executive Summary

This report sets out a comprehensive description of the current service delivery models in rural water supply presently applied in Vietnam and examines their effectiveness. The report is part of a multi-country review of the sector which aims to examine the ways different countries organise rural water supply services. It identifies lessons learnt and best practices that can be shared with other countries participating in the review to help them develop the sector in a practical and sustainable way. It will also help shape SNV's work in RWSS by identifying the strengths and weaknesses of the current service delivery models.

The report focuses on, (a) the context at national and provincial levels including institutional arrangements, the policy and legal framework, the coverage of water supply, the planning cycle and M&E system, (b) water supply models, different financial arrangements, access to credit, donor and INGO support and sustainability, (c) problem analysis and solutions developed by the government, and (d) strengths and constraints in the water service delivery models.

The report is primarily a desk study. An information needs assessment was carried out and additional information was sourced from many organizations, projects and experts to respond to information gaps. The experiences and perspectives of a wide a range of stakeholders assessed and included in the analysis.

Results from the research included the following:

- In 2008, 26% of the total population had access to tap water including 67% urban people and 10% rural people; and 64% of the total population had access to clean water including 31% urban people and 77% rural people.
- The planned target for NTPII water supply coverage of 7.4 million people from 2006 to 2010 was revised to 3.2 million in 2008. The main reason was a significant increase in constructions costs and the leveraging effect of donor funds in NTP II was lower than expected[1].
- Loans from the Vietnam Bank for Social Policy (VBSP) are the main source of finance for household level sanitation and water supply. The VBSP emphasized that its lending performance would benefit from improved poverty targeting and IEC.
- Water supply service delivery models can be divided into two types: (a) small scale works based at the household level such as wells, water tanks and toilets and (b) piped water supply facilities. Institutional models include cooperatives, cooperative groups, self-provision, private enterprise, commune and district People's Committees and pCERWASS.

[1] Final Aide Memoire Vietnam Rural Drinking Water and Sanitation Joint Annual Review of the National Target Program II. 6-22 July, 2009

- For rural households in Vietnam the single most popular water supply model is still the traditional hand dug well: nationwide 39% - 44% of the rural population still rely upon wide diameter hand dug wells. Drilled wells are the second most common water supply model in rural Vietnam with an estimated 22 % of rural households. Less than 10% of the rural population nation-wide is serviced by piped water supply systems. 12% of households nationwide use unprotected surface water for drinking and food preparation purposes.
- O&M of water supply schemes is improving in most provinces. In most schemes sufficient revenue is recovered to meet operational costs but there is no provision for depreciation or for the periodic replacement of major facilities.
- An M&E Indicator Set was piloted, revised and agreed by government in 2008. A detailed M&E manual was prepared and NCERWASS, with assistance of local consultants, provided initial TOT for relevant provincial level officials during early 2009. Recurrent budget has been allocated in 2009 to enable provinces to complete M&E training of district and commune staff.
- The 2009 water quality regulations issued by the MOH are more appropriate and it is encouraging to note that the water quality indicators are included in the official monitoring and evaluation system.
- Located in one of the five storm-prone areas of the Asia Pacific region, Vietnam is one of the most vulnerable countries to natural disaster, which significantly and regularly affects rural water supply. The poor are the most vulnerable to natural disasters, which causes severe damage, including loss of clean water supply and other infrastructure, shelter and livelihoods. These phenomena cause epidemics, polluted water, land and resource degradation, and the interruption of social, health, and education services.
- Decentralization as the means to bring resources closer to the community has been promoted in many pilot provinces. Resources for water and sanitation facilities have been delegated in some districts. However, the monitoring and follow up on how implementation is carried out at district and commune level has not been addressed appropriately.
- Measures to curb corruption and corrupt practices have focused on improving public financial management, procurement and auditing[2]. Equitable access was considered a priority in RWSS programmes but mechanisms to ensure this access were lacking.
- The quality of construction of piped water schemes was generally good. Areas where improvements are required included the materials used for house connections and their quality of construction.
- Affordable technology for poor households is a key solution to increase the coverage of water supply and sanitation. There is a need to define suitable but affordable technology with a flexible investment mechanism for the poor.

[2] Synthesis Report on Audit Result of NTP on RWSS in 2008.

The government implements NTP RWSS[3] to increase coverage and improve the economic development and health of people living in rural communities including marginalized groups such as the poor and ethnic minorities. However, the programme characteristically uses a general 'one size fits all' approach to deliver access to services and state resources for people, in different regions, and facing diverse situations and problems. Little attention has been paid to the fact that locally people are already dealing with their daily realities in a certain way. They have experiences and they have capacities.

The present delivery approach has often resulted in marginalized groups such as the poor and ethnic minorities becoming passive 'targets' of benefits. Ironically, dependency has resulted from the large amounts of support provided by the Government. The problem is not the Government support itself, but rather, the ways in which the Government has given this support has promoted dependency, low self-esteem and passivity especially in marginalized groups, rather than promoting empowerment, social capital and capacity in the villages. The poverty rate among ethnic minorities reduced from 86% to only 52% in comparison with the national poverty rate which reduced from 58% to 16% between 1998 and 2006[4].

To effectively carry out the NTP RWSS a new approach or paradigm is needed. Mechanisms and institutional arrangements at community level (village and commune) need to be developed that embrace traditional institutions and leadership in villages, especially ethnic minority villages, to better reflect their voice and needs in government RWSS planning and implementation. The programme needs to build on the strengths of villages, enhance their rights and ownership over RWSS development through promoting the voices of the people and the diversity of voices, cooperate and develop local informal and formal organizations, reframe relations between commune and village, inter-village and intra-village, as well as facilitate better understanding and compromise in the relationship between local authorities and villagers, especially ethnic minority groups.

[3] Other national Programmes such as P 135 II and P 134 also have some activities to increase RWSS coverage.

[4] *Country Social Analysis: Ethnicity and Development in Vietnam.* (2009). Hanoi: World Bank.

1. Introduction

The objective of this study is to present a comprehensive description of the present service delivery models in rural water supply in Vietnam. The study outlines the policy and legal framework, describes different rural water supply models and financial arrangements, examines sustainability and functionality and identifies strengths and weaknesses in the rural water supply system.

The study is part of an international review to describe how different countries organize rural water supply services. The description of service delivery models of rural water supply will help identify the present status, lessons learnt and best practices (principles) for effective rural water supply. The results of the review will also help to shape SNV's work in this field.

The study draws on an extensive range of studies, reports and statistics from sources including the Government of Vietnam (GoV), international organizations, donors, INGOs and VN NGOs. However, there were information gaps. Vietnam is a developing country and for some issues the information was not available or not accessible. For example, detailed information about equitable access to water supply was not available. In response, issues that impact on equitable access are examined.

This report has five sections an introduction, the second section outlines the context for rural water supply in Vietnam, the third section presents the institutional models for water supply, the water supply types, financial arrangements and sustainability in relation to O&M, the fourth section provides a problem analysis and identifies resolutions, and the final section explains the strengths and constraints in water service delivery models.

2. Context

2.1 Legal and Policy Framework

The most important document guiding the development of water supply and sanitation in Vietnam is the August 2000 National Strategy for Rural Clean Water Supply and Sanitation Strategy (NSRWSS). The specific development objectives of the Strategy are:

- Improved health through reduced water and sanitation related diseases by improving water supply, latrines and promote hygienic practices of people
- Improved living conditions through better access to water and sanitation, narrowing down the gap between urban and rural areas
- Reduce to the lowest level untreated human and livestock excreta which cause environmental pollution and reduce organic pollution of water resources.

The underlying principle of the NSRWSS is sustainability rather than speed of implementation. IEC activities have been recognized as a vital element of NSRWSS and give particular emphasis to promoting construction of hygienic latrines and their proper use as well as on making people fully aware of the relationship between sanitation facilities, water supply and health. The NSRWSS is underpinned by the principles of allocating decision-making and management at the lowest appropriate level, and emphasizing the participation of women in management.

Rural households and communities are expected to take the lead responsibility for rural infrastructure development to ensure sustainability. Government agencies play a facilitating role and ensure adherence to national regulations and standards. The overall approach to be taken is underlain by the principle of demand responsiveness, with households and communities making decisions about what type of service they want and are willing to pay for through a process of informed choice. As a general principle, users are expected to pay for all construction and operating costs of water and sanitation systems.

The National Target Programme on Rural Water Supply and Sanitation Phase II (NTP II) is the main policy for RWSS sector development. NTP II objectives to be achieved by the end of 2010 are:

Water supply

- 85% of the rural population use hygienic water, among whom 50% use clean water that meets MOH Standard 09/2005/QD-BYT issued on 11/3/2005 with 60 litres/capita/day.[5]

Environment sanitation

- 70% of rural households have hygienic latrines and
- 70% of rural households have hygienic livestock pens

Public facilities

- All rural primary schools, kindergartens, nurseries, clinics and commune people's committees have access to clean water and hygienic latrines and
- Minimize environment pollution in trade villages, especially in food processing villages.

The NTPII reflects the need for a greater focus on sanitation and hygiene, the need for better targeting of subsidies for the poor, greater emphasis on sustainability, improved operation and maintenance and further decentralisation of implementation. The expected outcome is that some 7.4 million people will be served with water and will have had the opportunity to improve hygiene practices. Some 10,000 school and institutional latrines will have been built and some 1.3 million households will have hygienic latrines.

[5] This is even more ambitious than the goal outlined in the SEDP, which is 75% of the rural population will have access to clean water in 2010 (up from an estimated 62% in 2005).

The projected NTPII budget is VND 22,600,000 million, comprising about 40% for water supply; 21% for sanitation; 30% for livestock waste treatment; and 9% for IEC, management and monitoring. The State budget is projected to account for 14% of expenditure; local government about 10%; community contributions about 36%; preferential loans about 25%; and donor support about 15%.

DANIDA, AusAID, and the Netherlands committed to support the National Target Programme for Rural Water Supply and Sanitation Phase II in the form of targeted programme budget support (TPBS-NTP II) from 2006 to 2010. This programme of support began with a pilot phase of two years, providing budget support to the water and sanitation sector in nine provinces using GoV systems. The programme was expanded to 31 provinces in 2009 and all provinces in 2010. The immediate objectives of TPBS-NTP II are the improved performance and effectiveness of the NTP and increased coverage of water supply, sanitation facilities and hygiene promotion activities amongst the poor. NTP II activities focus on households and schools, providing the latter with improved latrines and hygiene promotion resources.

The TPBS support has been innovative and cooperation between the three TPBS donors, government agencies has in general been good. DFID has formally notified MARD of its intention to join the NTPII and has allocated up to £17 million (UK sterling) for 2010 to 2013. The ADB has approved a RWSS project in six provinces in the central part of Vietnam and has indicated it has no plans in the foreseeable future for using the NTP structure for lending. In contrast, the World Bank is considering using the NTP structure for future lending to Vietnam's water and sanitation sector.

In addition to NTP II, the GoV has two national programmes to promote RWSS service delivery for ethnic minority households and communities: P 135 II and P 134. Both programmes are administered at national level by the Committee for Ethnic Minorities' Affairs (CEMA). Objectives of P 135 II are (1) improve production knowledge and accelerate a shift toward higher value-added commodities (2) provision of essential commune infrastructure (3) strengthen community capacity in planning, budgeting, monitoring and evaluation (4) improve access to essential social services. Specific goals include: 70% of households will achieve an average income per capita at $ 210/ year by 2010, 80% of households will have access to clean water, 80% of households have electricity; 90% of primary pupils and 75% of secondary pupils will attend school. A key principle in the programme is the commune ownership of investments[6].

The GoV has allocated US$805m towards P 135 II, with development partners pledging an additional US$330 million during this stage of the programme. WB will provide a loan of 150m and IFAD 11 m. Grants from others include Irish Aid/ Ireland USD 40m,

[6] Midterm Review of NTP-PR and Program 135-II, June 2009.

AusAID/ Australia 36m, DFID/UK 32 m, Finland 21m and SIDA/Sweden 15 m. Donor support aims to expand the coverage of the programme by including more communes and villages as well as provide additional resources to those already participating in the programme. The alignment of donors to GoV's own programme coupled with a strong commitment to coordination amongst the participating donors demonstrates a good example of how the Hanoi Core Statement on Aid Effectiveness can work effectively in practice. Currently, 1779 communes and 2566 villages in 47 provinces in all parts of the country are covered by P135-2.

For P135 II, selection of communes and villages is based on Decision 393 issued on 29 August 2005. Decision 393 lays out a multidimensional framework that includes quantitative and qualitative socio-economic, livelihood and infrastructure measures to identify communes/villages across the three zones.

Criteria for Disadvantaged Villages

- More than 70% poor households.
- More than 25% households live in temporary houses.
- More than 10% follow shifting cultivation.
- More than 50% lack drinking water & access to power.
- More than 20% lack production land.
- More than 50% rain fed cultivation & no agriculture & forestry extension services.
- Inadequate classrooms or temporary construction.
- Unavailability of radio system from commune to villages & village cultural house.

Criteria for Zone 3 Communes

- At least a third of the villages are disadvantaged villages.
- More than 55% poor households.
- Do not have 6/10 basic infrastructure.
- 3/4 social factors:
    - Universal higher primary education not complete
    - No village health station in 50% of villages
    - 50% of cadre not trained.
    - 50% of households don't benefit from mass media.
- Market oriented farming is absent.
- Geographically located in ethnic mountainous area, remote, border area and island.

P134 provides assistance in housing, land and rural water supply and sanitation for ethnic minority households and communities. The programme provides 5 to 6 million VND/household for housing, 300,000 VND/household or 0.5 tons of cement to assist

ethnic households' access clean water and sanitation and a land policy that distributes residential and production land. The target group for P 134 is ethnic minority households that are poor according to the Ministry of Labour, Invalids and Social Affairs (MoLISA) poverty line[7]. Ethnic minority households are eligible for P 134 support under the following conditions.

- Reside in areas where water supply schemes already exist but do not have reliable water supply and water tanks cannot be built
- Reside in areas without flowing water sources and underground water and rain water sources must be exploited but water tanks and wells cannot be built or dug
- Water resources are available but households not yet have the conditions to invest in the development of water supply.

2.2 Planning Cycle

National Level

Leaders and staff at the Standing Office of the National Target Programme on Rural Water Supply and Sanitation Phase II (SO), Ministry of Health (MoH), Ministry of Education and Training (MoET) and provinces are committed to carry out the planning process for NTP II.

In June/ July each year, the SO sends an official guideline to all provinces indicating NTP II targets and objectives for the following year in accordance with instructions and targets issued by the Ministry of Planning and Investments (MPI). Each province then submits a plan to the SO indicating the total amount that required for RWSS development. A list of investment projects was outlined in the draft plan. For IEC and other software activities, provinces proposed a lump sum but did not provide details of planned activities. The SO consolidates the final plans and budgets and submits to Ministry of Agriculture and Rural Development (MARD) leadership[8].

MARD collaborates with MPI and Ministry of Finance (MoF) to plan the total budget funding for NTP II each year. Based on this budget, the SO developed final budget allocations for each province. The SO negotiates with provinces to adjust plans and budgets. The annual budget and plan NTP II is submitted to the National Assembly for approval.

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[7] According to the Ministry of Labour, Invalids and Social Affairs' recent proposal, the new poverty standard includes those living in rural areas who earn VND350,000 (US$19) or less a month, or those living in urban areas who earn VND450,000 ($25) or less a month. The existing poverty line, which was created in 2005, is VND200,000 per person per month in the countryside and VND260,000 for those living in urban areas.

[8] Annual Technical Supervision, Joint Donor Support to the RWSS NTP II, May 2008.

The SO, MoH and MoET do not regularly receive the information and data needed for effective strategic planning. The result is that planning by the three ministries will continue to be top-down. Many provincial departments are not submitting reports that are required as part of their mandate.
In 2008, the SO developed an action plan for 2008 as well as an implementation plan. The new planning format for the 2009 plan was drafted. The new format was a significant improvement. The SO prepared a reporting format and sent it to the provinces[9].

It is noted that the SO, MoH and MoET started carrying out activities in 2008 to ensure gender main-streaming in all relevant activities and support for awareness raising for HIV/AIDS mainstreaming to relevant sector stakeholders. However, the provincial level had not received information about this issues or guidelines on integration into the planning process.

Provincial Level
Provincial planning for RWSS uses the annual Socio-Economic Development Plan (SEDP) process. In June, the MPI issues specific targets to each province. The Department of Planning and Investment (DPI) conducts a workshop to present the targets, indicators and budget to provincial departments and agencies and district leaders. The District People's Committee (DPC) conducts a workshop to present targets and overall budget to commune leaders.

Village leaders carry out grassroots democracy and other participatory tools to help select community priorities including RWSS. These priorities are submitted to the Commune People's Committee (CPC), which aggregates priorities into the commune SEDP. The commune SEDP is submitted to district level which consolidates the different commune plans into a district SEDP. This SEDP is submitted to DPI, Department of Finance (DoF), Department of Agriculture and Rural Development (DARD), provincial Centre for Environmental Rural Water Supply and Sanitation (pCERWASS), Department of Health (DoH) and Department of Education and Training (DoET) and other departments. In October, these departments use the RWSS data and information in the district SEDP to prepare the relevant sections in their sectoral plans. For RWSS, pCERWASS prepares the annual plan and submits to DARD, which submits to DPI. DPI organises a meeting with DARD, pCERWASS, DoF, DoH and DoET to discuss the priorities in the RWSS annual plan and revise the investment strategy, if necessary. The DPI can influence the final annual plan by focusing more on cost/benefit and increasing coverage rather than different technical options that may cost more or provide less coverage or limit the targeting of remote areas where access would cost more. The final RWSS plan is submitted to the PPC and then the provincial People's Council for final approval.

[9] Decision 3531 MARD on Guidance on the Implementation of NTP II's 2009 Plan.

2.3 Monitoring System

National Level Monitoring System

There are two main systems of monitoring rural water supply and sanitation coverage in Vietnam. Firstly, The Vietnam Household Living Standards Survey (VHLSS) provides the most comprehensive view of the current status of water supply and sanitation coverage. This nationwide survey has a comparative advantage in that the process of surveying is more or less centrally managed and follows uniform and quality assured systems of data collection and reporting. The Vietnam Household Living Standards Survey is one of the main tools for monitoring progress towards the targets set out in the NTP II and national SEDP. It is well resourced and conducted every two years by the General Statistics Office (GSO). Sample sizes ranged from 72 in Kon Tum to 300 in Ho Chi Minh City, and most provinces had over a hundred respondents. In 2008, a Governance Module was added to the survey, which included more than 9,000 observations on citizen satisfaction with government service delivery including water supply, participation in policy making, access to information, and other issues. The basic features of the survey are as follows[10]:

- The questionnaires were administered through face-to-face interviewing, and quality control was supervised by GSO. As respondents are mandated by law to participate, the response rate for the VHLSS is extremely high.
- The VHLSS is not a simple random sample of respondents, but rather a sample of households within the sites that were chosen for each province.

Two other national surveys provide statistics on rural water supply. The Vietnam National Health Survey was conducted in 2002 and not has been repeated. The National Census was conducted every ten years including 1999 and 2009.

Secondly, the NCERWASS compiled records of water supply and sanitation annual coverage change based on reports from the pCERWASS. The origin of the NCERWASS coverage estimates is not well documented and thought to vary between provinces. Some provinces did not provide regular reports on coverage. However, in provinces where the pCERWASS has been very diligent on water supply and sanitation coverage monitoring during implementation of the NTP II, the annually reported coverage and investment figures provide a useful basis for assessing coverage change over time and progress towards targets. The commune health station and village health workers have regularly monitored and reported on water supply and sanitation coverage in Vietnam but this system has been neglected.

[10] GSO website: www.gso.gov.vn

NTP II Monitoring[11]

In July, 2007 MARD approved a set of 14 indicators with 8 indicators at the sector level and 6 indicators at the programme level. The implementation of the M&E system provides the three implementing line ministries with reliable information and data for strategic planning. However, this will take time. Capacity development is needed at central and provincial level and below to effectively carry out and maintain the system. A detailed M&E manual was prepared and recurrent budget has been allocated in 2009 to enable provinces to complete M&E training of district and commune staff.

Data collection is expected to commence and be progressively completed in 2010 with the objective of covering all rural villages to establish an accurate baseline for the sector. This will be a major logistical and challenging task for many provinces[12]. However, a number of provinces have already commenced or completed data collection.

Capacity in DARD, DoET, DoH and pCERWASS to implement the M&E system varies between provinces. Similarly, within provinces, implementation in some areas is likely to be more difficult, for example, because of access and literacy issues in remote/mountainous areas and ethnic communities. All provinces should make provision for some data verification studies focused on difficult areas.

Table 1. Sector Level Indicators

Area	Sector level Indicators (national, provincial, district, commune)
Water supply	1. Proportion of rural population having access to hygienic water (%)
	2. Proportion of rural population having access to clean water satisfying TC 09 (%).
Environmental sanitation	3. Proportion of schools having hygienic water and latrine, of which proportion of schools having clean water satisfying TC 09 (%).
	4. Proportion of commune health centers having hygienic water and latrine, of which proportion of commune health centers having clean water satisfying TC 09 (%)
	5. Proportion of public works (Market, cultural house, CPC office) having hygienic water and latrine, of which proportion of public works having clean water satisfying TC 09 (%)
	6. Proportion of HH having hygienic latrine (%)
	7. Proportion of livestock farming HH having hygienic farms

[11] Harmonisation of Water and Environmental Sanitation Terms and Indicators, UNICEF and NCERWASS, 2008.

[12] For subsequent years a more affordable survey methodology could be applied.

Area	Sector level Indicators (national, provincial, district, commune)
	(%)
	8. Proportion of trade village having wastewater and waste treatment system (%)

Source: SO in MARD

Table 2: Programme Level Indicators

Area	Program level Indicators
Financial progress	9. Proportion of budget implemented compared to budget planned (%), total expenditure of RWSS programs and projects.
Physical progress	10. Number of people served by newly constructed or upgraded facilities per year
	11. Number of newly constructed latrines per year
Investment efficiency	12. Average investment per capital on piped schemes (VND/p)
Sustainability and service efficiency	13. Proportion of water supply schemes operating sustainably (%)
	14. Proportion of piped water supply systems operating under recognized management models (%)

Source: SO in MARD

2.4 Coverage for rural water supply

The planned target for NTPII water supply coverage of 7.4 million people was revised to 3.2 million in 2008. The main reason was a significant increase in constructions costs and the leveraging effect of donor funds has been lower than expected[13].

However, it is not possible to determine the actual progress in water supply coverage as the SO does not collect information on the number of new households connected per year. Given the limitation in data availability it is difficult to accurately estimate the increased coverage from piped water schemes[14]. Even less information is available on

[13] Final Aide Memoire Vietnam Rural Drinking Water and Sanitation Joint Annual Review of the National Target Program II. 6-22 July, 2009.

[14] The SO's annual report for 2008 states that nationally "2,000 piped schemes and thousands of scattered water facilities were put into use, which are capable of providing coverage for 2.7 million people." More detailed information provided to the Mission by the SO based on data from 47 out of 63 provinces indicates that the number of piped schemes constructed in 2008 is likely to have been closer to 1,300. The 47 provinces providing data reported a total of 1,100 schemes. Extrapolating the data by using a regional average for the provinces that provided data gives a total of 1,306.

point water sources. Rollout of the M&E system should eventually provide more accurate coverage data.

Hygiene Standards for Clean Water were defined by the Ministry Of Health in Decision No. 09/2005/QD-BYT dated 11/3/2005[15]. The MoH has also issued the Regulation on Drinking Water Quality QCVN 01: 2009/BYT and Decision No 04/2009/TT-BYT dated June 17, 2009.

Table 3. Definitions Used to Prepare Nationwide Water Supply Coverage Maps

Clean Water Supply	Improved Water Source
Tap water Drilled wells Rainwater Mountain spring with filters Constructed hand dug wells > 7 m from pollutant source Filter / chemical treated water from unprotected sources	Tap water Drilled wells Rainwater Mountain spring with filters All constructed hand dug wells

Source: MoH

Table 4: Water Supply Coverage from the VHLSS

2002		Tap water	Clean water	Others	Total
	Urban	53.99	38.08	7.93	100
	Rural	5.88	67.58	26.54	100
	Total	17.53	60.44	22.04	100
2004	Urban	56.43	37.05	6.52	100
	Rural	6.16	75.36	18.48	100
	Total	19.48	65.21	15.31	100
2006	Urban	62.02	34.82	3.16	100
	Rural	8.44	76.14	15.42	100
	Total	23.17	64.78	12.05	100
2008	Urban	66.65	31.00	2.35	100
	Rural	10.62	77.17	12.21	100
	Total	26.29	64.26	9.45	100

Source: Author's calculation from VHLSS

[15] See Annex One for details about the hygiene standards.

2.5 Institutional Structure

National level

The Inter-Ministerial Programme Steering Committee was established and operational regulations issued in 2007. In 2007, the Committee met twice and organised three inter-ministerial assessment teams to visit eight provinces in North, Central and South Vietnam. The SO of the NTP II was established in MARD and prepared operational regulations. Inter-Ministerial Circular 93 clearly outlines the role and responsibilities of MARD, MoH and MoET for the planning and implementation of NTP II. In addition, the NCERWASS provides technical support to central and provincial level.

MARD is responsible for coordinating relevant ministries and People's Committees for implementation of the NSRWSS. Under MARD is also the NCERWASS to which MARD has delegated the responsibility for RWSS-related technical issues and project preparation. MARD implements it programs by working through departments at the provincial level (DARD) and service divisions at the district level (ARDS).

The Ministry of Education and Training (MoET) is responsible for the provision of clean water supply and sanitation according to national standards and the distribution of IEC materials in schools.

The Ministry of Health (MOH) manages drinking water quality and is

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[16] Water Supply and Sanitation Strategy, the World Bank, 2006.
[17] Water Supply and Sanitation Strategy, the World Bank, 2006.
[18] The Water Sector Review study indicated that from 35 surveyed provinces in Vietnam, only 15 provinces had achieved a rate of user contribution (on piped water supply systems) greater than 20 % of the total investment cost. Furthermore 10 out of the 35 provinces surveyed had not managed to leverage even a 10 % contribution from users to the construction of piped water supply systems.

[19] Water, Sanitation and Hygiene (WASH) Strategy 2010-2012, SNV Vietnam, August 2009, p.2.
[20] LCAT – siphon filter and rope pump
[21] Functionality Of Water Systems for Changing Communities, Chiranjibi Tiwari and Bimal Tandukar, 2009 p.1.
[22] NCERWASS prepared this report in response to Instruction No.105/2006/CT-BNN dated 16 November 2006 of Minister of MARD on the strengthening of management & operation of rural piped water supply schemes.
[23] NCERWASS estimated that there were over 7,000 piped systems nation-wide.
[24] *Country Social Analysis: Ethnicity and Development in Vietnam.* (2009). Hanoi: World Bank.
[25] Final Aide Memoire Vietnam Rural Drinking Water and Sanitation Joint Annual Review of the National Target Program II. 6-22 July, 2009
[26] Synthesis Report on Audit Result of NTP on RWSS in 2008.
[27] Synthesis Report on Audit Result of NTP on RWSS in 2009, SAV, p. 27.
[28] *Ibid.* P. 4.
[29] Standing Office of the NTP RWSS, Guideline on Pro-Poor Targeting for NTP II, Hanoi, 2009.

responsible for setting and monitoring water quality standards. The MOH works through local level healthcare organizations to promote good hygiene and develop and disseminate standards for drinking water and hygienic latrines. The MOH develops regulations on the use of human excreta as fertilizer. The NSRWSS states that the MOH will hold the main responsibility for developing public awareness on hygiene and health.

The Ministry of Natural Resources and Environment (MONRE) is responsible for the State management of water resources. It develops laws, ordinances, decrees and other legal documents to support implementation of the State Management Functions within the Law on Water Resources.

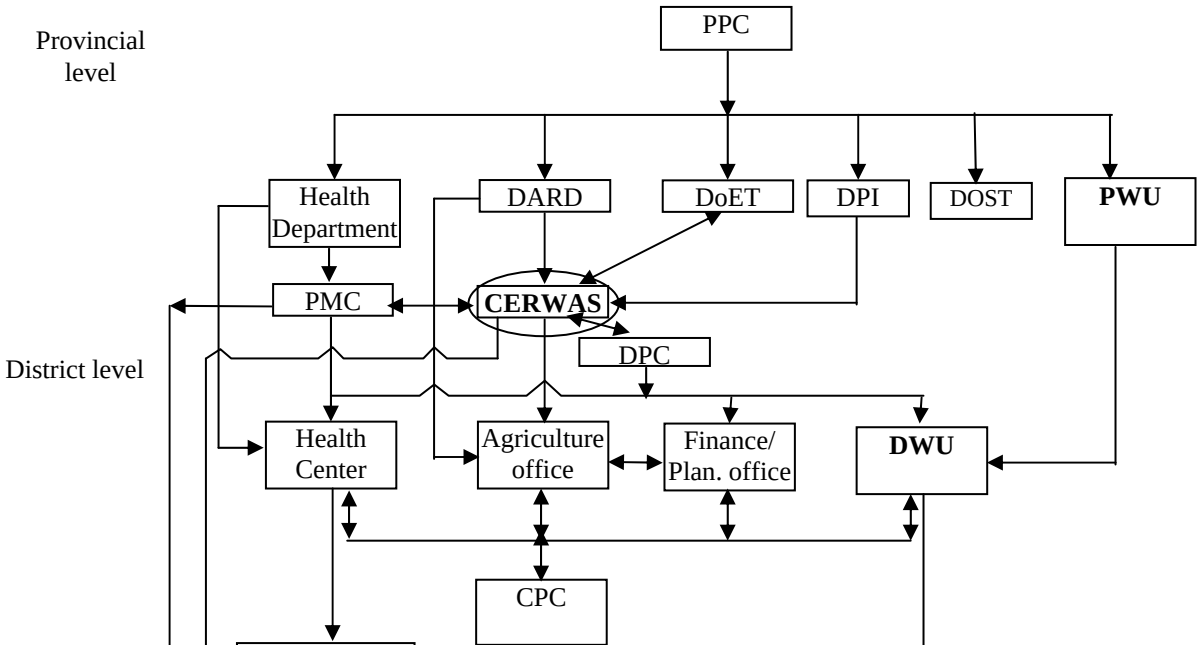
The Ministry of Finance (MOF) is responsible for developing water resource taxes and fee policies. The MOF is also responsible for administering funds that have been allocated to government projects.

The Ministry of Planning and Investment (MPI) is responsible for coordinating government budget for RWSS and for donor-assisted projects. MPI implements its policies and programs working through provincial level departments (DPI).

Provincial Level

People's Committees at the various administrative levels are the main governmental agency involved in RWSS decision-making. The PPC establishes a Provincial Steering Committee for NTP II with members from relevant departments. DARD is the Standing Office of the Steering Committee and cooperates with DOET and DoH for the implementation of the programme. PCERWASS provides technical support for implementing agencies and carries out water supply activities. The DPC also establishes a Steering Committee for the NTP II with relevant members.

Figure One: Provincial Institutional Organization



Commune
level

⟶: Direct management
⟷: Cooperation, inter-relationship

2.6 Decentralisation

During the last decade in Vietnam, economic growth with poverty reduction has become central in law and policy-making in Vietnam. To improve the impact of policy, Vietnam initiated a decentralisation process. Decentralisation improves accountability by linking revenue to expenditure. While there is no specific law on decentralisation, the process has been focused on seven main areas:

- Budget management
- Provincial Investment Planning and Regional Planning
- Grassroots Democracy
- Management of natural resources, land and public assets
- Management of public services
- Management of state-owned enterprises
- Personnel and civil servant management

Reforms in these areas create the conditions for strong economic growth in the provinces while also including the priorities of the community in decision-making. With more efficient investments, returns are improved. Increased transparency and accountability improve the confidence of local investors in local markets. Reforming provincial planning processes results in investments

that make the most use of available resources for the greatest benefit to the community, especially the poor.

For NTP II, the PPC has the responsibility to guide the implementation of decentralisation according to the conditions in the province. Some PPC have taken the initiative and been more innovative than others and decentralised investment ownership to lower levels, especially to district level. This is especially the case for simple technology. However, several critical issues have emerged, which include the capacity of leaders and civil servants to manage and operate the investments, the selection of investments is sometimes not in accordance with the NTP II, and there is a lack of monitoring by provincial level.

3. Institutional Models, Types of Water Supply Models, Financial Arrangements and Sustainability

3.1 Institutional Models

Water supply service delivery models can be divided into two types: (a) small scale works based at the household level such as wells, water tanks and toilets and (b) piped water supply facilities. The household funded and built facilities are carried out without the involvement of local management bodies. In many rural areas, the limited information available indicates huge levels of private investments in RWSS. The investment and management pattern for piped water supply systems is shown in the table below.

Table 5: Investment and Management Models for Piped Water Schemes

	Facility Owner	Management and operation unit	Tendency
Water supply cooperatives	Water supply cooperatives	Water supply cooperatives	Increasing
Cooperation Group	Cooperation Group	Cooperation Group	Increasing
Private enterprises	Private enterprises	Private enterprises	Slightly Increasing
District/commune people's committees	Commune PC	Management and operation unit	Increasing

		Town water supply stations	
pCERWASS	pCERWASS	pCERWASS	Unclear
	Commune PC/village	Management and Operation unit	Unclear
State-owned enterprises	State-owned enterprises	State-owned enterprises	District towns

Source: Updated from National Sector Review, 2005.

The provincial PC makes the decision on ownership for small towns and commune water supply projects. The project owner is usually pWSC, pCERWASS, District PC or the CPC. Local agriculture cooperatives or private organizations may become the owners mainly in communes. For larger projects, project owners must obtain a water license. Private investors have participated in construction of a number of commune projects in areas with good economic prospects, high demand for clean water, and scarce water resources by investing sums of between VND 300 million to 1 billion.

Small towns in Vietnam comprise a) small towns (population between 4,000-30,000), which represent category 5 urban areas and b) large communes (3,000 country-wide of minimum population of 2,000). The population residing in small towns and large communes amounts to 15 million (about 22% of total population)[16]. Small towns fall under the mandate or jurisdiction of MoC, as do water supply services in all larger urban areas. Communes fall under MARD, in which the SO is the lead agency and NCERWASS is the lead in technical provision.

The pCERWASS are authorised by the PPC to act as the managers, coordinators and implementers of projects within the scope of the NTP. In some provinces, the DPC establishes the District Project Management Units to implement projects and directly contract service and construction companies. The CPC are members of the project management units. In provinces with ODA projects, pCERWASS or the district or commune PC could be responsible for implementation of the project, under the support and monitoring of the common Project Management Unit (PMU).

In the past pCERWASS has been the most active government agency in the

provision of rural water supplies. They have played the role not only of the owner/promoter of the rural schemes, but also the operator. However, this model has problems as the emphasis has been on asset creation rather than on asset operation and maintenance. As a result many schemes have been built which are either not supported by many in the community, or have fallen into disrepair.

Cooperative groups managing RWSS investment projects are more evident in South Vietnam. The model was developed with the technical assistance of pCERWASS in response to local demand. The cooperative groups self-manage the water supply systems, including service rates and contributions for maintenance, repairs or expansion of the works. The system appears to have a high level of sustainability. In some communes, the agricultural cooperative also functions to provide water and electricity supply. Commune scale cooperative groups can mobilise funds from different sources including group members and the state budget.

According to Decree 52/1999/ND-CP, the steps for investment preparation are very time-consuming and costly. This is not suitable for RWSS projects where all water supply works are of small scale and decentralized. Some are less than 1 million VND and, in general, 50%-60% of the construction cost is contributed by villagers. Additionally, small-scale works tended to be grouped together into one contract to increase the financial incentive for bidders in the contract process. This impacts on the quality of the construction, the timeframe and increases the contributions required by users. A more flexible set of procedures to encourage these more localized management models should be developed and authorized by the GoV.

Self-Provision: Self-provision exists in rural areas both as a sole source of drinking water and a less expensive alternative to piped water consumption in order to decrease the total cost of supply to the household. Traditionally, rural households collect water from ponds, canals and other uncovered open wells in community locations or near homes. Other households collect rainwater. The self-provision could also come from community-installed hand pumps. The quality of water suffers excessive pollution in some areas or is questionable.

Ownership of new facilities: Following the legislative lack of clarity and the mix of investment source for rural water supply systems, asset ownership issues among private investors, government and community can become very complicated. This is an acute issue since rural consumers typically provide 60% of the initial capital costs to build the systems. Despite this significant investment, the institutional arrangements leave the consumer outside the

system. Still, the international experience has shown that only when users become real owners and managers of the facilities can sustainability be achieved. Generally, the issue of ownership is still not resolved in Vietnam. The private companies cannot use land as collateral when borrowing from a bank and can only informally rent land for their manufacturing and storage purposes. The new Land Law that came into effect in August 2004 did not change the basic premise of all citizens collectively owning the land but did introduce formal regulations for the real estate market.

3.2 Types of Water Supply Models[17]

Hand Dug Wells: For rural households in Vietnam the single most popular water supply model is still the traditional hand dug well: nationwide 39% - 44% of the rural population still rely upon wide diameter hand dug wells. There are significant differences between regions in the proportion of hand dug wells that are improved hand dug wells with a brick masonry construction versus the unimproved and unprotected fully earthen hand dug wells. The South Central Coast and North Central Coast have the highest rates of constructed well coverage nationwide: about 70% of households use a constructed well as their primary drinking water source. In contrast 54% of households in the Central Highlands still use traditional earthen hand dug wells. Hand dug wells are more commonly used by lower income families.

In the most populous regions, the Mekong and Red River Delta regions, hand dug wells are not widely used as a source of water for drinking and cooking purposes. Hand dug wells in the Mekong River Delta are not popular because across much of the region the groundwater is of very poor quality, suffering from various problems linked to acid sulphate and salinised soils. In addition, such wells will be flooded for part of the year, in which case it would be necessary to use surface water anyway. The Red River Delta has comparatively good quality and availability of shallow groundwater resources but less than one quarter of the population of use hand dug wells as their primary drinking water source. Instead rural households put their trust in rainwater and / or drilled well water as the primary source of water for drinking and cooking purposes.

Drilled Wells are the second most common water supply model in rural Vietnam. An estimated 22 % of rural households now use drilled wells as their primary source of drinking water. Nationwide the adoption of drilled wells has been commensurate with a decline in the use of hand dug wells and unprotected surface water sources. Household investment in drilled well technologies has been occurring mostly in the low lying delta and coastal regions and most of the users of water from drilled wells are better off families.

Piped Water Supply: Less than 10% of the rural population nation-wide is serviced by piped water supply systems. This figure includes access to both private household taps and public tap stands. The Mekong River Delta region has achieved the most significant developments in the provision of piped water supply to rural communities and some 8 to 12% of the rural population of the Mekong River Delta is now thought to be connected to piped water supply. The comparatively high rate of rural piped water supply coverage in the Mekong Delta region has not been evenly distributed.

River Water, Ponds & Lakes: only 12% of households nationwide use unprotected surface water for drinking and food preparation purposes. The regional disparities on the use of unprotected surface water sources are dramatic, with an estimated 42 – 47% of the rural population in the Mekong River Delta using such sources daily. Nationwide the rate of use of unprotected surface water sources is highest in the Mekong Delta region.

Rain Water Collection & Storage: rainfall potentially represents a high quality and safe source of domestic water largely free of environmental pollution if the right facilities are available for its collection and storage. In Vietnam, a comparatively small number of people, currently estimated to be 11 – 19% of the population, report using rainwater as their primary drinking water source. The use of rainwater as a source of drinking water is most common in the Red River Delta, Mekong Delta and North Central Coast regions and nation-wide more than 20% of the households that use rainwater as their primary drinking water source report drinking water supply scarcity annually.

Buying Water: at present less than one per cent of the rural population of Vietnam report buying water. This does not include households that pay for water from piped water supply systems. The system is operated in accordance with user pays principles and for this service local people are reportedly spending 5,000 - 18,000 VND per cubic metre.

Water Treatment & Disinfection: the pattern that is emerging is that many households in Vietnam already have year round access to cheap water supply models such as hand dug well, shallow drilled well and surface water bodies. Such water supply models are particularly common among low income households and may be the only water source that many poor households can afford. These water sources are prone to biological contamination and chemical pollution. Given that many poor households cannot yet afford to pay for external sources of 'clean' or 'safe' water it may be more appropriate to promote simple and effective household level water treatment and storage practice that remove contaminant and ensure the hygienic state of water for

human consumption. A key for the future will be to make sure the full range of technology choices is available to local communities.

3.3 Financial Arrangements

There are a range of sources of finance available to individuals and institutions seeking to make investments in RWSS in Vietnam. These sources include both public and private funds, and funds from both formal and informal channels. This section gives an overview of the major financial sources identified based on the following classification:

1. Rural Water Users Self Investment & Contributions.
    a. Self Investment in household improvements.
    b. Contributions to Community Wide RWSS improvements.
2. Government of Vietnam.
    a. Grant Programmes like RWSS-NTP and Programme 135.
    b. International Bank Funded Loan Projects.
    c. Social Policy Bank managed RWSS Credit Facility.
    d. Development Assistance Fund.
3. International donor and NGO funded projects.
4. Private Sector Investment.
5. Commercial Lending Institutions.

Self Investment in Household RWSS Improvements: Household self investment in RWSS has been the real driver for the significant progress towards clean water supply targets in Vietnam. Most of the investment from users was spent on individual private household level structures such as water wells, rainwater tanks, latrines and various structures for the hygienic management of animal waste. In comparison user contributions to multi household water supply systems implemented with GoV and Donor support accounted for a small proportion of the total finance mobilized from rural water users.

Contributions to Community Wide RWSS improvements: In mountainous areas and for relatively small systems in coastal areas the user contribution is in the order of 20% compared with 60% user contribution for larger schemes in the lowland delta and coastal environment.

Included here is additional information on the particular management model for rural piped water supply systems that is gaining greatest favour in Vietnam at the moment, which has the maximum level of community ownership and community user contributions – namely **Cooperative Groups**.

A significant constraint to greater user contributions especially on multiple household piped water supply systems is that in Vietnam under the Civil Code Water User Groups and Cooperative Groups have restricted legal status and can only access on limited terms to credit and favourable loans. In many provinces they are not encouraged to be the investment owner, which thereby diminishes community ownership and willingness to invest. Despite difficulties in accessing finance through the GoV financial and lending institutions more than 200 water user groups have successfully implemented and operated piped water supplies in several provinces, for example Tien Giang. However in most cases the Water User Groups did not need to seek loans and relied on community reserves and generous relatives (Salter, 2003).

Without proper legal status Cooperative Group model will be difficult to replicate widely as not all communities have sufficient capital to finance the schemes without loans.

Government of Vietnam Sources: The sector financing strategy set out in the NSRWSS 2020 is based on a combination of grants and loans. The main vehicle for GoV funding to the RWSS sector since 1999 has been the RWSS-NTP. Second only to the RWSS NTP was P 135. During implementation of the NTP II the bulk of government finance has been directed at piped water supply schemes rather than individual household level water supply and sanitation improvements. Only by 2004 did the GoV set up and pilot a credit facility with favorable loan conditions for poor households to self invest in RWSS improvements.

Government Funded Grant Programmes: The NSRWSS 2020 identifies a number of key target areas for preferential financial treatment from the GoV including (a) the poor, vulnerable and social policy households, (b) piped water supply systems, and (c) public institutions like schools, health centers, markets etc.

There are many indications that the majority of finance directed into the RWSS sector through the RWSS-NTP and P 135 has been directed at piped water supply projects. On piped water supply projects supported through the RWSS-NTP, the pCERWASS had in the majority of cases not leveraged user contributions to the full extent possible. What the analysis[18] has shown is that in many cases GoV investment in piped water supply systems has not been

particularly effective in terms of 'socialization' of the RWSS sector as it has failed to mobilize the resources of the society. In effect the GoV funded grant programme for RWSS is not effectively leveraging local contributions for sanitation whilst at the same time it is potentially crowding out possible user contributions for piped water supply.

International Bank Funded Loan Projects: the various World Bank and Asian Development Bank loan funded projects, which include activities on rural water supply, tend to follow a model of rural development financing centered around the financing of community development funds. There is relatively high degree of decision making at district and commune level about the use of such funds and generally these projects have an underlying goal of enacting the Decree on Grassroots Democracy. Specified rates of financial assistance available through these particular projects are limited at this stage and it is difficult to evaluate to what extent these projects effectively leverage local resources and willingness to pay. These projects represent significant government funds concentrated in a relatively small target area with a comparatively high degree of autonomy on community decision making. The real potential to leverage greater funds from the bank projects depends upon the active involvement of water supply and sanitation promoters, especially NGOs, who can more effectively engage with communities and local governments that are the target of these projects.

Inefficient allocation and use of funds through the GoV funded grant programmes, and donor projects, remains a concern for many individuals and agencies involved in the RWSS sector. At present the local systems and processes for project planning, design, construction and follow up remain antiquated, and with so many steps involved they are particularly vulnerable to waste and leakage of the available financial resources. In consultation with various bilateral projects and INGO's, and basing upon past reports and reviews of the sector, the review team learnt that the problems include individuals personally benefiting, waste from inappropriate designs, costs being siphoned off for other purposes, subcontracting out of construction and/or design but still collecting fees, and official stamps given by correct authorities for a price.

Social Policy Bank managed RWSS Credit Facility: One of the single most significant developments in the RWSS sector during the implementation of the NSRWSS 2020 has been the national RWSS credit scheme with favorable loan conditions. The credit scheme is being implemented through the Social Policy Bank in cooperation with the SO. Prime Minister's Decision No. 62/2004/QD-TTg on Credit for Implementation of the NSRWSS is based on the Decree No. 78/2002/ND-CP regarding credit for poor people and other social target

groups and pursuant to the Decree No. 106/2004/ND-CP on Government Credit for Investment & Development. The purpose of Decision No. 62/2004/QD-TTg is to make available credit for projects in support of the NSRWSS, including projects for construction or renovation of clean water supply systems or rural sanitation systems such as latrine, latrine with biogas, animal farms, waste and waste water treatment from trade villages. For enterprises wishing to invest in construction or upgrading of rural water supply and sanitation projects, loans should be taken from the Development Assistance Fund with interest supports after investment or credit assurance according to the Decree No. 106/2004/ND-CP.

Eligible beneficiaries must be (a) legal inhabitants of rural areas (b) without a clean water source and sanitation structure that meets national standards, and (c) a member of an official Credit & Savings Group and presenting in the proposed list for loan of the group (certified by the commune People's Committee). The loans will be available through the Social Policy Bank with a maximum loan for each RWSS structure of 4 million VND per household. Very importantly under this scheme the loan owner does not have to have any kind of guarantee/collateral except to be a member of the credit and savings group. During the pilot phase of implementation the Bank for Social Policy has used a loan period maximum of 60 months with the extension period of no more than 6 months. The interest rate is pursuant to the decisions of the PM but for the pilot phase was set at 0.5%.

In terms of the loan procedure the Social Policy Bank entrusts the Women's Union to establish and operate Saving & Credit Groups in line with Decision No. 783/QD-HDQT dated 29/7/2003. In terms of the loan application procedure:

- Households belonging to Credit & Savings group submit a proposal including cost estimate for RWSS facility.
- The Credit & Savings group meets with the socio political organization to select household and then submit to commune People's Committee for approval.
- The Social Policy Bank review, give approval to final list and then work with the Saving & Credit Groups to sign the credit contracts with selected households.
- An approved Loan Announcement is sent to the CPC, different socio political organizations, Saving & Credit Groups and the households.

Development Assistance Fund (DAF): The Development Assistance Fund (DAF) is now the main vehicle for policy lending in Vietnam. DAF's main

functions are to mobilize medium and long term funds and receive and manage the capital resources of the state that are allocated in the form of development investment credit.

The DAF institution is under the supervision of the Ministry of Finance (MOF), which restricts its discretion to support projects, by reducing the number of eligible sectors and emphasizing socio-economic returns as a guiding principle. The regulatory framework also spells out conditions for DAF support and introduces risk mitigating mechanisms such as the mandatory co-funding of projects and the reliance on interest rate subsidies for commercial loans.

Private Sector Investment: Two other important management models for community water supply systems in Vietnam are private enterprises and cooperatives. Both **Private Enterprises** and **Cooperatives** are legal entities established in accordance with the Corporate Law meaning that they are expected to pay corporate tax at a rate of 32%. Legal economic entities establishing increased presence in the RWSS sector as primary investors include Joint Stock Companies, Limited Liability Companies, and public utilities. For small water supply systems and / or for water supply systems that are largely financed by users this rate of tax is unreasonable of cooperatives and potentially financially unsustainable and unattractive for private enterprises. In provinces it has been found that for a private enterprise to make piped water supply economically viable the scheme size really needs to be no less than 1,500 households. Some private investors raise capital from users, but provide a reduced water tariff until such time as the user 'investment' is repaid.

Commercial Lending Institutions: Complicated loan application procedures through banks discourage people from applying for loans and for very poor households there are issues around collateral that make it difficult or impossible to take loans. Another major problem with the commercial banks is that for the preferred model for community managed water supply, following Cooperative Group model set up under the Civil Code, the operators cannot easily obtain bank loans because ownership is not clear and they are not considered legal entities. Any future attempt to direct finance through the existing banking system would still require external support to promote RWSS and the mechanism itself as the banks themselves will and probably cannot take this upon themselves.

3.4 Access to Credit

Three quarters of households use credit in one form or another. Many

organizations are involved in supporting the micro-credit sector including the following:

- The main providers VBARD and VBSP
- Saving-and-loan schemes run by several communes and district governments
- Mass organizations such as Women's Union, Farmer's Union, Youth Union
- International NGOs support micro-finance accounting for over 5% of all micro-credits
- Informal sector - moneylenders, rotational savings and credit associations, and lending between friends - contributing about 50% of the total micro-credit market.

Rural Water Supply Affordability

Surveys of time and money spent on obtaining drinking water in Vietnam indicate that rural communities, including the poor, are willing to contribute to the capital and maintenance costs of water and sanitation, provided that they have made an informed choice for the service level provided. To some extent, rural communities have also demonstrated a willingness to support poorer members through cross-subsidies. Overall, affordability is not considered a major issue at the current time. As tariffs rise in the future consideration will have to be given to provision of targeted subsidies to low income households.

The average percentage of the cost of water and wastewater services in the total household income is usually used to measure the consumer ability to pay. For planning purposes, a rule of thumb of around 3% for water is used. Current tariffs in Vietnam are typically below 2% of the average household income. Households that already have piped water are reluctant to pay more than the current tariff and conversely, communities that have no access to piped water are willing to pay much more than the current tariff. Currently, more than 50% of the households are paying for water whereas almost all rural households have "free" access to some water sources.

Rural Subsidies

There are two types of funding included in the NTP II. The first is routine funds for construction of water systems and sanitation coverage/IEC. The second type of funding is investment subsidies for water supply, especially for schools and kindergartens, hospitals, Commune Health Stations, and rural markets. The levels of grants stated in NSRWSS are 80% of construction costs for water supply of very poor households and 60% of construction costs for poor households. In addition, users can obtain loans up to 75% of total construction costs from the GoV rural water and sanitation fund. For gravity water systems in high mountain areas, the subsidy cannot exceed 90%. For

water piped schemes in a standard single village, the subsidy levels could reach 40% of the total construction cost, whereas for more difficult sites in mountainous, island and border areas, the national government subsidy can be as much as 60% to be supplemented by provincial government funds. Thus, whilst there are few subsidies for operations costs in the water sector, a capital subsidy is present for many systems, particularly for rural and small town schemes.

Circular 80 and revisions outlined in Circular 48/2008 provide the pro-poor financial mechanism for service delivery in NTP II. The subsidy for poor households and households in especially difficult communes, ethnic and mountainous areas, coastal regions and islands, border communes cannot be higher than 1,000,000 VND/household and for households in other areas the maximum is 800,000VND/household. The maximum support for each commune is 200 million VND. Households in P 135 II communes are not entitled to the subsidy for latrine construction.

Rural Water Tariffs

The rural problems with water supply evolve more around availability rather than cost. The revenues of the private water suppliers would come from the upfront connection fee (usually at the market rate of US$ 60-100) and the tariff. A small piped water provider charges a tariff of VND 2,500 to 4,000/m3 for treated water.

Private Sector in Rural Areas

Few incentives for private sector participation: GoV policy permits private sector participation in water and sanitation but there are only a few examples of domestic entrepreneurs since the regulatory and legal environment is not yet conducive to entrepreneurs. There are very few incentives - tariffs are fixed at levels, which barely cover costs, there is no independent regulatory framework, tax and financial reporting system inhibits growth and the legal position is unclear. Private investors in urban WSS are rare. Although the private sector has stepped in the rural areas, the restrictive government regulations tend to reduce system performance. Also, while the strategy of engaging the private sector and user financing in high density and lowlands rural areas has been successful, it is very difficult to engage in low density, remote upland areas. In highlands, costs of water supply and sanitation systems can be as much as $600 per household compared to as little as $4 in some lowland areas. Generally, the foreign investors in Vietnam are concerned about licensing delays, unstable GoV policy, inadequate infrastructure, lack of transparency and accountability, irregular tax structure and corruption.

3.5 International Donors and NGO Funded Projects

The programme co-financed by Australia, Denmark and the Netherlands supports the NTP II based on the NSRWSS. The main component of financial support is delivered through the GoV's NTPII as Targeted Programme Budget Support. This approach represents a major commitment of support through GoV's own financing and implementation structures, consistent with the principles established by the Hanoi Core Statement on Aid Effectiveness. In 2010, DFID will contribute funds to the programme.

UNICEF's support to water, environment and sanitation in Viet Nam dates back to 1982. Early on UNICEF's WES assistance was spread across the entire country and the orientation was very strongly towards infrastructure development. UNICEF's operation now focuses on developing technical capacity, policy development and managerial skills in GoV organizations including national CERWASS, the MoH, the MoET, mass organizations, communities themselves, along with INGOs, bilateral, and multilateral agencies.

The World Bank and the Asian Development Bank have been primarily focused on urban water supply and small town water supply. However, the World Bank has also supported some more 'rural' water supply activities in the Rural Water Supply Infrastructure & Health Improvement Project.

Collectively the INGOs together have tremendous experience both in different regions of Viet Nam and in different types of RWSS technology, and provide a valuable source of experience within the sector on specific technical, social and health related issues. Examples include the following.

The NGO East Meets West Foundation (EMWF) is helping to deliver water and sanitation services to about 125 poor communities from Quang Nam, Quang Tri, Hue, Quang Binh, Quang Ngai provinces, provincial government, National WSS agencies including NCERWASS and MoH. The results will be used by GoV for improvement to the RWSS Strategy, to the benefit of new and ongoing investment, the improved delivery of sustainable RWSS services, and meeting the MDGs/VDGs. Lessons will be drawn for implementation of new investments and operation and maintenance of the WSS systems, which must be established with community participation and based on a demand responsive approach.

Plan Viet Nam implementing a project in Quang Ngai with AusAID funding that seeks to develop replicable safe water marketing programme for effectively promoting use of simple household disinfection technologies in low lying flood affected areas of the Central Coast.

Oxfam GB is developing replicable approaches to the effective promotion of sanitation and water supply improvement in residential clusters in flooded areas of the Mekong Delta. These and other NGO activities are at the forefront of the NGO communities many novel approaches to sector, which are helping to address critical sanitation, hygiene and health related issues in rural Viet Nam.

In the case of IDE's work on hand pumps and latrine marketing in Vietnam some 80% of the total programme budget was used to finance a targeted commercial quality marketing campaign that fueled demand for the services and technologies of hand pump and latrine related supply networks. The result was a rapid growth in end-user financing of domestic hand pumps, tube-wells and low-cost latrines.

SNV's Water, Sanitation and Hygiene (WASH) Strategy 2010-2012 has three main projects selected around three strategic issues[19]; a) Sanitation & Hygiene, b) Functionality of water supply systems (OM&M), and c) Low Cost Appropriate Technologies (LCAT)[20]. The programme commenced at the end of 2007. In the past 1.5 years considerable progress has been made. SNV Vietnam positioned itself at the national and portfolio levels. Promising innovative initiatives have been introduced; work on the rural OM&M models (community managed and private sector involvement), piloting CLTS at scale in 50 villages, 5 communes of Lao Cai, Lai Chau and Dien Bien provinces, and introducing Low Cost Appropriate Technology (siphon filter and rope pump) has been carried out.

The focus on SNV's Functionality of Water Systems for Changing Communities initiative is the thin boundary between the functionality of WASH systems and the WASH governance[21]. Without good WASH governance, there is an unequal access of different groups to WASH services. Under such conditions, users will have unequal interest to contribute to water system management and this leads to early system breakdown. The reverse is also valid; persisting inequality leads to unequal power to influence local decisions related to water systems management, which is an example of poor WASH governance. The project includes the following activities:

- ✓ ***Technical:*** covering all the technical aspects e.g. sound layout/design and construction, care taker with technical skills, tools and equipment
- ✓ ***Social***: developing the local ownership by empowering inclusive water users' groups; ensuring equitable distribution, promoting informed choice
- ✓ ***Financial***: appropriate cost sharing, affordable and equitable water tariff,

allocation of resources for rehabilitation and upgrading, caretaker fees

- ✓ ***Environmental***: protection and cleaning of water source, tanks and water points, and management of local drainage.
- ✓ ***Institutional***: mechanism for regular monitoring, and for back-up support to users/groups, transparency on revenue and expenditures, policy framework and implementation

3.6 Sustainability of rural service provision

The network of pCERWASS nationwide collectively has the greatest experience of rural water supply and sanitation in Vietnam. During the implementation of the NTP II they have focused considerable resources at the establishment of piped water supply systems as these are the RWSS technology prioritized under the NSRWSS 2020 and that receive the bulk of GoV funding to the sector to date. In a major review of the constraints to implementation of the NTP II many pCERWASS regard a **lack of financial contributions from users** as a key constraint to the implementation of activities under the NTP II. A lack of financial contributions by users has reportedly been a major factor that has led to poor O&M arrangements, especially for O&M of piped water supply schemes. Consistently raising concerns over poor cost recovery and weak O&M arrangements, especially for piped water supply projects might underline a lack of social preparation, community participation, reliable assessment of demand and willingness to pay, and various inadequacies in terms of the IEC activities.

In the past, the focus in rural water supply has been on asset creation with limited effort into creating the institutional arrangements that will lead to sustainable service provision. Paying for water services and maintaining funds for O&M, has been insufficient. It is reported that up to 90% of the wells drilled under previous assistance programs are not operational. The highly fragmented approach to service delivery, and the lack of clear institutional models, leave the rural sub-sector without any vehicle to assist the technical operations/management of the systems, and their oversight by the communes and others. Reaching out to such a large number of owners/operators will require a new model of capacity building or, alternatively, the creation of new service providers who can operate across a number of villages and thus obtain economies of scale and scope.

Water supply systems in the rural area are designed for a life span of 15-20 years. However, a large part of systems break down completely or need major repair within 3-4 years. The rate of early water system breakdown is as high as 40% - 80% in Vietnam depending on varying local conditions including the quality of construction and natural disasters.

In 2007, NCERWASS[22]collected and compiled information and data from 39 provinces on the operations and maintenance (O&M) of piped water supply scheme. Findings indicated that the O&M of piped schemes depended on the conditions of each region, technology and size of the scheme.

Total number of piped schemes: 4,433 [23] (capacity from 50m3/day to 1000m3/day serving 500 - 10,000 people) including the following:

- 1,826 schemes (41,2%): good O&M
- 1,537 schemes (34,7%): medium O&M
- 856 schemes (19,3%): poor O&M
- 214 schemes (4,8%): no O&M

Currently, there are 6 management models, including such owners:

- pCERWASS: 1,999 schemes (45%);
- Commune People Committee: 1,105 schemes (24%);
- Cooperative: 153 schemes (3,5%);
- Enterprise: 36 schemes (0,8%)
- Private: 140 schemes (3,2%);
- Community: 1,033 schemes (22,6%)

Table 6: O&M of Piped Schemes

Or.	Management model – Ownership	Quantity	Ratio (%)	O&M (ratio %)			
				Good	Medium	Poor	No operation
	Total	**4,433**					
1	pCERWASS	1,996	45	61.9	25.2	9.5	3.5
2	Commune PC	1,105	24.9	37.6	55.8	2.2	4.3
3	Co-operative	153	3.5	58.8	30.1	9.2	2.0
4	Enterprise	36	0.8	100	0	0	0
5	Private	140	3.2	38.6	50	10.7	0.7
	Community	1,033	22.6	25.2	50	21.5	3.3

Source: NCERWASS

There are advantages and disadvantages for each management model depending on conditions in each region:

1. pCERWASS in charge of O&M: pCERWASS establishes a RWSS Service Station or O&M teams to directly manage and operate piped schemes. Key personnel in each team consist of team leader, O&M staff, staff for metering

& billing, accountant and cashier. Number of trained officers range from 3 to 10 people per water scheme.

2. Rural water supply enterprise: Enterprises are established and operated in accordance with Law on Enterprise, thus they are fully organized, systematically & professionally managed with relatively good O&M of schemes. However, this model is not suitable for small-sized water plants (<50m3/day) with low number of users, simple technology for water supply-treatment such as gravity schemes in mountainous area.

3. Commune People Committee: after the construction, rural water schemes are handed over to CPC who will decide on the establishment of a management board or operation group to operate and maintain the scheme. However, in some communes this model is not effectively working, which results in system down-grade and/or break-down. Problems include unclear organizational structure, leaders not trained, and holding several positions, and unstable staffing structure. There is no independent accounting, thus billing charges are not used for O&M.

4. Cooperative: This is a collective economic organization jointly established by individuals and households of common interest who jointly and effectively provide O&M services to the scheme. However, this model often uses un-trained staff for O&M, which effects quality of service, and the repairs or break-downs are not in timely manner. This model is suitable for medium scale schemes (capacity of 100-200m3/day serving about 1000-2000 population).

5. Community: This model is applicable for remote and mountainous areas with gravity schemes of simple technology and small scale (only tens of households). Water schemes are handed over to hamlet/village for management; one to three local residents are voted or voluntarily selected to carry out the O&M with low or no monthly salary or allowance, hence the long-term effectiveness of O&M may be reduced by time. However, in some provinces local residents prepare regulations and O&M schedule and disseminate to households at a village convention every quarter or half a year. Public work days are organized to maintain and clean water schemes.

6. Private sector: Local residents invest in scheme construction, then directly manage the scheme including O&M or private enterprises invest in the water scheme and trade rural water supply service. As mentioned above, the development of the private sector is slow, sustainability is not high, water quality is not closely monitored and water price is high.

4. Problem Analysis and Resolutions in Water Supply System

The NSRWSS emphasises demand driven approaches as a central principle in the socialisation of RWSS. Grassroots democracy provides a legal framework for the collection of community priorities, however, there is inconsistent application in the provinces, districts and communes. A main problem is the lack of organisational models to support villagers' demands. A group of villagers may decide to establish a cooperative group and invest in developing RWSS but cannot access credit.

Presently, many provinces issue inconsistent regulations or develop *ad hoc* arrangements that only resolve problems for the short-term. Allocating resources often follows areas were staff have capacity and budget, such as small-scale piped schemes, which is to the detriment of other areas. For example, WATSAN advisory services at the district level are an important part of implementing the NSRWSS, but in most provinces, the service network has not been established. In the communes, commune and village leaders are aware of RWSS problems in the community, however, the commune level does not contribute to planning processes that consolidate local priorities into a coherent RWSS strategy. Importantly, commune officials need access to information on RWSS, financial sources, investment options besides piped water schemes, and need capacity strengthening in effective financial, technical and managerial systems.

The GoV implements national programmes such as NTP II, P 135 II and P 134 to improve access to water supply for ethnic minorities. These programmes characteristically use a general 'one size fits all' approach to deliver access to services and state resources for the different ethnic minority groups, in different regions, in diverse situations and problems. Little attention has been paid to the fact that locally people are already dealing with their daily realities in a certain way. They have experiences and they have capacities. Their indigenous knowledge (IK) could solve many issues in a locally adapted and sustainable way. The fact that teaching and training have been in Vietnamese and not in local languages, have made non-Vietnamese speaking groups feeling inferior as their language, their way of making a living and their way of understanding the world have been regarded as 'backward' and something that should change.

The present delivery approach has resulted in ethnic minorities becoming passive 'targets' of benefits. Ironically, dependency has resulted from the large amounts of support provided by the GoV. The problem is not the Government

support itself, but rather, the ways in which the Government has given this support has promoted dependency, low self-esteem and passivity, rather than promoting empowerment, social capital and capacity in the villages. It is therefore the poverty rate among ethnic minorities reduced from 86% to only 52% in comparison with the national poverty rate which reduced from 58% to 16% between 1998 and 2006[24].

In addition, poor representation of ethnic minorities by their elected representatives and the lack of oversight of ethnic minority policies and national programmes substantially limit the collection of evidence which is necessary to prepare the detailed instructions to line ministries and provincial People's Committees. Hence it is difficult to effect policy change and improve the impact of national programs. People's elected representatives often are motivated people who wish to improve the well-being and livelihoods of their constituents but do not have the capacity to effectively carry out their mandate and represent the interests and needs of ethnic minority communities.

In ethnic minority communities cohesion is enhanced through the continued practice of customary law (village constitutions, conventions and regulations), and the continuing authority of village elders. However, these structures have not been recognized by state law. As a result, customary law, culture, leadership and confidence of ethnic minorities have been eroded.

Natural Disasters

Located in one of the five storm-prone areas of the Asia Pacific region, Vietnam is one of the most vulnerable countries to natural disaster, which significantly and regularly affects rural water supply. In recent years, recurrent disasters have occurred all over the country, causing vast losses in human life, property, socio-economic and environmental degradation. Natural disasters in Vietnam have been increasingly severe in terms of magnitude, frequency and volatility. The World Bank Natural Disaster Risk Management Project appraisal found that over the decade 1995-2004, 6,000 people lost their lives, 320,000 houses were destroyed and 9,000 boats sunk, resulting in a USD$2.5 billion loss in capital assets. In recent years (2006-2007), natural disasters caused 1,007 dead and missing incidents and the economic loss equivalent to approximate US$ 2 billion in Vietnam (Central Committee of Flood and Storm Control, 2007).

The poor are the most vulnerable to natural disasters, which causes severe damage, including loss of clean water supply and other infrastructure, shelter and livelihoods. These phenomena cause epidemics, polluted water, land and resource degradation, and the interruption of social, health, and education services, etc.

Replacement and extension/expansion of water supply systems

One of the most significant limitations of the NTP II in its current form is that decisions on investment are based upon provincial level master planning. Master Plans are inherently unreliable due to the poor quality and paucity of the statistical information used to derive them. This leads to ineffective targeting of resources by provincial level. There is not much evidence of lower levels at district and commune level being involved in the development of plans for sector spending through the RWSS-NTP. It has been consistently argued that for investment in piped water supply schemes, especially those financed through the GoV funded grant programmes, finance needs to be disbursed to the province and the district level based on the development of sector plans. To improve the effectiveness of GoV grant funds District RWSS plans that identify water supply demands down to village level are urgently needed.

Institutional aspects

Decentralization as the means to bring resources closer to the community has been promoted in many pilot provinces. Resources for water and sanitation facilities have been delegated in some districts. However, the monitoring and follow up on how implementation is carried out at district and commune level has not been addressed appropriately. Feedback during implementation is not reported to higher levels.

For effective development of the sector, GoV and donor/INGO projects and programmes that have a focus on RWSS need to be integrated at provincial level. Developing the institutional arrangements to coordinate and manage RWSS efforts will be difficult and take commitment by provincial leaders.

Decisions on the allocation of resources for water supply and sanitation need to be transparent and accountable, and the criteria and indicators used for monitoring need to be simple and easy to use. However, a guideline for resource allocation and regulations with clear criteria has not been prepared. Without these guideline and regulations, it is very difficult for the People's Council and the community to effectively supervise implementation.

The cooperation between agencies and sections at district level is not clear. The functions, roles and responsibilities relating to state management and service delivery of water supply and sanitation are also not clear. There are no staff dedicated full time to water supply at district level. The result is difficulties in follow up and improving the sustainability of water supply schemes and sanitation.

The capacity of local authorities on pro-poor planning and management, and

pro-poor targeting is low. Leaders and civil servants often do not have skills such as poverty mapping and wealth ranking.

Financial mechanism
Review of reports on the accessibility of poor and vulnerable people to credit indicates that although credit programmes for the poor are available in communes, the very poor and those who live in remote areas usually do not have access to this credit. The BSP loans for water and sanitation are not a high priority for many poor households and usually only better off household access these low interest loans. There has been no piloting to develop a pro-poor financial mechanism to resolve this problem.

Affordable technology for poor households is a key solution to increase the coverage of water supply and sanitation. There is a need to define suitable but affordable technology with a flexible investment mechanism for the poor.

Participatory and pro-poor decision making process
Effective pro–poor targeting requires the utilisation of a number of tools to improve the planning process. These tools are different for each level of government and the community. At commune level, tools such as PRA, problem analysis and solution defining, wealth ranking could be carried out to select beneficiaries and priority groups. At decision making level (district and provincial level), clear criteria and a transparent, accountable decision making process is a crucial condition. It requires commitment of leaders and civil servants to understand poverty dynamics and pro-poor development.

5. Description of strengths and constraints of the service delivery models in 2009.

Many of the constraints and barriers to increasing RWSS coverage through this major government funded grant programme were related to ineffective mechanisms, approach and policy to mobilize various funding sources. In summary the current situation of inadequate finance for the RWSS sector in Vietnam is being compounded by (a) lack of direction from provincial people's committee, (b) lack of community participation, especially in terms of planning the cost recovery mechanisms, (c) emphasis on targeting the poorest and most marginalized communities, (d) too much focus on high technology rather than appropriate technology, (e) lack of attention to IEC as a way of stimulating users willingness to pay (f) many people are not convinced of the potential health benefits of piped water, (g) low capacity of commune and district staff for financial management (h) complicated procedures and regulations on construction that inflated prices.

O&M of water supply schemes - Sustainability

O&M of water supply schemes is improving in most provinces. In most schemes sufficient revenue is recovered to meet operational costs but there is no provision for depreciation or for the periodic replacement of major facilities. Tariff levels and therefore cost recovery is lower in the Northern provinces than in the Mekong Delta. It is likely that the sustainability of some of the point sources in the Mekong Delta will be affected by over-exploitation of groundwater resulting in the lowering of groundwater levels and the risk of salination. Tariffs should cover operation and maintenance costs in accordance with the relevant MARD circular. Where user affordability does not allow full O&M recovery, transparent subsidies from local government budgets should be provided and phased out in accordance with GOV policy.

All schemes handed over to O&M organisation should be, as far as possible, completed and tested, including house connections and meter installations. All schemes are provided with a scheme specific O&M manual (in accordance with the O&M manual recently developed by NCERWASS), and that staff are properly trained accordingly. Monitoring of O&M performance is included in the new M&E system.

Water Quality

The new water quality regulations issued by the MOH are more appropriate and it is encouraging to note that the water quality indicators are included in the official monitoring and evaluation system. However, at present the operators of piped water facilities rarely test water quality and the provincial preventative medicine centres are not allocated sufficient budget to comply with current regulations for testing i.e. testing a minimum of 14 parameters every 6 months for each facility. Chlorine testing is a simple and relatively cheap means of ensuring safe water quality.

Monitoring and evaluation

A timely, accurate and affordable M&E system is essential to track progress in the achievement of sector targets for coverage and quality. To date reliable aggregated information on the RWSS sector status has been lacking. An M&E Indicator Set was piloted, revised and agreed by government in 2008. A detailed M&E manual was prepared and NCERWASS, with assistance of local consultants, provided initial TOT for relevant provincial level officials during early 2009. Recurrent budget has been allocated in 2009 to enable provinces to complete M&E training of district and commune staff.

Capacity to implement the M&E system varies between provinces. Similarly, within provinces, implementation in some areas is likely to be more difficult,

for example, because of access and literacy issues in remote/mountainous areas and ethnic communities. All provinces should make provision for some data verification studies focused on difficult areas.

Access to Credit: Vietnam Bank for Social Policy

The lending of the Vietnam Bank for Social Policy (VBSP) is the main source of finance for household level sanitation and water supply. The VBSP emphasized that its lending performance would benefit from improved poverty targeting and IEC. In 2009, the SO discussed with the VBSP to develop mechanisms so that households and community groups can borrow funds for water supply

Water Supply Coverage

The planned target for NTPII water supply coverage of 7.4 million people from 2006 to 2010 was revised to 3.2 million in 2008. The main reason was a significant increase in constructions costs and the leveraging effect of donor funds has been lower than expected[25].

Anti-corruption

Measures to curb corruption and corrupt practices have focused on improving public financial management, procurement and auditing[26]. Equitable access was considered a priority in RWSS programmes but mechanisms to ensure this access were lacking. Increasingly, users have become involved in the supervision of the construction of facilities. This was an important first step. However, users need to be involved in all stages of the project cycle including design, planning, implementation, M&E and supervision.

The TPBS's triggers and benchmarks include five anti-corruption related measures. Firstly, a Value for Money audit was conducted annually in order to assess the effectiveness & efficiency of NTP II activities. The State Audit of Vietnam (SAV) was responsible for the audits, including the compliance of expenditure's principles, accounting practices and disbursement through State Treasuries, as well as adherence to regulations, procedures and norms on procurement & payment, and the required fulfillment of committed triggers & benchmarks in the Funding Agreement and within favourable conditions. Value for money audits of some constructed water & sanitation facilities were also carried out. The first value for money audits was conducted in 2008. Secondly, to improve procurement practices, the programme introduced training and greater precision in rules (procurement to follow the new law) and introduced sample auditing. The inclusion of local contractors in procurement process was a priority. In 2008, the programme issued the necessary guidelines and conducted the training. Sample audits were carried out as part of the 2008 value for money audit. Thirdly, the focus or mitigating

fiduciary risk was to intensify audit and institutionalise sufficient recurrent budget for this purpose. Fourthly, GoV cost norms needed to be revised to allow quality works to be constructed based on price levels appropriate to the individual provinces. Circular 80 issued in 2008 and consequential revisions outline information about flexible and practical cost norms. Finally, development of the financial and implementation progress reporting system improved contract management and provided multi-year linkage through regular financial reports.

According to the 2009 Joint Annual Review Aide Memoire most triggers and benchmarks relating to financial and procurement safeguards and adherence to NTPII strategies, have been achieved or partially achieved. In particular financial accountability has been confirmed by tracking studies and SAV audits.

The Value for Money audits conducted in 2008 and 2009 by the SAV were the main mechanism to assess the TPBS programme towards its triggers and benchmarks including anti-corruption related measures. These audits indicated that tendering processes accorded with Vietnamese Law, the conditions had not been prepared for effective decentralisation, some contractors had not clearly defined technological and production standards of equipment and facilities to be installed in schemes and some water supply schemes had very low ratio of connected households, sometimes as low as 20% of capacity which questions the reasoning of local leaders[27]. There was no indication of corrupt behaviour or recommendations for improved prevention or enforcement of anti-corruption. However, the audit identified that capital resources were used for improper targets and other irregularities and recommended that these amounts should be reclaimed[28]. Issues such as social accountability and equitable access to water supply infrastructure were not examined during the audits.

Pro-poor Impact

In 2009, guidelines for how to increase the pro-poor impact of the NTPII were developed by the SO[29]. The guidelines have not been made official and they still have the status of an external report. Some of the recommendations in the guidelines have been incorporated in the 2010 planning guidelines issued by the MARD to the provinces (circular 1787 of June 2009). These include:

- Collecting statistics on poverty profile of the province (using existing data) and the water supply and sanitation coverage amongst the poor.
- Including pro-poor targeting as one of the evaluation criteria for provincial performance.
- Including pro-poor targeting as one of the provincial objectives of the NTPII.

- Giving budget allocation priority to reaching the poor with water and sanitation and IEC interventions.
- Priority to developing technologies suitable for poor households.

The planning guideline stops short of specifying numerical criteria for how to prioritize pro-poor spending. The decision on how to prioritize is left to the province. The finalization of the guideline will help ensure equitable access to all members of the community.

Construction Quality

The quality of construction of piped water schemes and public latrines was generally good. Areas where improvements are required include: i) the materials used for house connections and their quality of construction; ii) plumbing fittings in public latrines; and iii) the provision for emptying septic tanks in public latrines.

Institutional progress

MARD and other central agencies continued to develop the institutional framework for implementation of the NTP II program, including revisions to operational procedures; financial management guidelines; procurement manual; M&E indicators; budgeting and planning for 2009; guidance on tariffs; and simplification of water quality standards; and finalisation of a draft decree on socialisation.

At national level, coordination of ministries has continued to improve and the SO has maintained a good relationship with other sector stakeholders including UNICEF and the RWSS Partnership. At provincial level evidence indicates this contributed to improved understanding of NTP II principles, improved coordination between departments and clarification of mandates. Strong PPC oversight is an important factor in effective program implementation.

These and other improvements in the institutional framework have contributed significantly to improved physical implementation. The key institutional challenge remains the provision of practical support; training and capacity building of implementation units at provincial level.

ANNEX ONE: Water Quality issued by MoH

Re	Parameters	Unit	Max limits	Method of test TCVN=VN standards no.	Control level (*)
I. Perceptive parameters and inorganic elements					
1	Colour	TCU	15	TCVN 6187 -1996 (ISO 7887 -1985)	I
2	Odour		Odourless	Perception	I

3	Turbidity	NTU	5	TCVN 6184 -1996	I
4	pH		6.0-8.5 (**)	TCVN 6194 - 1996	I
5	Hardness	mg/l	350	TCVN 6224 -1996	I
6	Ammonia (as per NH_4^+)	mg/l	3	TCVN 5988 -1995 (ISO 5664 -1984)	I
7	Nitrate (as per NO_3^-)	mg/l	50	TCVN 6180 -1996 (ISO 7890 -1988)	I
8	Nitrite (as per NO_2^-)	mg/l	3	TCVN 6178 -1996 (ISO 6777 -1984)	I
9	Chloride	mg/l	300	TCVN 6194 -1996 (ISO 9297 -1989)	I
10	Arsenic	mg/l	0.05	TCVN 6182-1996 (ISO 6595-1982)	I
11	Iron	mg/l	0.5	TCVN 6177 -1996 (ISO 6332 -1988)	I
12	Oxidation as per $KMn0_4$	mg/l	4	Normal technical norm of the Labour medical and sanitation environment institute	I
13	TDS	mg/l	1200	TCVN 6053 -1995 (ISO 9696 -1992)	II
14	Cooper	mg/l	2	TCVN 6193-1996 (ISO 8288 -1986)	II
15	Cyanide	mg/l	0.07	TCVN 6181 -1996 (ISO 6703 -1984)	II
16	Fluoride	mg/l	1.5	TCVN 6195-1996 (ISO 10359 -1992)	II
17	Lead	mg/l	0.01	TCVN 6193 -1996 (ISO 8286 -1986)	II
18	Manganese	mg/l	0.5	TCVN 6002 -1995 (ISO 6333 -1986)	II
19	Mercury	mg/l	0.001	TCVN 5991 -1995 (ISO 5666/1 -1983 ISO 5666/3 -1989)	II
20	Zinc	mg/l	3	TCVN 6193 -1996 (ISO 8288 -1989)	II
II. Micro-biology					
21	Total Coliform	bacteria /100ml	50	TCVN 6187 - 1996 (ISO 9308 - 1990)	I
22	E. Coliform or heatproof Coliform	bacteria /100ml	0	TCVN 6187 - 1996 (ISO 9308 -1990)	I

ANNEX TWO: Section From VHLSS That Includes Questions About Water Supply

SECTION 7. ACCOMMODATION (END)

30. Do you use a filter or chemicals to purify water for daily consumption?

YES	1	
NO	2	

31. Does your household have to pay for water?

YES	1	
NO	2(>>**33**)	

32. How much has your household paid for water in the past 12 months?

THOUSAND VND

33. What type of toilet does your household have?

FLUSH TOILET WITH SEPTIC TANK/SEWAGE PIPES	1	
SUILABH	2	
DOUBLE VAULT COMPOST LATRINE	3	
TOILET DIRECTLY OVER THE WATER	4	
OTHERS	5	
NO TOILET	6	

34. What is your main source of lighting?

ELECTRICITY	1	
BATTERY LAMP, RESIN TORCH	2	
GAS, OIL, KEROSENE LAMPS	3	
OTHERS (SPECIFY: _____)	4	

35. Has your household had to pay for electricity in the last 12 months?

YES	1	
NO	2 (>>**37**)	

36. How much has your household paid for electricity in the last 12 months?

THOUSAND VND

37. How has your household disposed garbage in the last 12 months?

COLLECTED	1
DUMPED IN RIVER/LAKE	2
DUMPED IN A SITE NEARBY	3
BURIED	4
BURNED	5
OTHERS (SPECIFY_____)	6

ANNEX THREE: Terms of Reference
CONSULTANCY FOR THE DESCRIPTION OF RURAL WATER SUPPLY[30] SERVICE DELIVERY MODELS

Terms of Reference

Background and justification
JMP figures for water and sanitation make us hopeful. Sanitation is still lagging behind, but encouraging progress seems to have been made. However, the unspoken truth among practitioners is that current coverage figures obscure the wide-spread reality of poor services and use in both water supply and sanitation. Sustainable service is a big challenge, going far beyond just coverage at a given point in time.

The theoretical lifespan of rural water supply systems is 15-20 years, unfortunately many waterpoints/ systems often need extensive repairs or even rehabilitation within 3-4 years of installation and may never reach the "operational" lifespan. Although O&M or investment efficiency are important, the real problem is equity. Public resources repeatedly go to the same localities. Defective and inadequate services affect the poorest groups in a community most. While much has been made of the concept and models for "Village Level Operation and Maintenance" (& management)- VLOM" globally over the last three decades, its actual viability to provide sustainable services is questionable.

There is a thin boundary between functionality and WASH governance& equity. As a result of systems breakdown, public resources are used to rehabilitate or re-construct water systems in the same locality instead of expanding services to new/remote areas. Therefore, improved functionality is key to reach the poorest and excluded groups in the society; and to achieve MDG targets in the WASH sector.

Communities are dynamic and change during those 15-20 years of expected lifespan of services. Are communities, local governments, line agencies, NGOs, private sector prepared to deal with change? This question will become even more crucial, as the world is facing a triple crisis: financial, food& fuel and climate change. Though implications for WASH need more exploration, it is clear that these crises pose an additional threat to functionality.

The issue of sustainability and functionality is not new. For more than 35 years, the sector is talking about ways to enhance sustainability of services. Solutions that have been proposed over the years are very much related to a particular world vision and values of the organisations involved. It still proves to be very difficult to differentiate between our own criteria of sustainability and the ones that actually matter in a particular context. Surprisingly little attention has been given to learning from the present situation of service delivery (beyond community level). There is a need to have a more detailed description of current practices.

Also, in work on sustainability, little emphasis has been given to the wider institutional setting in which “community projects” take place. One of the reasons may be that for too long time, this wider institutional setting was considered temporary: a number of programmes depending very much on the available and provided sources of (external) finance in place. This is different from the service delivery context in developed countries, where there is a more continuous planning financed out of the national budgets. Nevertheless it is useful to describe this fragmented service delivery model, consisting of different programmes, the lead agenc(ies) and how programmes are identified, selected & endorsed.

It is clear that ensuring access to water supply and sanitation in rural areas is a shared responsibility of both government and households (through their communities). In many countries there is also an emerging role to play for the private sector. Still, how roles and responsibilities can best be organised to guarantee sustainable access, remains a challenge. Many of the proposed solutions for sustainable access focus either on the role of one actor only (e.g. communities) or only on a part of the service lifespan. Very few take into account planning of investment in a wider district or provincial context, and

[30] Though in many countries water supply & sanitation are part of the same programme, this research is primarily limited to water supply.

the capacity to respond to post-construction problems is often non-existent. Moreover, in several countries the rural WASH sector is highly fragmented and with different models and methodologies existing parallel in a same geographical area.

This review aims to give a description of how different countries are organising rural water supply services, both formally and in practice. The descriptions of the so-called “service delivery models” of rural water supply and sanitation at country level, will help to understand the current situation, lessons learnt and best practices (principles). It will also help to shape SNV’s work in this field. Visualising the strengths and weaknesses of the current service delivery models.

Objective
A comprehensive description of the current Service Delivery Model in Rural Water Supply being applied in the country and it’s effectiveness.

Deliverables:
A comprehensive description (report) of the way the rural water supply sector is organised for investing in and sustaining access to water (maximum 20 pages). This should contain the following elements:

- Context and WA(SH) investment programmes or investment cycles (national and subnational level)- 3 pages.
- Description of the named “service delivery models” in place in the country -5 pages-.
- Sustainability aspects of service delivery models -4 pages-.
- How are changes/expansions, disasters or major system functioning failures/problems dealt with -2 pages-
- Description of strengths and constraints of the service delivery models in terms of their achievements related to equity of access, sustainability of access, level of investment, transparency& accountability -2 pages-

References to other studies related to “functionality” of water services and references to sources should be included.

Methodology
This is a desk study. It is expected that the consultant draws upon existing studies and most of all upon his or her own in-depth knowledge of the rural subsector.

Profile and selection of the consultant
Consultant with in-depth knowledge of the rural WASH sector, both of the different projects as of the institutional setting.

The consultant will be selected on the basis of a workplan and financial proposal.

Organisation and monitoring of the study
The responsibility for the monitoring of the study will be with the Asia WASH network leader and the respective in-country sector leaders. The consultant is expected to present a first draft after 3 weeks. The final draft will be reviewed by the in-country sector leader, the network leader and a sector leader from another country.

Duration
The duration of the study will be 6 weeks, effective time investment: 2 weeks.

Payment
There will be one payment made in advance.

Annexes:

1. Detailed suggestions for the contents
2. Possible inputs (per country)
3. Triple S framework
4. Promising management models of rural water supply services

ANNEX 1 Detailed suggestions for contents

Comprehensive description of the way the rural WSS is organised for investment and sustaining access to water and sanitation (maximum 20 pages). This contains the following elements:

A. Context and WASH investment programmes or investment cycles (national and subnational level)- 3 pages. This includes:

- Official (national) service standards as defined by the government (quantity, quality, continuity) and legal basis for this. (if so, mention whether the government recognized WSS as human right)
- JMP and official coverage figures for rural water supply. There may be several different official coverage figures from different sources, having a different definition of coverage. Include coverage definitions and other factors that explain differences between the figures. Indicate which figures are considered to be closest to reality.
- Describe how the roles and responsibilities of policy, regulation and operation of rural WSS services are divided among the different institutions (formally). Who is the lead agency? Include an institutional diagramme. Mention the areas of obvious overlap or conflict of mandates.
- (If possible, include a brief history of WASH programmes and responsibilities in the country.)
- How are investment needs identified and by whom? Which formally recognised WASH programmes are in place in the country, which institution(s) gives that recognition on which basis?
- How does monitoring in take place?
- Do all programmes work under the same delivery model? If not, please identify ("name") the main delivery models (see example)
- Incorporate subnational level, reflecting the degree of descentralisation in the investment cycle.

B. Description of the named "service delivery models" in place in the country -5 pages-. This includes:

- Method of identification of investment areas (districts or provinces)
- Method of identification of investment projects (communities)
- Description of the "project cycle": depending upon the model this may include (not in order) : community agreements, planning, pre-factibility, community demands, contribution, negotiation with the community, formation of WUGs, technical design, different training activities, construction, source protection, formal hand over to the community etc. etc.
- Describe the levels of investment from different actors (includes community investment and investment in kind, contributions/ requirements)
- Identify those actors with formal responsibilities at the end of the investment project: who legally owns the system? Is the WUG legally or formally recognised?
- Briefly describe involvement of non-related agencies (state or non-state) in the process. E.g. involvement of ministry of health, public works, or of local authority, NGO's or private sector, etc.

C. Sustainability aspects of service delivery models -4 pages-. This includes:

- Please describe for each 'service delivery model", who the "operator" of the system is and how – in theory- O&M, decision making, imposing of sanctions, fee setting and collection, communication and finance are organised. For those with user responsibilities (E.g WUGs WUCs etc..), what are the structures and roles of these entities and, is there evidence of this being the case, how are those involved responsible remunerated or nots?
- For each model, which mechanisms for post-construction support, follow-up, regulation and supervision are in place? Include formal responsibilities as well as financial contributions of others than the "operators" of the system.
- Give an indication of how long (years) this support and follow-up continues after the handover of the system.

D. How are changes/expansions, disasters or major system functioning failures/problems dealt with (2 pages). including:

- Please describe the mechanisms in place to deal with the above (include financial)

- Mention the main changes that communities are facing and how this affects RWS. For example rural out-migration.
- Mention how the level of demand of rural water users is evolving[31], as compared to the service standards set by the government.
- How are replacement and extension/ expansion of systems organised?

E. Description of strengths and constraints of the service delivery models in terms of their achievements by the following parameters -2 pages-. This includes:

- Equity of access (nationally, between communities, within communities)
- Sustainability of access (number of years of functional systems)
- Level of investment over the life span of the system (estimation)
- Transparency and accountability

[31] For example in the '80s in Nicaragua, all rural water supply projects were designed as public standposts, but beyond 2000 most communities are not satisfied with this level of service. They all want household taps.

ANNEX FOUR: List of References

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