

Lessons Learned from Rural Water Supply Projects in the Philippines

Identifying Elements of Sustainability

Evidence-Based Recommendations

This Field Note describes a study of the performance and sustainability of eight major rural water supply projects undertaken in the Philippines over the last decade. The lessons learned from the study include the importance of community involvement, local government capacity building, cost recovery, and targeting the poor.



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Executive Summary

A flood of aid during the international decade for water supply and sanitation (1980-89) failed to provide universal access to safe water for all Filipinos. At the end of the decade less than 5 percent of the planned systems remained in operation, forcing national attention on the issue of service sustainability. In response, a new generation of rural water supply projects emerged during the 1990s. These included eight major donor-funded projects that experimented with new approaches to financing and implementation. In 2003 a study by the Water Supply and Sanitation Performance Enhancement Project (WPEP) assessed the sustainability and performance of these projects. Overall, the findings of the study suggest that projects with significant investments in capacity and institution building produced the most sustainable rural water supply systems. It also showed unequivocally that the involvement of the local government and communities aids the preparation, planning, implementation, and management of such systems, and that sustainability is improved when these processes are monitored by external agencies. The study suggests that the success of projects will require strengthening local capacity and building institutions to operate and maintain systems, developing mechanisms for cost recovery, explicitly targeting the needs of the poor, and providing more incentives for local investment.

Introduction

From 1978 to 1990, 11 major rural water supply projects were undertaken in the Philippines, totaling more than US\$120 million. Toward the end of this period, the government estimated that there were only 4,400 functioning rural water supply systems in the country, which was about 5 percent of the 96,200 systems required to provide the rural population with

adequate water services. These planning data revealed that rural water supply systems were falling into disuse and disrepair almost as quickly as they were built.

During the 1990s the rural water sector changed significantly. Responsibility for the development of local water supply and sanitation services devolved from the central to the local government, and there

was also a substantial decrease in the level of central government funding available for rural water supply.

Against this backdrop, eight major rural water supply projects were initiated in the 1990s (see Figure 1), using various new financing and implementation approaches for rural water supply. This new generation of projects tried to secure commitment and sustainability by requiring capital contributions from communities and local governments. The projects also invested more heavily in “soft” components, such as institutional strengthening, capacity building, community-based planning, and health and hygiene promotion.

The Water Supply and Sanitation Performance Enhancement Project (WPEP), an action research project in the Philippines (see Box 1), commissioned a field-based study, “Rural Water: Models for Sustainable Development and Sector Financing,” which assessed the performance and sustainability of 15 rural water supply systems implemented under these eight projects.¹ The lessons learned were then used to make recommendations for the design of ongoing and future projects and to suggest changes in the national framework for the rural water sector. This Field Note provides a summary of the WPEP study.

Background

Per capita income in the Philippines is lower than the regional average in East Asia and the Pacific. Recently, growth in

Figure 1: The eight major rural water supply projects undertaken in the 1990s

Project	Supporting Agency	Project cost (US\$)	Planned schemes (Number)
Agrarian Reform Communities Development Project and Community Project (ARCP)	WB	3.9M	54
Central Visayas Water and Sanitation Project (CVWSP)	AusAID	28M	507
First Water Supply Sewerage and Sanitation Sector Project (FW4SP)	WB	85M	6,500
Institution Building for Decentralized Implementation of Community Water Supply and Sanitation Project (WATSAN)	UNDP	1.5M	148
Poverty Alleviation Fund II Potable Water Development and Sanitation (PAF2)	GoP	11M	4,100
Rural Water Supply and Sanitation Sector Project (RW3SP)	ADB	57M	1,200
Rural Water Supply and Sanitation Project—Phase IV (RWS4)	OECF	9.0M	3,000
Second Island Provincial Water Supply and Sanitation Project (SIPRWSSP)	ADB	27M	2,300

WB = World Bank; OECF = Overseas Economic Cooperation Fund of Japan; ADB = Asian Development Bank; GoP = Government of the Philippines; AusAID = Australian Agency for International Development; UNDP = United Nations Development Program Source: Test Consultants, Inc. (2003)

the agricultural sector has also been minimal. Despite the relatively small rural population, more than 60 percent of the poor live in rural areas.² In addition, population density and population growth are about double the average for the region, making both natural resource management and environmental issues increasingly critical.

Basic policies for the water supply sector in the Philippines were first established in 1978. Universal water supply coverage was declared a policy of the state, to be brought about through:

- Rationalization of the organizational structure of the water supply sector

- Formation of water districts, associations, cooperatives, or corporations for the construction, operation, and maintenance of water supply systems (in preference to systems directly operated and managed by local governments)
- Encouragement of self-help and self-sustaining water supply projects.

The Department of Public Works and Highways (DPWH) was given responsibility for the construction of wells and spring development in rural areas, while the Department of Local Government and Community Development (DLGCD) was charged with the formation and support of the water associations and cooperatives

needed to operate and maintain these water supply systems.

The Rural Water Supply and Sanitation Master Plan of 1988 suggested that 81,900 rural water supply systems needed to be installed by 1991 to complement the 4,300 systems in place.³ Therefore, the plan directed the DPWH to “undertake the construction of water wells, rainwater collectors, development of springs, and rehabilitation of existing water wells in all *barangays*⁴ in the Philippines in such number as may be needed and feasible, taking into consideration the population, hydrologic conditions, project development and operational costs, financial and economic factors, and institutional arrangements.”

²Philippines, National Statistics Office (1999)

³Philippines, National Economic and Development Authority (1988)

⁴Barangay is a village and is the smallest political unit in the Philippines.

These projects combined funding from two or three sources—national governments, local government units, and water users association...but were not necessarily providing the levels of service that communities required.

There are three levels used to designate water systems in the Philippines (see Box 2). As part of the 1988 plan, the DPWH planned to increase the number of Level I systems by 96,200, so as to completely close the demand gap by 1991. The plan specified that each barangay in the country would receive at least one additional potable water source until about 100,000 rural water supply facilities were installed. The funds were to come from the annual appropriations for the DPWH and from financial grants and concessional loans extended to the Philippines. In order to ensure the proper operation and maintenance of each new

water facility, local water users associations were formed. These included barangay waterworks and sanitation associations, community-based organizations, and water cooperatives. The DPWH was to train them in the operation and maintenance of the water facility prior to handing over management. The associations' members were to pay minimal charges to cover the maintenance and normal repairs of the water facilities and in some cases a small percentage of capital costs.

Eight major rural water supply projects were implemented between 1990 and

1998, each using the combined funds from two or all of the following three sources—national governments, local government units (LGUs),⁵ and water users associations (see Figure 2). The first three projects began between 1990 and 1991 and included no financing from LGUs. In these early projects, the national government typically provided grants equal to 90 to 100 percent of the total project cost. The remainder (a maximum of 10 percent) was provided by the community through its water users association in the form of voluntary labor, donated land, or cash contributions. Any costs associated with expanded levels of service, such as water treatment or more complex distribution systems with house connections, were to be borne wholly by the community.

After the devolution of 1991 (see Box 3), LGUs were asked to make a contribution toward project costs. In two of the larger projects (PAF2 and RW3SP), LGUs were asked to match the 10 percent of total project costs contributed by the water users associations, thus allowing the national government to reduce its grant to 80 percent. However, three other projects (CWSP, WATSAN, and ARCP) adopted a more radical approach. Community contributions were reduced to zero, and all project costs were met by the national and local government. The LGU share of capital expenditures ranged from 10 to 52 percent, and they also had far greater involvement in implementation.

The national policy for rural water supply evolved even further in the last few years. The 2002 guidelines from the National Economic Development Authority (NEDA)

Box 1: THE WATER SUPPLY AND SANITATION PERFORMANCE ENHANCEMENT PROJECT (WPEP)

WPEP is an action research project in the Philippines that is jointly funded by the Government of Australia through the Australian Agency for International Development (AusAID), the Water and Sanitation Program of the World Bank (WSP), and the Government of the Philippines. The executing agency for the government is the Water Supply and Sanitation Program Management Office of the Department of Interior and Local Government, with support from the WSP–East Asia and the Pacific (WSP-EAP). The goal of the project is to enhance the access of the underserved rural and urban poor to adequate water and sanitation services on a sustainable basis.

The WPEP action research agenda is demand-driven through consultation with a broad range of water supply and sanitation sector practitioners in the Philippines. In Phase I of the project, WPEP funded six background studies, which provided the basis for the learning agenda. Following consultation with sector stakeholders on these studies, Phase II of the project commissioned local consultants to undertake four field-based studies on the following topics:

- Small towns water supply management models
- Urban sewerage and sanitation
- Small-scale water providers
- Sustainable development and sector financing for rural water models

This Field Note is one of a series summarizing the results of this research program.



In-kind contributions often mean that local elites donate surplus land in return for privileged access, while poorer households are pressured into providing free labor

recommend a relatively sophisticated cost-sharing scheme between the national government and the LGUs.⁶ Under these new rules, the national government grants for rural water supply have been reduced significantly, varying between 20 and 50 percent depending on the income class of the LGU and the level of service provided. This reduction in direct funding by the national government has been offset by considerable increases in the allocation of resources to local governments, thus provincial and municipal LGUs are now expected to contribute the majority of the remaining costs of the provision of rural water supply. The policy does not refer to community contributions.

Assessing Performance

In 2003, WPEP completed the study “Rural Water: Models for Sustainable

Development and Sector Financing.” The study team selected 15 rural water supply systems implemented under the eight major projects (listed in Figure 1) as representative case studies. The team analyzed these cases using three data collection methods—methodology for participatory assessment, household survey, and specialist appraisal. The specific objectives of the study were to:

- Examine users’ preferences for different types of services, willingness and capacity to pay, perceptions on participating in water users associations, and satisfaction with services
- Assess responses to the various financing policies of the rural water supply projects
- Assess the sustainability of the selected rural water supply systems
- Use the findings to make recommendations on the design for

ongoing and future projects and for changes in the national policies and institutional frameworks for the rural water sector.

Selection of suitable case systems proved challenging. A sampling framework was used to ensure that the cases included a mix of different project rules, levels of service, and geographical variation. Project records were examined to select suitable sites but it soon became apparent that the situation on the ground was very different from that in the records. The field teams found that most of the systems they visited were no longer operational, some of the systems did not have any formal management organizations, and beneficiary communities had often received funding and assistance from so many different sources that the users could no longer remember which systems or parts were provided by which project. Only 5 of the original 15 cases selected from the project records met the sampling criteria. In several instances, the field teams had to visit more

Box 2: LEVELS OF WATER SYSTEMS IN THE PHILIPPINES

- Level 1—Stand-alone water points, including shallow wells, handpumps, or rainwater collectors
- Level 2—Piped water supply with a communal water point, such as spring system or borewell
- Level 3—Piped water supply with a private water point, such as a house connection

⁶Philippines, Department of Finance (2002)

Some of the systems visited did not have formal management organizations, and communities had often received funding and assistance from so many different sources that the users could no longer remember which systems or parts were provided by which project.

than 10 alternate schemes before finding an operational system with a formal management organization. However, eventually 15 suitable case study systems were found (see Figure 3).

Findings

The study examined a number of diverse issues but only some of the major findings are featured in this summary. The following include the most significant findings regarding performance and sustainability or results that proved to be contrary to the assumptions that underpinned the original design of the projects.

Overall Sustainability

The team used the methodology for participatory assessment⁸ to gather data from users on their perceptions of the sustainability of the selected systems. Using this method, an assessor, together with individuals from the community, assessed sustainability in terms of system quality, effective functioning, effective financing, and effective management. To give a score for overall sustainability, the team then aggregated the scores and combined these with the score given for effective use (whether the project had any impact on well-being and poverty) (see Figure 4).

Specialist appraisals were also employed to make ratings of the overall sustainability of the case study systems. This included technical, financial, institutional, and social sustainability. A multidisciplinary team of

five specialists appraised each water supply system using data collected from key informant interviews with several stakeholders—water users; representatives from various technical, financial, and national agencies; and staff from LGUs. Using the data, the specialists rated each system according to the four dimensions of sustainability and then scaled and aggregated the scores in order to create an overall sustainability rating (see Figure 5).

While the methodology for participatory assessment and the specialist appraisal provide different scales to measure the overall sustainability of the case studies,

several cases from two of the projects stand out in both assessments:

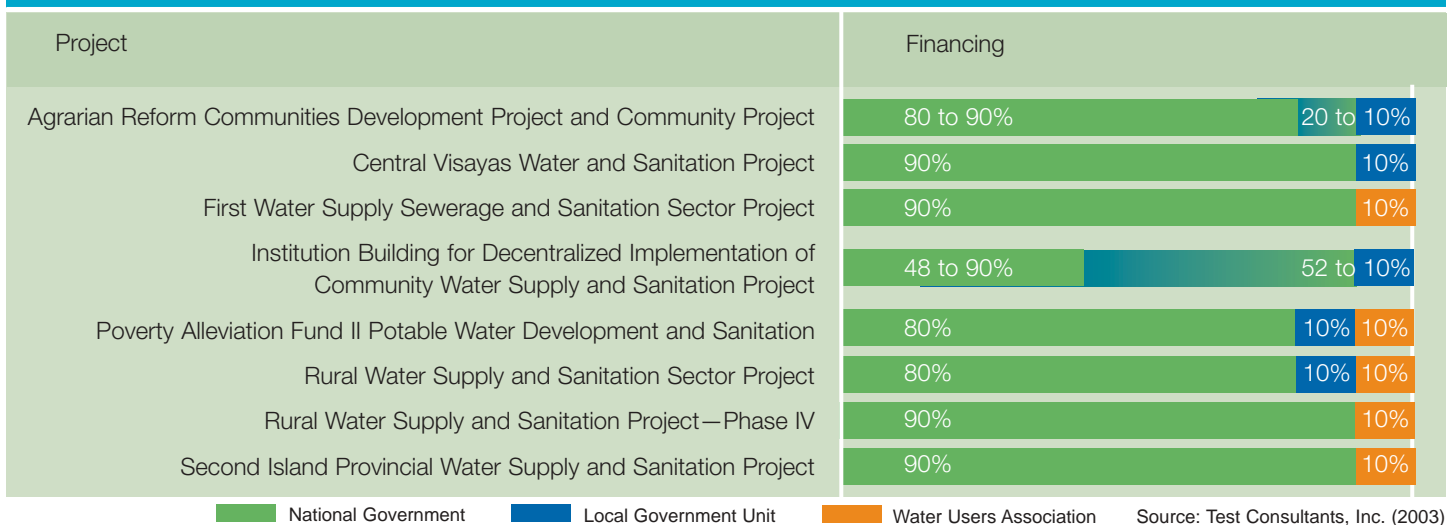
- The Kibudtungan Barangay Waterworks and Sanitation Association from the WATSAN project ranks first using the methodology for participatory assessment and second using the specialist appraisal.
- The four systems studied under the CVWSP rank in the top six using the methodology for participatory assessment, and three of the four cases rank in the top five using the specialist appraisal.

Box 3: DEVOLUTION FOLLOWING THE 1991 LOCAL GOVERNMENT CODE⁷

The implementation of the 1991 Local Government Code (LGC) triggered a process of political and administrative devolution that brought major changes to the governance structure of the Philippines. The LGC transferred powers and responsibilities from the central government to the LGUs, including primary responsibility for the development of water supply and sanitation services. This process was also accompanied by large increases in the incomes of the LGUs. A large change was that LGUs were now required to share the installation costs for rural water supply systems, while responsibility for system implementation was transferred from the central agencies to the provincial and municipal governments.

Under the LGC, national agencies were supposed to improve coordination of national government policies and programs and provide adequate technical and financial assistance to less-developed LGUs. The Department of Interior and Local Government (DILG) was supposed to develop national water supply programs. The DPWH was meant to provide technical assistance in design and operation and maintenance to local governments. The Department of Health (DOH) was designated as responsible for the promotion of public health and hygiene and monitoring of water quality. However, the reality today is that most national agencies have not changed their roles substantially. For instance, the DPWH still performs engineering and construction functions, such as well drilling and spring development, although now for locally funded projects.

Figure 2: Distribution of financing by project



The WATSAN and CWSP projects had a great deal in common. Both were relatively small projects, implemented largely by LGUs rather than national agencies. Both invested heavily in building institutions and capacity, and encouraged LGU and community involvement in the planning, construction, and management of the systems. Both also included regular monitoring of the operation and maintenance of their water supply systems through provincial planning and development officers.

Most of these features did not belong to projects with cases rated as “marginally sustainable” or “unsustainable” in the specialist appraisal. These less-successful cases are generally part of large, centrally implemented projects (for example, FW4SP, RWS4), which spent little on institution building and rarely involved LGUs or communities in

planning, implementing, or monitoring their water supply schemes.

Access to Water Supply

As part of the assessment of social sustainability and performance, good access to water was examined. “Good access” is defined in the assessment tool as regular access to a safe and reliable water supply. This excludes cases where distance to the water source is excessive, water is rationed, or water pressure or quality is inadequate. On average, only 19 percent of households in each community have good access to the profiled facilities. In five cases, only 10 percent of households in the community have good access. Out of 15 cases, only four have good access scores higher than 30 percent. The highest access scores are for the two water cooperative-managed systems constructed under the CWSP.

The majority of the households with good access are middle-income users, with relatively few upper-income users. In many cases, those without good access choose to use other water suppliers. Surveys of households that have not joined the water users associations reveal that:

- 40 percent prefer to use an alternative water source nearer to their house
- 17 percent report insufficient funds to pay for water charges charged by water users associations
- 5 percent perceive that the quantity of water available from the association-run facilities is insufficient.

The study also suggests that the 15 case study water supply systems have little impact on services for the poor. Fifty-six percent of the

There appears to be a clear link between projects that place emphasis on institution building and those that achieve cost recovery.

Figure 3: The characteristics of case study locations

Project	Location	Type of Water Users Association	Level of Service and Source of Water		
			1	2	3
Agrarian Reform Communities Development Project and Community Project	Kasitrusan	BWSA		Spring	
	Lapan-Lapan	CBO	Well		
Central Visayas Water and Sanitation Project	Bato	COOP		Spring	Spring
	Cantumog	COOP			Spring
	Bagacay	CBO	Well		
	Usmad	CBO		Spring	Spring
First Water Supply Sewerage and Sanitation Sector Project	Bimmotobot	BWSA		Spring	Spring
	Paagan	BWSA			Spring
	Tuding	BWSA			Spring
	Paitan Sur	CBO/LGU*	Well		
Institution Building for Decentralized Implementation of Community Water Supply and Sanitation Project	Kibudtungan	BWSA		Well	Well
Poverty Alleviation Fund II Potable Water Development and Sanitation	Santa Lucia	BWSA	Well		
Rural Water Supply and Sanitation Sector Project	Capitongan	BWSA	Well		
Rural Water Supply and Sanitation Project–Phase IV	Damires	CBO*	Well		
Second Island Provincial Water Supply and Sanitation Project	Hoskyn	BWSA		Spring	

BWSA = Barangay Waterworks and Sanitation Association; CBO = Community-based Organization; COOP = Water Cooperative; LGU = Local Government Unit; * = informal management organization

communities define their households as poor, but only 12 percent of these poor households have good access to the rural water supply system. In half the case studies, less than 5 percent of poor

households have good access to the water supply system. The location and layout of the facilities studied was often determined by the availability of donated land, ease of construction, or minimum cost

requirements. As a result, the poor, who tend to live in marginal areas and are excluded from discussions regarding water services, often have closer alternative water supplies than the facilities managed by

water users associations. The study's findings confirm that the poor generally continue to use these (often free) alternative sources even after improved facilities have been installed in their community.

Cost Recovery

When assessing financial sustainability, cost recovery was examined. It is the national government policy for users of Level 1 systems to pay minimal charges to cover maintenance and normal repairs and for users of Level 2 systems to contribute an additional amount for depreciation or asset replacement. When the projects were implemented, they all had varying approaches and gave different emphasis to cost recovery, but only the RW3SP had rules requiring that tariffs cover asset replacement.

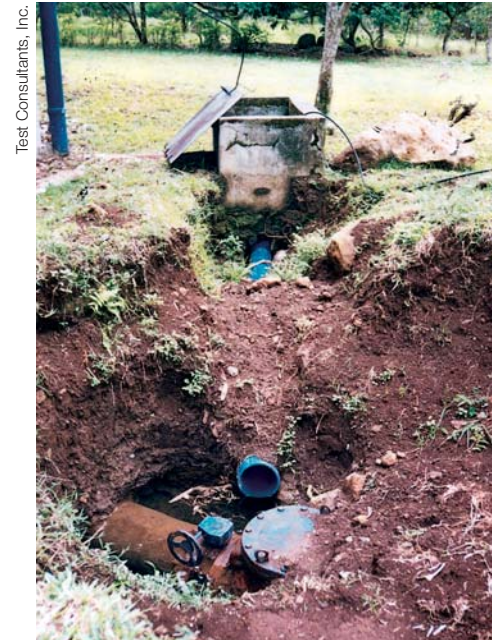
In practice today, only two of the six case studies with Level 1 water supply systems (Capitongan and Bagacay) have water users associations that collect water charges on a regular basis. The rest of the Level 1 associations rely on adhoc collections when repairs or replacements are required. In contrast, all but one of the associations from the Level 2 and Level 3 systems collect regular water tariffs.

The water tariffs charged by the associations appear affordable. The average household income reported by users is approximately US\$100 per month, and the average monthly water charge is US\$0.66, which means that less than 1 percent of their average income is spent on water charges. Typical water supply costs in relation to level of service are as follows:

- Level 1 facilities—In the two cases that charge tariffs, US\$0.09 is charged per month (0.1 percent of the average income)
- Level 2 facilities—US\$0.15 per month is charged per month (0.8 percent of the average income)
- Level 3 facilities—US\$1.88 per month is charged per month (2 percent of the average income).

There appears to be a clear link between projects that place emphasis on institution building and those that achieve effective cost recovery. The case study systems from the projects that did not invest in institution building (FW4SP, RWS4, and PAF2) do not currently charge for water. Most of these systems have insignificant savings and do not have updated financial records. In contrast, the case study systems implemented under the projects that did invest in institution building (WATSAN, CVWSP, RW3SP) exhibit generally good financial management. In these cases, tariffs are in line with costs for operation and maintenance, accounts are in order, and several of these water users associations have managed to build up substantial cash reserves.

Three of the more successful water users associations (Bato Cooperative, Cantumog Cooperative, and Kibudtungan Barangay Association) have installed water meters on their house connections and are using progressive tariffs to bill the user households. The users pay for the installation of their private service pipes and water meters, and the systems appear to be working well. The level of service and



The study team visited many schemes that were no longer operational

the management effectiveness of these associations are unusually high compared to other rural systems.

Demand-Responsiveness

In examining technical and institutional sustainability, one of the lessons concerned demand-responsiveness. In most cases, the projects offered lower levels of service than those desired by the communities. Despite the projects' limitations, the communities have generally managed to get what they need, either by increasing the size of their community contributions or by finding alternative sources of finance.

CVWSP was the only one of the eight projects to offer Level 3 water supply systems, but none of the communities in

One of the lessons concerned demand-responsiveness. In most cases, the projects offered lower levels of service than those desired by the communities.

its four case study systems chose this option. Therefore, all 15 case studies were originally Level 1 or 2 water supply systems, with six Level 1 systems and nine Level 2 systems.

A review of the current status of the case study systems confirms the importance of the initial level of service provided.

The six Level 1 case studies all remain at Level 1, while seven out of the nine Level 2 systems have been upgraded to Level 3 systems (or to combination Level 2 and 3 systems). These improvements are possible because the communities have obtained additional financing, thus

the upgrades often reflect the political connections of the communities in question rather than the strength of their demands. However, genuine demand for higher levels of service has been expressed in several cases, most notably where households have constructed their own house connections using local materials, such as flexible pipes.

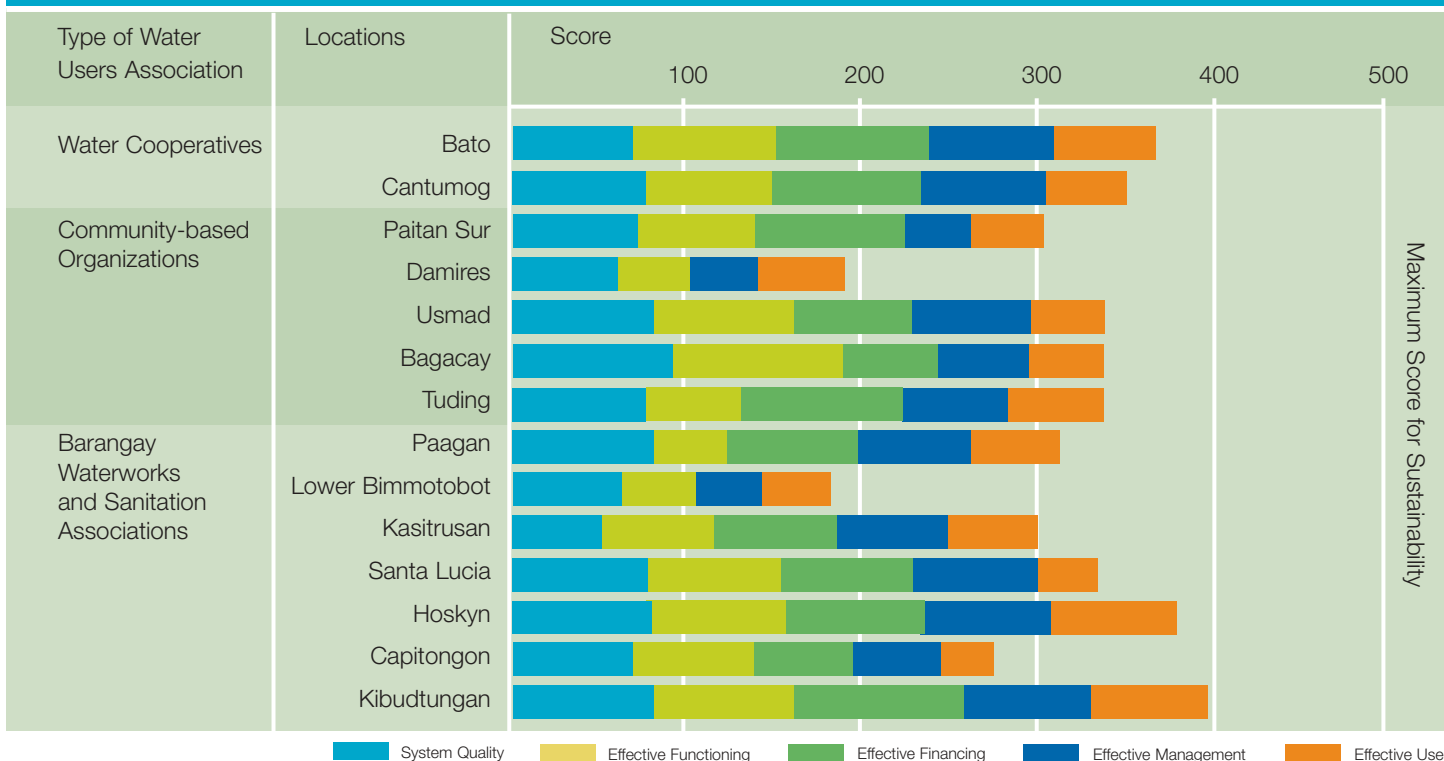
Local Government Unit Contributions

In examining responses to financing policies, the study shows that the more successful and sustainable case study

systems all receive contributions from LGUs toward capital expenditures. In most cases, these contributions involve taking responsibility for soft components (institutional development, training, transport, and support), rather than for hardware (materials and construction). Importantly, this ensures that local bodies form relationships with the water users associations at an early stage and involve them in vital decisions, such as the site selection of the water supply facilities.

However, the case studies also reveal that LGUs are sometimes reluctant to contribute toward the rural water supply

Figure 4: Overall sustainability according to the methodology for participatory assessment





Intended beneficiaries of rural water supply projects continue to rely on traditional sources of water, as they see that little has improved with the often distant and unreliable new systems

schemes being implemented within their jurisdiction. This may be a function of their relationship with the implementing agency, but it also draws attention to the fact that smaller municipal LGUs have constrained budgets and may struggle to meet the higher levels of cost sharing that new national policies for rural water supply are currently emphasizing.

Community Contributions

Community contributions toward capital costs are supposed to diminish the risk of building inappropriate facilities in rural communities. The rationale is that impoverished communities may accept any water system that is offered for free, but will think twice before agreeing to contribute toward such a system. It is also thought that community contributions increase users' sense of ownership of a system, thus ensuring more interest and involvement in planning, construction, and management, which in turn results in a more sustainable system.

Surprisingly, in examining responses to financing policies, the link between community contributions and increased sustainability is yet to be established. The WATSAN and CVWSP projects, which produced five of the most sustainable cases examined by the study, did not require community contributions (unless higher levels of service were demanded), whereas six out of the seven least sustainable schemes did receive community contributions. In part, this finding relates to a general policy trend toward lower community contributions (with higher LGU contributions), but it may also be because most of these community contributions were in-kind (labor, local materials, land, and food for the workers). Further investigation on this funding, particularly any distinction between in-kind and financial contributions, would be useful in the future.

Institutional Arrangements

In examining institutional sustainability, the study shows that the training and capacity

building given to the water users associations and the support and monitoring provided by external agencies vary among case study systems. The involvement of barangay officials prior to the implementation of the project appears helpful in developing the water users association and in ensuring that appropriate beneficiaries are targeted and involved in the early stages of project planning and site selection. Assistance is also helpful for the proper registration and accreditation of the association with the appropriate authorities.

The six most sustainable cases identified using both assessment methods include two barangay waterworks and sanitation associations, two water cooperatives, and two community-based organizations. Thus there is little evidence that any one of these three forms of water users associations is inherently more sustainable than the others. However, the water cooperatives appear to have advantages in several other areas, including access to water supply and external support.

The two water cooperative-managed case studies have the highest levels of access. This may be related to the more cost-efficient tariffs charged by the cooperatives. For instance, Kibudtungan Barangay Waterworks and Sanitation Association is rated the most overall sustainable case by the MPA method (see Box 4), but it charges almost three times as much per cubic meter as the cooperatives and has much lower access figures (only 16 percent households have good access to the water supply). The cooperatives also have the advantage of external

The study shows that the more successful and sustainable systems received contributions from local government units toward soft components such as institutional development, training, and support.

support from the Cooperative Development Authority (CDA), a non-technical body that does not assist with water supply problems, but monitors performance, examines financial records, and carries out general training and support.

Conclusion

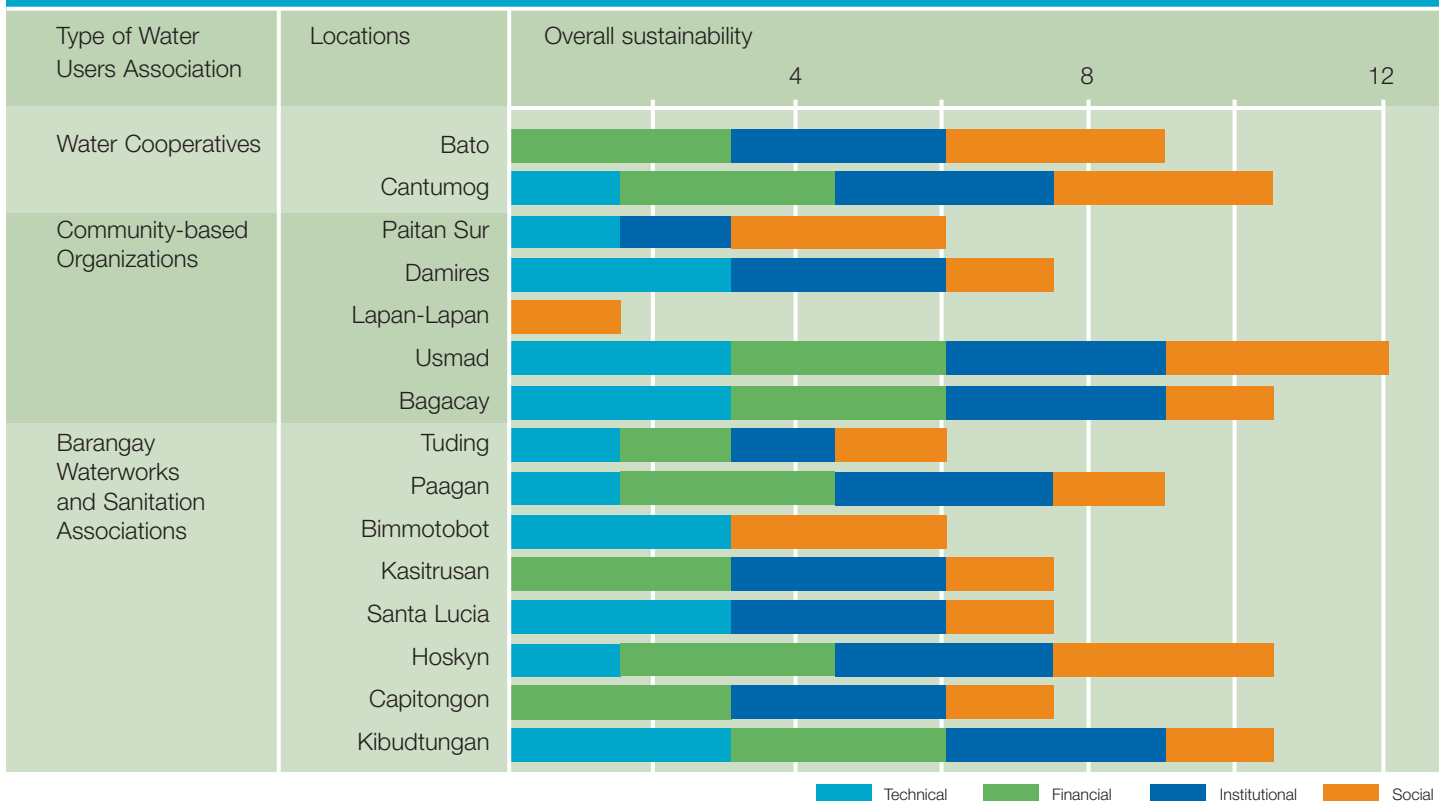
A key message of this study is that the large, centrally managed projects failed to produce sustainable rural water supply

systems. The sheer number of rural water supply schemes required to ensure universal access to safe water supply and the declared intention of the national government to meet this objective as rapidly as possible put heavy pressure on rural water supply projects. The result was overly ambitious targets and cost cutting in order to produce as many systems as possible from the limited resources available. Data on the number of complete or functioning rural water supply schemes are scant, but it appears that most of these large projects managed

to install less than half the intended number of systems, of which many are no longer operational. Although these large projects installed many rural water supply facilities, it now seems clear that they were inefficient, and their impacts were limited.

The findings of the WPEP study suggest that smaller projects, with significant investments in capacity and institution building, produce the most sustainable and effectively used rural water supply schemes. It is also apparent that local involvement of the LGUs and communities

Figure 5: Overall sustainability according to the specialist appraisal



Scoring: less than 6 points = unsustainable; 6 points = marginally sustainable; greater than 6 points = sustainable

aids system preparation, planning, implementation, and management, and that sustainability is improved when these processes are monitored by external agencies. In general, the communities demanded higher levels of service than those being offered by rural water supply projects. In most cases the communities upgraded their systems themselves or persuaded someone else to fund the improvements. This confirms the importance of informed choice and demand-responsiveness in the provision of rural water supply services. Projects must have less rigid rules on technical options and should offer a menu of options and related costs that allow local users to select the most appropriate system for their specific needs and payment capacities.

The findings on financing are not as clear. The most sustainable systems all received contributions from the LGUs for capital expenditures, but these contributions varied greatly, and there is some suggestion that smaller LGUs were reluctant to contribute. However, it seems likely that the requirement that LGUs contribute was beneficial, as it increased their involvement with the systems.

Within the group of cases studied, none of the better-performing projects required communities to contribute toward capital costs. When community contributions were made, they were often in-kind, and appear to have had little or no impact on sustainability. However, there is evidence that cash contributions are associated with more sustainable water supply schemes. This distinction needs further consideration and follow-up in the future.

Box 4: KIBUDTUNGAN BARANGAY WATERWORKS AND SANITATION ASSOCIATION*

Before the water supply system for the Kibudtungan Barangay Waterworks and Sanitation Association was constructed, the community depended on a spring source located about a kilometer away or bought water from water vendors at US\$0.06 per 5-gallon container. Now, water is only bought from vendors during power failures or when major system repairs are taking place.

The water system was implemented through the WATSAN project in 1997. The project was originally designed to provide Level 2 water service to the community through seven public water points (requiring construction of an elevated reservoir and 600 meters of pipeline). Except for the pipelaying, which was undertaken through *bayanihan* (self-help), the rest of the components, including materials and labor, were contracted out by the project. The officers and management staff were trained in health and sanitation aspects and attended short courses on bookkeeping, financial reporting, and general management. A local resident was hired as the system caretaker and maintenance person. Having been trained in plumbing at a local vocational school, the caretaker introduced technical improvements that have greatly enhanced performance of the system.

Of the 49 original member households, about 20 opted for private house connections (Level 3) at the outset. House connections required a water meter, several lengths of pipeline, in-house taps, and plumbing service. The average cost was about US\$50. There are now over 120 user households, of which about 80 have house connections. The water rate schedule was designed with the help of the municipal engineer based on the progressive charging system used by nearby water districts. When first presented to the association's governing general assembly, it encountered much opposition. However, when it was explained that the progressive nature of the tariff was designed to prevent wasteful use and that it was actually much cheaper than the US\$0.06 per container charged by water vendors, negative sentiments soon died down.

As a result of the tariff adjustments, the association is able to make a reasonable return, which the users have decided to put toward subsidizing the local public school and assisting poorer households within the community to access a convenient water supply.

There is a strong argument for funding incremental improvements and upgrades to existing water supplies used by poor households, rather than subsidizing the development of new ones.

A number of sector constraints are identified by the study:

- **National-level capacity is not accessible.** There is little evidence that national-level bodies have any positive impact on the sustainability of the rural water supply schemes studied. It is notable that, despite the wealth of technical knowledge and skills contained within bodies like the DPWH and local water districts, there is no mechanism for water users associations to access this knowledge.
- **Technical problems often hinder sustainability.** Several of the systems studied are struggling to function because of relatively simple technical faults. They appear to be receiving no assistance in solving these problems.
- **There is insufficient focus on services for the poor.** Though poverty alleviation was not an explicit objective of the rural water supply projects studied (except for PAF2), it is noticeable that most of the case study systems have had little impact on water supply services for the poor. The location and layout of the facilities for the projects were often determined by the availability of donated land, by ease of construction, or by minimum cost requirements. As a result, the poor, who tend to live in marginal areas and are usually excluded from discussions regarding water services, often have closer alternative water supplies than the facilities run by water users associations. The study findings confirm that the poor generally continue to use these alternative sources, which

are often free, even after improved facilities have been installed in their community.

The lessons from this study suggest that projects need to focus more on support and follow-up activities, while local governments need incentives to be involved throughout the lifetime of the implemented systems. Rural water supply efforts need to be concentrated on institutional development, financial management, encouraging local involvement, and hygiene promotion. However, these issues are complex, and success requires extensive resources, including much time, money, and trained staff. Small well-funded projects have the flexibility and dedicated staff needed to produce effective schemes but these results may be difficult to replicate on a larger scale.

Recommendations

The following recommendations attempt to address some of the constraints identified by the study, making suggestions for the design of ongoing and future projects and for changes to the national policy and institutional framework for the rural water sector.

1. Invest in institutional strengthening and capacity building

There needs to be a balance between ambitious project targets for scheme completion and the development of sustainable rural water supply services. At

present, too much effort and funding is spent on facilities and not enough is spent on ensuring that these facilities are well operated, well managed, and effectively used by the intended beneficiaries. New projects should aim for fewer systems but with more investment on institutional strengthening and capacity building. This investment should be directed toward both water users associations and relevant LGUs, so that LGUs gradually accumulate the experience and skills needed to advise, regulate, and monitor the rural water supply systems within their jurisdiction.

An important part of this process will be the recognition that rural water supply schemes are not complete until sustainable (in terms of all aspects of sustainability—technical, financial, environmental, institutional, and social) services are established. Project completion or success should be measured by sustainable outcomes rather than inputs such as the number of handpumps or pipe networks installed. This change in approach will require the introduction of more sophisticated monitoring and evaluation tools, such as the MPA used in the WPEP study, long-term impact assessments, as well as the introduction of more reliable and sustainable databases.

2. Emphasize cost recovery

Declining government funds for rural water supply make cost recovery even more important. Rural water supply projects should ensure that appropriate financial mechanisms are in place before system completion or handover. Water users associations should be well trained in tariff



On average, only 19 percent of the communities consider themselves to have good access to the facilities, and it is the middle-income users that primarily enjoy these

setting, and regulations for tariff increases should be ratified by the associations prior to starting operation. LGUs can play an important role in this process by encouraging and facilitating local networks of water service providers to share management and cost-recovery information on salary levels, operational costs, maintenance activities, tariff levels, replacements costs, etc.

3. Improve access to services by the poor

Improved access should be the main objective of any rural water supply and sanitation project, as the poor generally have the lowest access to safe water supply and suffer most from the poor health associated with inadequate water and sanitation services. The first step is to identify the poor and determine their priorities. However, poor households are rarely comfortable communicating directly with external agencies or governments,

thus it is often more effective to have local non-governmental organizations (NGOs) intermediate between the community and the project.

The WPEP study demonstrates that the poor often continue to use traditional water sources in preference to an improved water supply located elsewhere in the locality. This provides a strong argument for funding incremental improvements and upgrades to existing water supplies used by poor households, rather than subsidizing the development of new ones (whose benefits are often captured by households that are not poor).

4. Provide incentives for investment

Common policy and project rules will provide greater incentives for LGUs and communities to invest in rural water supply systems. At present, they are reluctant to contribute toward infrastructure costs

because they believe that there is always a chance that someone else (politician, external donor, or NGO) will provide them with the facilities free of charge. Changing these perceptions and the reality will require consistent, progressive, and transparent national policies and programs as well as solid commitment from local politicians.

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References

Dayal, R., van Wijk, C., and N. Mukherjee. 2000. "Methodology for Participatory Assessments: with Communities, Institutions and Policy Makers." World Bank, Water and Sanitation Program, Washington, D.C.

Government of the Philippines, Department of Finance. 2002. *National Government-Local Government Unit Cost Sharing Policy*. Policy Governing Board, Municipal Development Fund Office, Manila.

Government of the Philippines, National Economic and Authority. 1988. *Rural Water Supply and Sanitation Master Plan*. Manila.

Government of the Philippines, National Statistics Office. 1999. *Annual Poverty Indicators Survey*. Manila.

Soriano, C., and Test Consultants, Inc. 2003. "Rural Water: Models for Sustainable Development and Sector Financing." Water Supply and Sanitation Performance Enhancement Project, Manila. [Available at www.wpep.org]

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