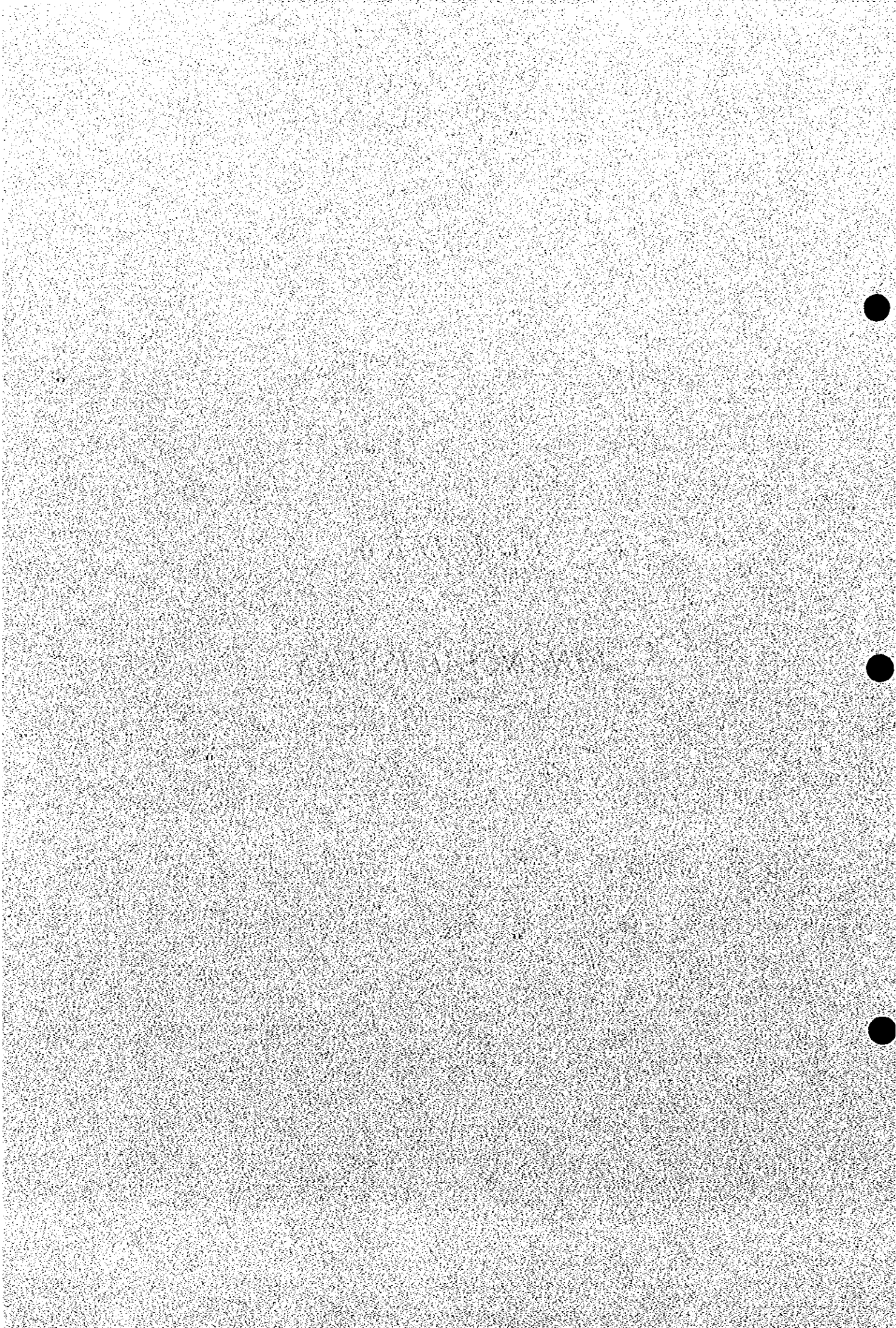


CHAPTER 6

FINANCIAL ISSUES



CHAPTER 6 FINANCIAL ISSUES

6.1 Overview of Investment in Rural Water Supply

6.1.1 Rural Water Investment in the Public Investment Program

Vietnam's total investment was estimated to have reached about US\$ 18 billion from 1991~1995, of which the Public Investment Program (PIP) amounted to US\$ 400 million (see Table 6.1). The total public investment is expected to increase nearly four fold in the 1996~2000 period, compared to the 1991~1995 period. Although no investment is recorded in the table for rural water supply in 1991~1995, some investments were carried out, in practice, by the central government and UNICEF during this period. From 1996 to 2000, 29 % of the total public investment is to be used for water systems. The allocation for rural water supply would be about US\$ 30 million, or 0.2 % of the total.

Table 6.1 Public Investment Program: Water Sector Investment (in 1995 prices)

	Estimated 1991~1995 period		Proposed 1996~2000 period		% of PIP 1996~2000
	(US\$ million)	Share	(US\$ million)	Share	Share
Total Public Investment Program	4,000		15,600		100 %
Total Water Sector	1,080	100 %	4,501	100 %	29 %
Hydropower	400	37 %	1,940	43 %	12 %
Urban Water Supply	280	26 %	872	19 %	6 %
Urban Drainage	-	-	890	20 %	6 %
Irrigation, Drainage & Flood Control	400	37 %	653	15 %	4 %
Waterways	-	-	116	2 %	< 1 %
Rural Water Supply	-	-	30	< 1 %	< 1 %

(Source: Vietnam: Water Resources Sector Review, The World Bank, May 1996)

6.1.2 Investment Structure in Rural Water Supply

There are several financing sources for rural water supply in Vietnam: State Government (CERWASS), international donors including UNICEF, local government (Provincial, District, and Commune People's Committee) and users. Although CERWASS oversees the entire rural drinking water sector, it has difficulties in monitoring all of the investments in this sector since there are some water supply projects implemented only by local governments and/or users, such as private wells.

The central government data shows that the UNICEF —supported WATSAN (Water and Sanitation) program started in 1982 represents around 80 % of the investment in Vietnam's rural water supply. In this program, UNICEF has contributed 56 % of the investment, the central government 17 % and local governments and users 27 %. Most of the water supply programs undertaken by other international donors did not request contributions from local governments and users. The following tables show the structure of investment in rural water supply and the investment amount in rural water supply by international donors (1991~1997).

The central government does not monitor investments in which it is not involved. The result of NRWSS's survey on nine provinces (Lai Chau, Thai Nguyen, Nam Dinh, Nghe An, Quang Nam, Dak Lak, Dong Nai, Dong Thap, Soc Trang) shows that the contributions by local governments (mainly Provincial People's Committee) and water users account for 62 % of the total investment in rural water supply in 1996 (see Table 6.4). It seems that there are a significant number of wells built by local residents without any subsidies.

Table 6.2 Structure of Investment in Rural Water Supply (US\$ million)

Source of Investment		1991-1995 (total)	1996	1997 (estimate)	Total Investment	Share
WATSAN Program	UNICEF	18.75	2.66	1.89	23.30	56 %
	Central government	3.92	1.36	1.73	7.01	17 %
	Local gov'ts & users	8.19	1.36	1.61	11.16	27 %
	subtotal	30.86	5.38	5.23	41.47	100 %
Other Programs	International donors	2.77	2.44	0.67	5.88	51 %
	Central government	0.14	2.88	2.64	5.66	49 %
	Local gov'ts & users	0.03	N.A.	0.04	0.07	<1 %
	subtotal	2.94	5.32	3.35	11.61	100 %
Total Investment		33.80	10.70	8.58	53.08	

(Source: NRWSS Economic and Financial Situation, June 1998 (originally from UNICEF, CERWASS, NSC, Donors' representatives))

Table 6.3 Investment in Rural Water Supply by International Donors (USD)

Organization	1991-1995	1996	1997 estimate	Total
Oxfam-Quebec	75,000	30,000	15,000	120,000
Christian Outreach	138,000	11,600	2,000	151,600
Oxfam Hong Kong	309,398	83,287	92,756	485,441
EAST	113,000	39,000	118,500	270,500
IDE	760,000	190,000	190,000	1,140,000
OECD		1,759,164		1,759,164
UNHCR	487,868	144,969	252,882	885,719
AFSC	81,052			81,052
CIDA	221,108			221,108
CIDSE	64,135			64,135
CSI	9,500			9,500
CWS	408,010			408,010
ICCO	80,955			80,955
MCC	6,250			6,250
Oxfam-Belgium	6,488			6,488
Oxfam-UK	10,346			10,346
UNICEF	18,750,000	2,660,000	1,890,000	23,300,000
TOTAL	21,521,110	5,096,525	2,561,138	29,178,773

(Source: NRWSS Economic and Financial Situation, June 1998)

Table 6.4 Investment Per Capita in Rural Water Supply in 9 Sampled Provinces Surveyed in NRWSS

	1992-1995 annual average					1996				
	Donor	Gov.	PPC	HH	Total	Donor	Gov.	PPC	HH	Total
Investment Per Capita (VND)	484	167	447	298	1,396	518	413	1,170	359	2,459
Share	35 %	12 %	32 %	21 %	100%	21 %	17 %	48 %	14 %	100%

PPC: Provincial People's Committee HH: Household

(Source: NRWSS Economic and Financial Situation, June 1998)

6.1.3 Investment in Piped Water Schemes

Since construction of piped water schemes is a large capital investment, in most cases it requires government budget funds. Contribution by provinces, districts and communes significantly varies depending on their budgetary capacity and the urgency of the projects.

Users pay for house connections and O/M costs, and also, in some cases, part of the capital investment. The following table shows the total investment in piped water schemes implemented by CERWASS.

Table 6.5 Investment in Piped Water Schemes Implemented by CERWASS (1990-96, 1997)

(VND million)

		1990-96 Total	1997	1990-97 Total
Number of Schemes		336	102	438
Capacity (m ³ /day)		44,976	21,978	66,954
Number of Beneficiaries		840,310	337,395	1,177,705
Financing Sources	UNICEF (%)	14,432	4,278	18,710
		23%	10%	17%
	State Government (%)	27,765	23,250	51,015
		44%	53%	48%
	Local Government and Users (%)	20,629	16,425	37,055
	33%	37%	35%	
Total Investment		62,827	43,953	106,780
Investment Per Capita (VND)		80,000	135,000	91,000

(Source: NRWSS Economic and Financial Situation, June 1998)

The provincial government's share of the total investment in piped water schemes reflects its budgetary capacity. In the target provinces in the study area, Hanoi City bears nearly 50 % of the total investments in piped water schemes, while Ha Tinh Province has made no contribution. The following table shows the share of investment in piped water schemes in the Study area.

Table 6.6 Share of Capital Investment in Piped Water Schemes in the Study Area

Province or City	No. of Facilities	Capital Investment (VND million)					Users*
		Total Costs	Central Gov't	UNICEF	Provincial Gov't	District Gov't	
Ha Noi	16	5,503	1,625 (30 %)	311 (5 %)	2,615** (48 %)	-	952 (17 %)
Thai Nguyen	6	1,026	587 (57 %)	108 (11 %)	173 (17 %)	-	158 (15 %)
Ninh Binh	6	3,058	1,572 (51 %)	643 (21 %)	30 (1 %)	-	813 (27 %)
Thanh Hoa	11	2,222	1,533 (69 %)	328 (15 %)	60 (3 %)	65 (3 %)	236 (10 %)
Ha Tinh	11	3,711	2,205 (60 %)	526 (14 %)	-	-	980 (26 %)
TOTAL	50	15,520	7,522 (48 %)	1,916 (12 %)	2,878 (19 %)	65 (<1 %)	3,139 (20 %)

*House connection may be included in users' contribution. **Estimated by the Study Team.
(Contribution by commune levels exists but is not well monitored.)
(Source: Provincial CERWASS offices)

6.1.4 Operation of Existing Piped Water Schemes

The Study Team carried out interviews at several piped water schemes located in the target provinces. The following are the three cases that may provide useful information in designing piped water schemes:

<Case 1: Subsidizing the Rich (Yen Dinh Town, Thieu Yen District, Thanh Hoa Province)>

Groundwater in Yen Dinh Town was not potable due to high iron concentration. Given the urgency of the water supply situation, an unconventional financial measure was taken: the Ministry of Planning and Investment, not the Ministry of Agriculture and Rural Development, directly financed the project. The total cost was VND 1.2 billion, divided between the state (VND 1.1 billion) and the district (VND 100 million). The users paid for house connections, which were VND 300,000 per family on average. As the owner of the system, the district assumes O/M activities, including the tariff collection of VND 1,200 per m³. Tariff revenues are VND 5 million per month, of which VND 2 million is earmarked for the future repairs of the system. The distribution pumps operate six hours per day. 600 households are currently connected to piped water and the district intends to increase the connection by 2010 to the total population of 2,000 households.

Many households in the town do not benefit from the project since they cannot afford the connection fee. No public taps have been installed for them; the district maintains that public taps are difficult to manage. As a result, this project enlarges the income gap in the town by subsidizing only the rich, namely those people who can afford a house connection.

<Case 2: Poor Management (Thach Ngoc Commune, Thach Ha District, Ha Tinh Province)>

Ha Tinh Province is one of the poorest provinces in Vietnam, where the average per capita income is estimated at around US\$ 150. The piped water scheme in Thach Ngoc Commune was built in 1997, financed by the state (60 %), UNICEF (10 %) and the state-owned agricultural extension company operating in the commune (30 %). Eight public water tanks are installed in the commune and the state-owned company is assuming O/M activities as an owner of the system. There are no meters on the public tanks and no fees have been collected. The company complains that users do not pay the water fee but apparently has not discussed the matter with the villagers. The company operates the system only in dry seasons (from March to June) for six to eight hours per day and suspends operation during rainy seasons on the assumption that the demand is low.

Interviews with villagers by the Study Team proved that they are willing to pay for the water in dry seasons, even though the income level of the people in the commune is quite low. The necessity of clean water in rainy seasons varies among villagers. Some of the villagers interviewed are aware of the importance of clean water and are willing to pay for it during the whole year, but others are not.

<Case 3: Cross Subsidy (Cay Town, Thach Ha District, Ha Tinh Province)>

The piped water scheme in Cay Town is currently under construction. The total cost is VND 1.1 billion (including house connections), financed by the state (VND 500 million), UNICEF (VND 60 million), province (VND 300 million) and users (VND 200 million). The tariff will be determined through discussions in the town's People's Committee, but is expected to be between VND 1,000 and 1,200 per m³. This level is intended only to cover the O/M costs. Each user is requested to pay VND 500,000, on average, as a cost for a house connection and a portion of main pipelines. The payment is normally divided into three installments, of which the first payment has already been made.

It was revealed in the interview with the town that cross subsidies are applied between poor and rich families: only the nominal house connection cost is charged to poor families while rich families are requested to pay more than VND 500,000, even if their houses are located

close to main pipelines.

The following are the major findings and lessons obtained from interviews.

- It is normally acceptable to limit pumping operation hours to between six and eight hours in order to save energy costs. People are accustomed to using a water tank to keep water.
- Depreciation costs (or future replacement costs of machines) are currently not taken into consideration when determining the tariff. Water supply systems are rather considered as a public good which should be provided by the government, and thus the idea of self-financing or "users' pay" is not yet common in Vietnam. To what extent users can bear replacement costs will be determined on a case-by-case basis in the later stage of the study.
- In many places, the water tariff was initially set low in order to encourage people to use clean water. This strategy should be followed, given people's poor understanding of sanitation.
- Individual meter reading is not always necessary for public taps because: 1) use of water is naturally limited when users have to carry water to their homes; and 2) water volume in each public tap would not be big enough to support an operator/reader. Rather, each public tap should be managed by a group of users. An appropriate organization will be suggested in the later stage of this Study.
- The house connection should be carefully designed when it is needed so that the suggested piped water scheme does not exclude the poor's access to water. Cross subsidies should also be considered in determining the house connection fees.

6.2 Budgetary System and Financing of Water Supply Projects

6.2.1 Expenditure Assignment

Almost a third of total government expenditure is at the local level. For investment expenditure, the central government funds and manages the planning and implementation of most projects, while the provinces are responsible for smaller-scale investments. Although there exist guidelines that prescribe which jurisdiction should be responsible for what type of project investment, the actual expenditure assignments are determined on a case-by-case basis through negotiations between the central and local governments.

Table 6.7 Expenditure Assignments for Non Salary Recurrent Items*

	Center	Province	District	Commune
Education	- Universities - National education programs	- Secondary schools	- Secondary schools - Some primary schools	- Primary schools
Health Care	- Major hospitals - National highways	- Provincial roads	- District hospital	- Commune health center
Roads	- National highways	- Provincial roads	- District roads	- Commune roads
Water	- Major irrigation (crossing provinces) - Major flood control	- Provincial irrigation (secondary canals)	- District irrigation	- Commune water supply
Social Relief	- Social policies under Central responsibility	- Social policies under Provincial responsibility		- Social activities in commune

*All salaries of civil servants across sectors are determined and paid by the central government.

(Source: Vietnam: Fiscal Decentralization and the Delivery of Rural Services, October 31, 1996, World Bank)

The operation and maintenance of large projects benefiting several provinces are undertaken by the central government while smaller projects benefiting a particular jurisdiction are basically undertaken by the individual province, district, or commune. Table 6.7 table shows the expenditure assignments for non-salary recurrent items.

6.2.2 Revenue Assignment

The central government negotiates with each province annually to determine their level of expenditure and subsequent associated revenue transfer. The transfers from the center to the province meet the agreed level of expenditure through a combination of methods. Certain small revenue sources are assigned directly to the provinces. Collections from other revenue sources are shared with the provinces. Any residual gap is filled by sharing proceeds from the turnover tax. The following table shows the assignments of taxes in 1995 (The new budget law taking effect in Vietnam from the beginning of the fiscal year 1997 fixes the assignment of tax transfers for three to five years.).

Table 6.8 Assignment of Taxes in Vietnam in 1995

Revenues Assigned to Central Government	<ol style="list-style-type: none"> 1. Special Consumption Tax 2. Profits and Depreciation of Central Enterprises 3. Revenue from Major Minerals (oil)
Revenues Assigned to Provincial Governments	<ol style="list-style-type: none"> 1. Agriculture Tax 2. Land and Housing Tax 3. Slaughter Tax 4. License Fee / Taxes 5. Registration Fee 6. Depreciation and tax on capital use and profits of commercial enterprises 7. Personal Income Tax 8. Taxes on Lottery 9. Transportation fees 10. Revenue from Forestry 11. Other minor fees and taxes
Revenues Shared Between Central and Provincial Governments	<ol style="list-style-type: none"> 1. Export –import taxes in provinces having land borders with other countries. 2. Profits Tax –100 % in 44 provinces; 50 % in 5 provinces and lower shares in the most prosperous provinces. 3. Turnover Tax –37 provinces received 100 % and the remaining received lower shares.

(Source: Vietnam: Fiscal Decentralization and the Delivery of Rural Services, October 31, 1996, World Bank)

The tax revenues indicated in the above table are transferred by the central Government to the provinces. The provinces, in turn, share tax revenues with the districts, which in turn distribute funds to the communes. Although central guidelines for sub-provincial allocations do exist, allocations to the districts and communes are determined at the provincial and district levels respectively. The center has, in practice, little knowledge or control of these decisions. Although the central government is concerned about equity and is redistributing resources to the poorer provinces, the sub-provincial allocation process is such that poorer districts and communes are not necessarily receiving adequate additional support.

6.2.3 Supplemental Revenue Sources for Localities

Communes have much more flexibility to raise revenues and determine expenditures than do provinces and districts. Since local household contributions can be authorized by local Peoples' Councils, wealthier communes with dynamic leadership may mobilize resources and provide better quality services. The ability to construct and maintain rural infrastructure significantly varies among communes. Some communes can collect fees from households to purchase supplies to construct rural infrastructure, while poorer communes often cannot obtain resources to build or maintain any facilities. This tendency is the same for the social

safety net. Since central allocations are small, some provinces provide additional funds and households provide assistance to each other. Richer provinces can supplement central government social-relief funds, but poorer provinces have greater difficulty. In all provinces, private inter-household transfers are the most prevalent form of social relief, with almost 44 percent of households receiving assistance from family or neighbors when in need (Cox, Fetzer, and Jimenez: Household Welfare and Vietnam's Transition to a Market Economy, Manuscript, 1996).

6.2.4 Budget Capacity of Localities in the Study Area

As was discussed in 5.4.1, local governments' (People's Committee) budgetary capacity is normally limited. This is also the case with the target provinces of this Study. The following table shows the 1997 annual budget of localities in the Study Area including transfer from upper localities.

6.2.5 Budget Flow for Rural Water Supply Projects

Several financing sources are conceivable for rural water supply projects in Vietnam. The largest source is the state budget. The investment budget is assigned to the Ministry of Agriculture and Rural Development (MARD) whose implementation arm is CERWASS. The cost sharing between the central government, local governments and users is determined through negotiations. The resulting arrangement varies significantly between projects since many factors such as budgetary capacity and political leadership are considered. In general, provinces that have large budgets often share some costs in rural water supply projects, while in poor provinces, commune People's Committees are obliged to make contributions. District People's Committees rarely share water supply investment costs.

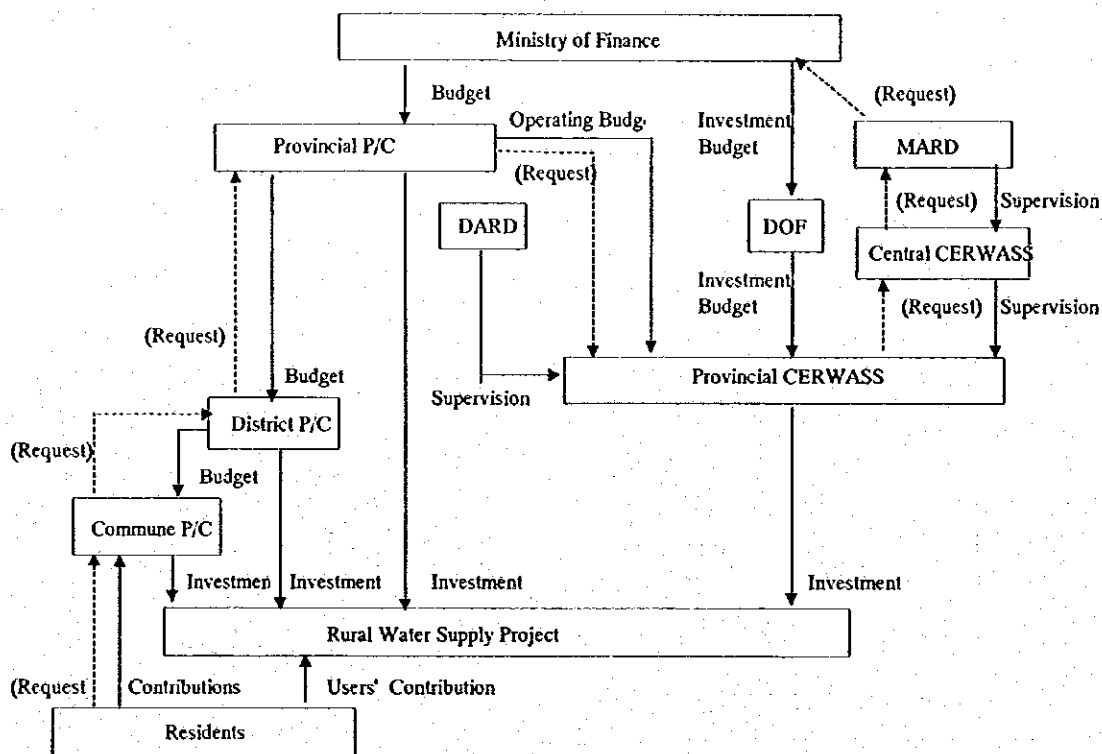
Table 6.9 Annual Budget of Localities in the Study Area including Transfer from Upper Localities (1997, VND million)

Province	Annual Budget	District	Annual Budget	Village	Annual Budget
Ha Noi	9,822,092	Tu Liem	38,309	Xuan Dinh	1,400
				Dong Ngac	1,100
Ninh Binh	312,002	Tam Diep Town	5,622	Quang Son	254
		Yen Mo	6,033	Yen Thang	539
		Nho Quan	8,581	Dong Phong	812
Thanh Hoa	525,000	Nong Cong	5,840	Nong Cong Town	575
				Van Thang	653
		Thieu Hoa	6,600	Thie Hung	546
				Thieu Do	627
		Yen Dinh	n.a.	Dinh Tuong	453
		Vin Loc	3,098	Vin Loc Town	306
Vinh Thanh	124				
Ha Tinh	388,000	Duc Tho	14,175	Duc Yen	420
				Yen Ho	328
				Trung Le	380
				Duc Xa	350
Thai Nguyen	393,748	Dong Hy	7,763	Dong Bam	170
		Pho Yen	9,581	Hoà Thuông	331
				Nam Tien	320
Thai Nguyen Town	156,033	Thinh Duc	169		

(Source: JICA Study Team)

Implementation of rural water supply projects is delegated to provincial CERWASS offices. The Ministry of Finance transfers the investment budget to provincial CERWASS offices through the Department of Finance (DOF), a local extension of the Ministry of Finance. Administrative costs of provincial CERWASS offices including staff salaries are paid by the provinces through the Department of Agriculture and Rural Development (DARD). Operation and maintenance costs for water supply projects are paid by users, although savings for future replacement is far from sufficient in most of the cases.

The following figure shows the existing budget transfer system for rural water supply projects in Vietnam.



MARD: Ministry of Agriculture and Rural Development
 DARD: Department of Agriculture and Rural Development (Provincial Level)
 DOF: Department of Finance (Provincial Level)
 P/C: People's Committee

(Source: JICA Study Team)

Figure 6.1 Budget Flow for Rural Water Supply Projects in Vietnam

6.2.6 Users' Contribution and Tariff

In piped water schemes under the UNICEF-supported WATSAN projects, users contributed some funds as part of the scheme's capital costs or provided labor for digging trenches. The house connection is not considered to be part of WATSAN program, thus only users who can afford it have their houses directly connected with a water pipe.

Villages or Commune People's Committees are the owners of the piped water scheme. These organizations designate a group of villagers to take responsibility for O/M activities, including fee collection. In poor villages, the water fee barely covers daily operation and maintenance (VND 500 per person per month, for instance). In some relatively rich villages in Ha Noi City interviewed by the Study Team, the tariff (VND 2,000 per m³) covers major repair and even part of replacement savings. Tariffs are not structured progressively, therefore a flat rate is levied in each village or commune.

The ability and willingness to pay varies significantly between different regions and socio-economic groups. The WATSAN Evaluation Report notes that in general people appear to be willing and able to pay for water access. However, the report indicates the following constraints on the introduction of improved water systems:

- People with existing household water supplies such as dug wells are reluctant to pay for improved access.
- Very poor people, such as those in remote mountainous provinces, cannot make any cash contribution to improved water systems and may find it difficult to contribute labor if this is at the expense of agricultural production.
- People are generally willing to pay the VND 0.5 to 1 million cost of a house connection to a piped scheme, but these schemes are usually in the more affluent and developed areas of the commune near main roads.
- There seem to be mixed opinions on water tariffs for piped water (VND 1,500 to 4,000 per m³). Some people consider it expensive whereas others consider it reasonable.

6.3 Possibility of Rural Credit for Piped Water Schemes

Water supply schemes need certain contributions from water users, either in cash or labor. NRWSS report suggests that rural credit would enable water users to make a cash contribution when they do not have enough savings.

Vietnam has three formal financial institutions operating in rural areas: Viet Nam Bank for Agriculture and Rural Development (VBARD), Viet Nam Bank for the Poor (VBP) and People's Credit Funds (PCFs). Mass organizations are also playing a role to link official financing to local needs. The NRWSS report suggests the possibility of using VBARD to finance water supply projects in rural areas and solicits international donors to support the Bank for this purpose. In this section, an overview of rural credit institutions/means will be presented and the possibility of using each source to finance water supply schemes will be discussed.

<Viet Nam Bank for Agriculture and Rural Development (VBARD)>

VBARD is a government-owned bank separated from the agricultural credit department of the State Bank in 1990. It is the largest provider of financial services in rural areas with an extensive national branch network comprising over 2,500 outlets. At the end of 1996,

VBARD had VDN 16,929 billion (US\$ 1.4 billion) in loans outstanding, of which more than 50 % was extended to rural households. Lending rates are regulated by the government: 1.0 % per month for short-term loans and 1.1 % per month for medium-term loans. The bank is mostly dependent on deposits from public, rather than on re-discount facilities at the State Bank of Viet Nam (SBVN). Interest rate regulation also limits the bank's profitability and discourages longer-term lending. Numerous management, accounting and reporting deficiencies have been highlighted in the diagnostic report prepared by an international accounting firm, while the real amount of non-performing loans is not known due to lack of transparency in its operations.

VBARD's activities are not directed at poor households because of its limited outreach at the commune level. The poor are not willing to visit the district branches to borrow a small amount of money. Moreover, most of VBARD's loans are extended to income-generating productive sectors and a small number of consumption loans are provided only to salaried clients possessing collateral with 80 % of the loan value. No loans have been made to water supply facilities.

<Viet Nam Bank for the Poor (VBP)>

VBP, a government-owned non-profit bank, started operations in 1996. It has a special mandate to provide credit to the poor, who are defined as having an income less than what is required for subsistence. The capital is mobilized from various sources, including the central and provincial government budgets, SBV, VBARD, and foreign assistance. VBP offices are currently housed in VBARD district branches, and VBP staff are almost wholly seconded from VBARD. After one year of operations, VBP had 1.3 million borrowers at the end of 1996, with total loans of VND 1,796 billion (US\$ 147 million). This strong performance results from its subsidized lending rates—currently controlled at 0.8 % per month—and its links with VBARD and mass organizations such as Viet Nam Women's Union (VWU) and Farmers' Association. Loans are normally limited to about US\$ 220 per family, and collateral is not required. VBP's loan portfolio is highly concentrated in agriculture and livestock, while no lending for water supply/sanitation has been made.

The financial viability of VBP is questionable and the bank's operation is far from transparent. The mass organizations and People's Committee cadres acting as partners for VBP are poorly trained. Loan terms are quite long, often carrying a two to three year term. The principal is often paid in one lump sum at the end; it is highly possible that VBP will become insolvent when the first group of these loans are proved to be non-performing at the maturity date. The large multilateral lenders are requesting VBP to produce an acceptable

policy manual detailing how the bank will reach the poor while also achieving financial sustainability. To date, however, no acceptable policy manual has been created.

<People's Credit Funds (PCFs)>

PCFs are a network of commune-level credit unions established by the State Bank in 1993. Each PCF is owned by share-holding members. PCFs are under the supervision of SBV and receive technical assistance from Desjardins Development International, a Canadian cooperative banking movement. At the end of 1996, over 395,000 people were members of 861 PCFs in 48 provinces. These members have provided VND 683 billion (US\$ 56 million) in savings and PCF's loans outstanding were around VND 1,042 billion (US\$ 86 million). Given the short time the PCFs have been in operation, these figures are quite encouraging. Interest rates are commercial-based: lending rates are currently 1.5 % per month while deposit rates vary between 0.4 % per month (demand) and 0.7 % (six month fixed term). Almost all loans are short-term (up to 12 months), while no lending is made to non-productive sectors.

PCFs are located close to commune clients and its loan approval process is relatively fast. PCFs do not necessarily focus on the poor since they are shareholding banks requesting the purchase of a qualification share, VND 30,000. Control and monitoring of the PCFs by SBVN is informal, and an adequate system has yet to be developed. PCFs have great potential for further growth especially because they are mobilizing savings from the rural population. However, continued rapid growth could overburden the limited training and supervisory capacity of SBVN, leading to a decline in program quality and an increased risk of collapse among PCFs.

<Mass Organizations>

Mass organizations actively involved in rural credit field are: the Vietnam Women's Union (VWU), the Vietnam Peasants' Association (VPA), the Veterans Association and other Vietnam NGOs. Among others, the Women's Union has worked extensively with international NGOs, as well as multi- and bi-lateral donors such as UNICEF and UNFPA. The following table shows the credit activities by mass organizations.

Although the achievement of the Women's Union is quite encouraging, it is premature to say that the Women's Union provides a reliable source of credit to the rural poor. Although its members are highly motivated and eager to work for the improvement of rural life, no thorough examination of the organization has been carried out and transparency in its operations is by no means guaranteed. Intensive training and monitoring will be needed by

the Women's Union in order to ensure sound and viable operations in rural credit.

Table 6.10 Mass Organization Credit Activities 1995

Organization	Number of Credit Groups	Number of Borrowers (Households)	Credit (VND billion)	Share of Delinquent Loans
Women's Union	82,032	803,534	1,607	0.65 %
Peasants' Association	67,117	597,670	1,315	0.57 %
Youth Association	1,685	54,333	0.8	0.1 %
Other Organizations	9,536	207,293	153	0.03 %

(Source: Overview of Rural Finance in Vietnam, December 1996, FAO)

<Conclusions>

In this study, either labor or cash from savings (or borrowed funds from relatives or friends) will be expected from users as their contribution to piped water schemes. Rural credit will not be taken into account as a means of financing piped water schemes for the following reasons:

- In the subsistence economy, priority for rural credit is given to productive sectors. Since the demand for rural credit still highly exceeds its supply in Vietnam, official financial institutions operating in rural areas do not provide credits for water supply.
- Rural water supply credit is quite difficult to establish due to its small individual size and the beneficiaries' low income level. Since water supply facilities do not generate a new cash income, the borrower's current income is the only indicator of repayment ability. However, if a person's current income is large enough to guarantee the repayment, the person naturally has enough savings to pay for water supply facilities. This tendency was observed in the suburbs of Hanoi City. On the other hand, most poor people do not have a regular income and therefore would not be eligible for consumption loans.
- Poor people would rather resort to informal financing through friends or relatives when a cash contribution is requested, since the repayment conditions would be more flexible than formal financing.
- As was discussed in this section, the viability of the financial institutions operating in rural areas is doubtful. Management of these institutions needs be strengthened and accountability enhanced before the extension of their operations to rural water schemes is considered.

6.4 Affordability and Willingness to Pay

The level of income and consumption can be used to assess users' capacity to pay water charges. However, more attention should be paid to the consumption level, since not all income is traceable in the rural areas. Households in the Study Area use firewood, coal or rice stubble as fuel, while electricity is mostly used for lighting, ironing, and TVs. Thus in this Study, it is assumed that people can afford at least the same amount of charge for water as that they pay for electricity, a good that is secondary in importance to food or fuel. The following tables show the average income and amount of money spent for electricity and other fuels in the twenty Study Area communes. The data was obtained from two sources: statistics at Commune People's Committees and the household questionnaire survey done by the Study Team.

Table 6.11 Average Income and Electricity Charges in the Study Area Communes, 1998

Province	Commune	Household Average Income ('000 VND) (a)	Electricity Charge ('000 VND) (b)	(b) / (a)
Ha Noi	Xuan Dinh	17,280	600	3 %
	Dong Ngac	5,520	600	11 %
	Average	11,400	600	5 %
Ninh Binh	Quang Son	4,560	300	7 %
	Yen Thang	5,340	120	2 %
	Dong Phong	8,350	240	3 %
	Average	6,083	220	4 %
Thanh Hoa	Nong Cong Town	7,200	420	6 %
	Van Thang	6,740	180	3 %
	Thie Hung	11,000	420	4 %
	Thieu Do	14,000	n.a.	n.a.
	Dinh Tuong	10,080	730	7 %
	Vin Loc Town	7,770	840	11 %
	Vinh Thanh	8,050	180	2 %
	Average	9,263	462	5 %
Ha Tinh	Duc Yen	7,220	120	2 %
	Yen Ho	6,570	130	2 %
	Trung Le	5,600	130	2 %
	Duc Xa	7,430	120	2 %
	Average	6,705	125	2 %
Thai Nguyen	Dong Bam	10,250	420	4 %
	Hoa Thuong	4,800	480	10 %
	Nam Tien	4,800	n.a.	n.a.
	Thinh Duc	10,000	300	3 %
	Average	7,463	400	5 %
Study Area Average			320	4 %

(Source: Commune People's Committees)

Table 6.12 Average Income, Electricity Charges and Other Fuel Cost in the Communes in the Study Area, 1998

	Commune	Number of Respondents	Household Average Income ('000 VND) (a)	Electricity Charge ('000 VND) (b)	(b) / (a)	Other Fuel Cost / (a)
Ha Noi	Xuan Dinh	60	8,800	820	9 %	4 %
	Dong Ngac	82	7,380	460	6 %	5 %
	Average		8,090	640	8 %	5 %
Ninh Binh	Quang Son	32	7,430	190	3 %	4 %
	Yen Thang	44	5,460	246	5 %	5 %
	Dong Phong	34	9,470	300	3 %	6 %
	Average		7,453	245	3 %	5 %
Thanh Hoa	Nong Cong Town	24	7,980	380	5 %	6 %
	Van Thang	22	4,260	100	2 %	3 %
	Thieu Hung	36	4,530	250	6 %	6 %
	Thieu Do	30	5,020	291	6 %	7 %
	Dinh Tuong	24	10,080	320	3 %	4 %
	Vin Loc Town	17	5,500	230	4 %	11 %
	Vinh Thanh	33	4,110	230	6 %	14 %
	Average		5,926	257	4 %	7 %
Ha Tinh	Duc Yen	26	5,620	270	5 %	7 %
	Yen Ho	26	7,670	190	2 %	4 %
	Trung Le	17	5,370	190	4 %	3 %
	Duc Xa	24	6,850	210	3 %	6 %
	Average		6,378	215	3 %	5 %
Thai Nguyen	Dong Bam	14	9,810	400	4 %	3 %
	Hoa Thuong	28	6,720	340	5 %	5 %
	Nam Tien	24	6,360	220	3 %	4 %
	Thinh Duc	6	6,260	280	4 %	n.a.
	Average		7,288	310	4 %	4 %
Study Area Average			6,734	296	4 %	5 %

(Source: Household Questionnaire Survey, JICA Study Team)

The average electricity payment ranges from VND 100,000 (Van Thang Commune) to VND 820,000 (Xuan Dinh Commune). The Study Team's survey results indicate that roughly 2 to 5 % of household income is used for electricity consumption in the Study Area.

Use of iron removal devices to purify well water was observed in 11 communes in the Study Area. Since the users are replacing the sand in the device with new sand one to two times per month, it can be said that they can at least afford the same amount of money for water charges. Table 6.13 shows the averaged expenses that rural people are making in the 11 communes.

Table 6.13 Cost of Iron Removal and Sand Replacement, 1998

Province	Commune	Number of Owners out of Respondents	Average Cost of Iron Removal	Sand Replacement Cost (per month)
Ha Noi	Xuan Dinh	5/60	200,000	3,000
	Dong Ngac	8/82	240,000	8,000
Ninh Bing	Yen Thang	12/44	130,000	6,000
Thanh Hoa	Nong Cong Town	4/24	370,000	15,000
	Thieu Do	14/30	90,000	2,000
	Dinh Tuong	17/24	370,000	13,000
	Vin Loc Town	3/17	220,000	5,000
Ha Tinh	Duc Yen	22/26	230,000	5,000
	Yen Ho	23/26	320,000	13,000
	Trung Le	8/17	500,000	13,000
	Bui Xa	13/24	370,000	13,000
Average			280,000	9,000

(Source: Household Questionnaire Survey, JICA Study Team)

The monthly sand replacement cost ranges from VND 4,000 (Thieu Do Commune) to VND 30,000 (Nong Cong Town Commune). Since iron removal is not necessary if the project is implemented, users should be able to pay at least the same amount for water charges.

Most of the residents in the Study Area have a dug well or a bore-hole that was constructed between 1980 and 1998. The average cost of a dug well or a bore-hole ranges from VND 450,000 (Van Thang Commune) to VND 2,220,000 (Quang Son Commune), representing 6 % (Dinh Tuong Commune) to 33 % (Vinh Thanh Commune) of household income, as shown in Table 5.4.14. Since water users are expected to pay for a house connection in the

pipe-water scheme, it is envisaged that they would agree to pay at least the same amount of money if a cleaner water supply is available.

Table 6.14 Average Cost of Dug Well or Bore-hole, 1998

Province	Commune	Household Average Income ('000 VND) (a)	Average Cost of Dug Well or Bore-hole ('000 VND) (b)	(b) / (a)
Ha Noi	Xuan Dinh	8,800	1,020	12 %
	Dong Ngac	7,380	720	10 %
	Average	8,090	870	11 %
Ninh Binh	Quang Son	7,430	2,220	30 %
	Yen Thang	5,460	640	12 %
	Dong Phong	9,470	580	6 %
	Average	7,450	1,150	15 %
Thanh Hoa	Nong Cong Town	7,980	860	11 %
	Van Thang	4,260	450	11 %
	Thieu Hung	4,530	620	14 %
	Thieu Do	5,020	770	15 %
	Dinh Tuong	10,080	610	6 %
	Vin Loc Town	5,500	790	14 %
	Vinh Thanh	4,110	1,340	33 %
	Average	5,930	780	13 %
Ha Tinh	Duc Yen	5,620	980	17 %
	Yen Ho	7,670	900	12 %
	Trung Le	5,370	930	17 %
	Duc Xa	6,850	1,670	24 %
	Average	6,380	1,120	18 %
Thai Nguyen	Dong Bam	9,810	830	8 %
	Hoa Thuong	6,720	810	12 %
	Nam Tien	6,360	480	8 %
	Thinh Duc	6,260	870	14 %
	Average	7,290	750	10 %
Study Area Average		6,734	910	13 %

(Source: Household Questionnaire Survey, JICA Study Team)

Table 6.15 Expected Price of Piped Water by Commune Residents (1998)

Province	Commune	Number of Respondents	Expected Price of Private Tap Water ('000 VND/family/month)	Number of Respondents	Expected Price of Public Tap Water (10m to 100m) ('000 VND/family/month)
Ha Noi	Xuan Dinh	38	27	20	21
	Dong Ngac	0	n.a.	0	n.a.
Ninh Binh	Quang Son	16	63	13	33
	Yen Thang	12	20	12	28
	Dong Phong	34	21	34	17
Thanh Hoa	Nong Cong Town	0	n.a.	0	n.a.
	Van Thang	12	9	14	8
	Thieu Hung	32	11	34	10
	Thieu Do	9	20	9	21
	Dinh Tuong	16	8	18	4
	Vin Loc Town	1	12	1	13
	Vinh Thanh	2	15	3	n.a.
Ha Tinh	Duc Yen	0	n.a.	0	n.a.
	Yen Ho	0	n.a.	0	n.a.
	Trung Le	0	n.a.	0	n.a.
	Duc Xa	0	n.a.	0	n.a.
Thai Nguyen	Dong Bam	7	32	6	19
	Hoa Thuong	10	6	9	5
	Nam Tien	21	16	21	11
	Thinh Duc	3	22	1	13

(Source: Household Questionnaire Survey, JICA Study Team)

CHAPTER 7

FINDINGS ON EXISTING O&M



CHAPTER 7 FINDINGS ON EXISTING O&M

7.1 Assessment of Operation and Maintenance Functions

7.1.1 Water Supply Facilities in Thai Nguyen Province

In 1996 Dong Hy District town PC bought a water work with biological treatment by a nearby cement factory/quarry company. UNICEF provided the piping system. The plant was built in 1970 and in a very bad condition. The biological filter did not function and the chlorine injection system had not been in operational use for several years.

Although the operators have been responsible for O&M since construction was completed, they have never changed or maintained the filter. The water quality was low with a high concentration of coliform bacteria infiltrated at the surface water intake.

A simple and low-cost water supply system was completed in La Hien Commune (Dong Hy District) in the beginning of 1999. Water source is a natural spring and no purification is applied, only a filter to reduce sand to the system. The O&M requirements are kept to a minimum and delegated to selected household close to where the concrete water reservoir have been constructed. The village head has the overall responsibility for O&M and for collecting a flat water fee of VND 1,000 per month from each household. The amount covers recurrent O&M costs.

The system has only been operating for a short time. So far the consumers were satisfied and the system was operating very well. Compared to the water works in Dong Hy District town, the technology of this water supply system seems to match the O&M skills of the community.

7.1.2 Water Supply Facilities in Hanoi Rural Area

The water work contains a treatment plant with aeration tower completed in 1997. The operator was trained by CEWRWASS on how to O&M the plant. He has a background as an army technician —now retired. The second operator has a similar background. None of the operators or commune people did participate in the construction of the plant.

The plant seems to be in good technical condition and the operator was able to demonstrate a number of O&M function on request. The technology applied is simple and no chlorine injection is applied. Although O&M monitoring, recording and reporting can be improved

the operator seems to be able to perform his functions well. The major problem is that the capacity of the filter is limited and no control of water quality is made. Households visited were satisfied with the amount of water supplied (7 hours per day plus household water tank).

7.1.3 Water Supply Facilities in Ninh Binh Province

Two facilities were visited in Gia Viên District. In Gia Hoa Commune the construction of the treatment plant and piping system was started in 1997 and completed in April 1999 but not yet put in operation. An assessment of O&M was therefore not possible. On the other hand it was possible to address technology issues and the skills of the operator as he was already in place. The treatment plant is to use a combined biological/mechanical system with post treatment using chlorine gas injection. The treatment plant needed to be modified after construction completed. If this was due to faults made by the constructor or design did not meet required specifications is not clear.

So far the operator had only received initial training and was not aware of the danger related to the use of chlorine gas injector if not operated properly. Regular back-washing of the sand filter will be required and a complete understanding of the treatment process is necessary to utilize the potentials of the plant. UNICEF will arrange training for all operators in the province during 1999. It is the impression of the Study Team that more specialized training should be provided if sufficient quality of O&M is to be maintained.

The water supply facility established in Gia Sinh is only operating 4 hours every second day during rain season and 4 hours each day during dry season. The water work was completed in April 1999 and presently serving only 135 households out of 1,550. The main problem of the water supply system seems to be the lack of understanding financial management at PC level as well as there exists a large number of illegal household connections which is jeopardizing the financial sustainability of O&M operations. As the system just recently was completed, no major critical O&M issues were discovered. However, some parts of the trenches the distribution pipeline had not been covered with soil. The people in the village also expressed worries about cracks in the storage tank overlooking the village.

7.1.4 Conclusion

In terms of the physical facilities concerned, there is a need for improved skills and procedures connected to O&M. The training of operators are in most cases not initiated until construction has been completed. Experience also shows that training sometimes only conducted randomly and a long time after the plants systems are completed. Very seldom the

operators have been participating in the construction of the plant and pipe system and therefore do not have the fully understanding of the production process and related O&M requirements.

7.2 Overall Management of Water Supply Systems and the Role of PC

Overall management is confined to the owner of the water supply system e.g. the Commune PC. This function includes among other things to decide on people's contribution during construction and water fees to cover O&M costs. Meter reading and fee collection is considered to be part of the O&M organization and not addressed here.

It occurs that financial skills in terms of calculation of costs and fees at Commune PC level in many cases is in great demand. Very often water fees as based on consensus among the users or/and what is applied in other communes rather than the actual costs of O&M. In some of the communes visited, fees collected did only cover the salary of the operator and not other O&M cost like electricity. Depreciation/renewal funds had not been introduced in any of the communes visited. In case of breakdown funds for new parts is likely to be taken from the PC budget if possible. In cases, costs are too high or funds not available, the part will most likely not be replaced unless donated from other source. In this case the chances of reduced production or complete halt will be overwhelming.

An other issue is the PC ability to attract more household connections. In those commune visited, no campaigning were done to increase house connections and thereby improving the financial sustainability of the system. Increasing the number of customers will also benefit the customer by dividing the recurrent O&M cost on more users and thereby the possibility of reducing water fees.

Other issues related to overall management is monitor O&M including water quality and provide guidance and assistance according to need. If the PC can not provide assistance in specific cases, external assistance is to be called upon.

7.3 Overall O&M Support

CERWASS is to provide services such as support to community planning/feasibility study, design, and supply of materials and equipment. Training is also provided for O&M staffs of

the water supply system, including tariff calculation and fee collection methods. This training is often conducted in connection with the handing over procedures.

It is the impression that a very supply-driven approach is applied in many of the projects. Very often it seems that the commune people tend to be told what to do instead of asked what they want. Focus seems also to be more towards technical matters of O&M than the financial and managerial issues of O&M. This may in the long run jeopardize the sustainability of a water supply system.

UNICEF (and other agencies) restrict itself to financing and overall guidance. In some cases training is provided within different aspects of community management. These sessions are generally not tailor-made to meet specific project needs, but often conducted for wider target groups. Facilitation/training is often done by different unions applied as a training-of-trainer event by UNICEF.

Construction/drilling is done either by the users themselves or by private or state companies.

Continuing O&M support is to be provided by provincial CERWASS. This is, however, not done in a structured way. In many cases it seems that after construction has been completed to the CPC (and the communes) are more or less left on their own to operate and maintain the facilities after a short and hand-over procedure.

Access to spare parts is in most cases not too difficult (if funds are available) if Vietnamese standards or equipment is used and can be found locally.