

INSTITUTIONAL ARRANGEMENTS FOR RURAL COMMUNITIES

Municipal Promoter Program in Nicaragua

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Abstract

This case study documents a model for providing backup support to community-managed rural water supply and sanitation systems in Nicaragua. The model was formalized in 1997 based on earlier experiences in Region VI covering the Departments of Matagalpa and Jinotega. The region has a rural population of 540,000, which represents about 70% of the total population. Coverage for water supply is 35% and for sanitation 36%. The model builds upon the existing structure of water committees and regional promoters of the National Water Supply and Sanitation Company (ENACAL) and adds a key link at the local level in the form of a municipal O&M promoter. The municipal promoter is an employee of the municipal government but works under the technical supervision of the regional ENACAL promoter. To date, promoters have been established in nine municipalities providing services to approximately 55% of the rural population in the region with improved community water supply systems.

After two years of operation, the results are encouraging. Monitoring reports indicate that 95% of the 300 systems under the care of the municipal promoters are operating at acceptable or above-average levels. While not entirely problem-free, the model has succeeded in creating locally-based capacity within the municipalities for meeting acceptable standards of service provision in rural water supply and sanitation. This case study shows what can be achieved in that regard with modest donor assistance, a sound legislative framework, a competent government institution, well-trained promoters, and a supportive municipal government.

1. Background and Context

The population of Nicaragua is estimated at 4.9 million people, with approximately 2.3 million living in rural areas. The Government of Nicaragua (GoN) estimates coverage levels for rural water supply and sanitation (WS&S) at 39% and 36% respectively (1999), among the lowest levels in Central America. However, these national averages do not convey the wide variations from area to area, with coverage for water supply as low as 7% in certain locations¹. The GoN is aiming for provision of water supply to 50% of the rural population by the year 2002. Nicaragua also fairs poorly when compared to other countries in the region in terms of more general socioeconomic development. Aggregated data for key indicators are given in Table 1.

¹ ENACAL-GAR Central Office, National Information System for Water Supply and Sanitation (SINAS), 2000

Table 1: Comparative Socioeconomic Indicators for Central America

Country	Infant Mortality Rate (per 1000)*	GDP per Capita (US\$)*	Illiteracy Rate (%)*	Rural Water (%)*	Rural Sanitation (%)*
Costa Rica	14	2,400	5	84	70
El Salvador	34	1,360	28	46	65
Guatemala	49	1,200	44	78	74
Honduras	31	600	27	79	78
Nicaragua	46	340	34	39	36
Panama	18	2,580	9	N/A	N/A

Source: *UNICEF, 1997/98
 Nicaragua source: Regional WS&S Network, 1999

From its inception in 1979 until very recently, the Nicaraguan Institute for Water Supply and Sanitation (INAA) was the sole agency responsible for all aspects of service delivery and regulation. The sector has recently undergone a major transformation, with the establishment of a new legal and institutional framework which allows for the creation of distinct entities each with a specific mandate: the National Commission for Water Supply and Sanitation (CNAA) responsible for national-level sector policy and strategic planning; the newly reformed INAA, now acting as a regulatory body rather than a service provider; and the National Water Supply and Sanitation Company (ENACAL), responsible for the supply and operation of services nationally in both urban and rural areas. These reforms are part of a long-term modernization strategy adopted by GoN that will allow for increased private sector participation, particularly in the potentially profitable urban systems. One of the most significant aspects of the reforms is the separation of operation of services from regulation. While this separation is clear for the urban sector, the law governing the creation of ENACAL (No. 276, January 1998) is much more ambiguous for the rural sector.

The Rural Water Supply and Sanitation Sector in Nicaragua

Responsibility for the delivery of rural WS&S services falls under the mandate of ENACAL, which has a dedicated national-level directorate for rural WS&S (GAR) and five regional GAR offices. (Nicaragua has six regions but only five have rural directorates.) The GAR of Region VI, which includes the Departments of Matagalpa and Jinotega, has historically had the greatest latitude in decision-making. Its director has always reported directly to the national ENACAL-GAR office in Managua, whereas directors of other regions were, until very recently, subordinate to the departmental ENACAL delegates. In each region the government has financed a small Operation and Maintenance Unit (UNOM), using funds generated by the urban sector. The function of each regional UNOM is to provide long-term backup support to help communities solve more complex technical and administrative problems, monitor water quality, and maintain a database of the status of systems.

Nationally ENACAL-GAR is the most important implementing agency in the sector, executing between 75 and 80% of all projects in conjunction with international donor

funding. There are currently only a limited number of other agencies engaged in the implementation of projects in the rural WS&S sector. One of the strategic aims of ENACAL-GAR is to actively encourage the expansion of alternative implementation capacity for the rural WS&S sector, thereby enabling GAR staff to focus on its core functions of planning, coordination, and regulation. A summary of the main agencies, other than ENACAL-GAR, involved in the sector is given in Table 2. Private companies rarely operate community-managed systems, as the sector does not generate sufficient profit margins to attract them.

Table 2: Main Implementation Actors in Rural WS&S, Nicaragua

Organization	Role and Responsibility	Relationship with ENACAL-GAR
National NGOs	Implementing organizations responsible for limited numbers of community-managed RWSS projects.	Work coordinated and regulated by regional ENACAL-GAR; adheres to GAR policy guidelines and community-based approaches.
International NGOs	Implementing organization and in some cases donating and/or channeling funds for large-scale community-managed RWSS programs at municipal and regional level; support to regional and national-level sector initiatives.	Work coordinated and regulated by regional ENACAL-GAR; adheres to GAR policy guidelines and community-based approaches; works in partnership with ENACAL-GAR at national level.
Social Investment Emergency Fund (FISE)	Investment of funds, mainly from World Bank, for large-scale social infrastructure projects, including RWSS in concentrated rural populations; traditionally more focused on physical outputs.	FISE executes projects mainly through the private sector. Projects must be approved by ENACAL-GAR and adhere to sector policies and approaches, but in general FISE has limited capacity to implement community-based projects.
Municipal Authorities	Legally mandated to guarantee provision of social services under municipal law, but in reality very limited direct implementation of RWSS projects in municipalities, mainly due to financial constraints.	Increasingly involved with regional ENACAL-GAR in planning and coordination at municipal level; also becoming involved in backup O&M support.
Ministry of Health	Legal GoN agency responsible for water quality and epidemiological surveillance; no direct implementation of RWSS projects.	Close coordination and information sharing with regional ENACAL-GAR; community health worker is usually member of water committee – joint activities in public health awareness, system disinfection, etc.
Private Companies	Involvement limited to drilling in concentrated rural population areas; direct provision of hand-pumps and spare parts.	Strong links with manufacturers of “rope pump” which is sector standard; ENACAL-GAR encouraging direct spare part and sales outlets.

In parallel with modernization of state-run institutions such as INAA, the GoN has been actively pursuing decentralization of services from central to municipal levels. This culminated in the passage of a series of modifications to the existing municipal law in 1997, placing far greater responsibility and accountability on elected municipal governments to ensure the provision of basic social services, including water supply and sanitation. This responsibility applies to both the urban population (*casco urbano*) and

those living in rural areas of the municipality. Due to limited economic capacity, many municipal authorities are unable to cover the costs of most capital investment projects; however, this change in the law does have significant implications for provision of backup support services to rural communities.

In October 1998, Central America suffered unprecedented damage from Hurricane Mitch, which left thousands dead and millions of dollars in damage to transport and social infrastructure. In Nicaragua alone, some 738 rural water supply schemes were completely destroyed or seriously damaged, along with nearly 10,000 household latrines. Over 50% of all damage to the rural WS&S sector occurred in the Departments of Matagalpa and Jinotega, which lay in the path of the storm in the northeast of the country. Many of these damaged systems have been repaired or replaced by ENACAL-GAR, with support from external donors. However, the damage caused by the hurricane has undoubtedly set back development efforts in the region and has forced communities to expend what limited resources they may have built up to rehabilitate services to pre-hurricane levels.

Selection of the Case Study

The case study described in this section concerns the approach taken by ENACAL-GAR in Region VI to improve the provision of operation and maintenance (O&M) services to a growing number of communities with water supply schemes in rural areas. This particular case was selected for the following reasons:

- In the context of Nicaragua, Region VI stands out as one of the few positive examples of ENACAL-GAR working successfully to incorporate municipal government authorities in a system of service provision for water supply systems to rural communities. Although similar approaches involving municipal authorities have been applied elsewhere in the country, most notably in Esteli and Nueva Guinea, they have not been as successful or else they have relied on heavy subsidies from donor-funded programs.
- The model adopted by ENACAL-GAR in Region VI, while not totally problem-free, has succeeded in maintaining reliable O&M service for rural systems to an expanding population.
- The model was established and expanded at a time of far-reaching institutional reform in the WS&S sector generally, and has continued to function despite the devastating impact of Hurricane Mitch on the social and economic infrastructure of this part of the country.

Background to Region VI, Matagalpa and Jinotega

Region VI contains the two administrative departments of Matagalpa and Jinotega. The region covers 18,168 km², approximately 15% of the national territory. The region has both alluvial plains and mountainous areas and extends to the border with Honduras in

the north. Annual rainfall varies from over 1,200 mm in the north to as low as 800 mm in the drier southern zone. Consequently, both surface and groundwater sources are exploited in different parts of the region. In general, groundwater quality is good, however the region contains one localized area with very high levels of arsenic, which has posed a serious public health risk in the past.

Like other regions of the country the ENACAL-GAR office in Region VI has received long-term financial support from a number of international donors including UNICEF, the European Union, KfW, the Swiss Workers Aid (AOS) and the Netherlands Development Organization (SNV). The operating budget for the financial year 2000 is just over US\$ 1 million, of which the GoN contributes approximately 32%. While most donors have tended to offer large-scale funding for capital investments, both AOS and SNV have concentrated on institutional support. In particular SNV has provided a series of long-term technical advisors who have been engaged in supporting the strategy for decentralization of O&M service provision to the municipal level for the last several years.

Rural Water Supply and Sanitation Coverage Levels

The rural population of Region VI is estimated at 540,000, or about 70% of the region's total population. Most rural communities tend to be fairly small, ranging from 40 to 50 people up to several hundred, but there are also a number of communities with several thousand inhabitants. To date a total of 777 community-managed systems have been built in the region, serving approximately 187,000 people, which represents a coverage level of about 35%. Rural sanitation coverage in the region is at about 36%², however this figure includes coverage for both rural concentrated and rural dispersed populations. The variation in coverage levels in the rural population for all municipalities is shown in the Table 3 (it excludes urban population, i.e., those living in principal municipal towns).

The socioeconomic profile of rural communities varies across the region, with those in the southern part, particularly along the main transport corridors, having better access to cash incomes. In this area, they are also more organized, having had previous experience with community activities. Conversely, the rural population in the east and north of the region tend to live in much more isolated areas with limited transport infrastructure and often very poor levels of government assistance. Illiteracy and health and social problems all tend to be higher among this more isolated population. Wage-labor opportunities are limited, except during the coffee harvest in areas at higher elevations. In general the rural population in the region relies on subsistence agriculture, complemented by a small amount of cash cropping which provides only limited income. Average annual household incomes for the rural population are estimated at approximately C\$7,000 to \$10,000, equivalent to US\$550 to \$800. In reality most of this income is in the form of agricultural production for family consumption, and typically households have a cash surplus only following the twice-yearly harvests in June and October.

² ENACAL-GAR Matagalpa-Jinotega, SINAS, 2000

Table 3: Coverage Levels for Rural Population of Matagalpa And Jinotega Departments - Region VI

Municipality	Total Rural Population	Water Supply		Sanitation (Latrines)	
		Pop. Served	As % of Total Rural Pop.	Pop. Served	As % of Total Rural Pop.
Region VI (Total):	539,811	187,357	35%	193,211	36%
MATAGALPA DEPARTMENT	299,852	137,154	46%	138,351	46%
Matagalpa	51,614	21,839	42%	20,328	39%
Dario	29,977	23,139	77%	19,552	65%
Esquipulas	11,601	5,621	48%	5,409	47%
Matiguas	35,856	4,101	11%	6,648	19%
Muy Muy	11,769	765	7%	2,884	25%
Sebaco	10,136	8,712	86%	8,605	85%
San Dionisio	15,820	10,209	65%	11,305	71%
San Isidro	12,133	11,557	95%	9,264	76%
San Ramon	24,674	21,940	89%	23,726	96%
Terrabona	10,915	10,719	98%	7,500	69%
Rio Blanco	19,461	2,116	11%	106	1%
Tuma - La Dalia	47,055	16,031	34%	22,543	48%
Rancho Grande	18,841	405	2%	481	3%
JINOTEGA DEPARTMENT	239,959	50,203	21%	54,860	23%
Jinotega	53,237	24,213	45%	35,139	66%
La Concordia*	6,472	3,740	58%	1,928	30%
San Rafael Nrte*	12,640	1,114	9%	815	6%
Yali*	20,016	5,711	29%	3,160	16%
Cua - Bocay	62,602	7,697	12%	6,810	11%
Pantasma	31,596	6,350	20%	5,152	16%
Wiwili	53,396	1,378	3%	1,856	3%

*Municipalities not serviced by ENACAL-GAR Region VI.

Note: The shaded municipalities have active Municipal O&M Promoters.

2. Scope of Services Provided

At the national level, ENACAL-GAR has clear guidelines for the selection and type of rural water supply systems which are typically simple in design and use technology that is acceptable to the end-users. The principal types are either hand-dug wells or drilled boreholes with handpumps, or small piped gravity-fed schemes. Very occasionally, piped schemes with diesel or electrical pumps will be constructed, but this is only in cases where technical circumstances dictate and where communities have the capacity to operate and maintain them properly. In Region VI there are only 12 schemes with mechanized pumps out of a total of more than 770 systems. The locally-manufactured rope pump (*Bomba de Mecate*) is now the sector standard handpump due to its affordability and robust design. The normal level of service is single-point supply in the case of handpumps, or public tap-stands. However, household connections are made

available if the water source and topography allow for sufficient capacity in the system and if each family is willing to pay the additional connection costs.

On-site excreta disposal for rural communities is limited to latrines of differing designs that take into account localized variations in groundwater level and soil type. The most common designs are the improved traditional pit latrine and the ventilated improved pit latrine, incorporating a raised pit as necessary. In the past, certain programs have constructed various types of composting latrines. Generally ENACAL-GAR does not promote this design, however, due to the amount of maintenance and follow-up required for proper operation and maintenance.

3. Management and Organization

Historically, investments provided by donor institutions for the rural WS&S sector in Nicaragua have been primarily focused on physical construction, with the understanding that communities benefiting from the schemes should carry out routine O&M work after completion of the project. Hence the modality formally adopted by ENACAL-GAR for administration and management of rural WS&S systems is based upon the establishment of an elected water committee, a prerequisite for physical construction to be undertaken. Typically the committee is elected for a period of two years and has four to six members. It is usually responsible for a range of activities including general management of the system, technical oversight and repairs, promotion of improved hygiene practices, collection of tariffs, watershed protection, and formal representation with external bodies. ENACAL-GAR has developed guidelines governing the administration and functioning of these committees.

In most instances, the water committee can provide effective management and O&M of its own water supply system. However, there are a number of tasks that are often beyond the scope or capacity of the committees. In order to support the water committees, the UNOM of the GAR has historically provided a range of services to communities across the region with a small team of mobile promoters. The extent and frequency of support varies by community, depending on the level of internal cohesion and organization. Some committees have been able to operate with a minimum of external assistance.

Operation and maintenance of latrines is considered to be a household responsibility; therefore the UNOM promoters are not actively engaged in monitoring their use and upkeep. However, since proper O&M of latrines impacts the general environmental health status of communities, the UNOM staff do integrate this issue into their regular activities. For example, at the request of the committee, the promoter will work to promote the adoption and proper use of latrines when a number of households within the community are evidently not using them consistently. In cases where new families are integrated into a system, the promoter will work together with the water committee members to ensure that households with a new water connection also construct their own latrine.

A New Model for O&M Service Provision

Over the last 20 years, various donor-supported programs have constructed over 770 rural WS&S projects in Region VI, while the UNOM staffing has been limited to one unit head and three promoters operating from the regional headquarters in Matagalpa. For several years this arrangement was feasible, albeit with a highly centralized management structure. However by the mid-1990s, with an ever-increasing caseload and a static level of funding, it became clear that a reassessment of long-term O&M service provision was necessary for the region. In 1996, with support from both the Swiss Workers Aid and the Netherlands Development Organization, the regional ENACAL-GAR office started to develop a strategy for expanding and decentralizing O&M support to rural areas to meet the increasing demands of communities in need of regular support.

The new model for O&M service provision builds on existing components of the old arrangement (the water committees and the Regional Promoter of UNOM), but it adds a key linking mechanism at the local level in the form of a Municipal O&M Promoter. Local representation is a critical factor not only because of the sheer size of the region, but also because of the need for a close understanding and rapport between the promoter and the communities with which they work. In this context the Municipal O&M Promoter operates as part of the municipal government, or *Alcaldía*. This arrangement is open to the possibility of political interference, which is addressed at greater length below. The new system implies a change in role for the Regional UNOM Promoters from direct implementation of tasks to support and supervision. The number of staff, key tasks, and functions of each tier in the model are given in Table 4.

Establishing an Agreement with the Municipal Authorities

ENACAL-GAR management wants to include a broad spectrum of agencies and individuals in the decision to establish this new approach to service provision at the local level. Therefore the starting point is always based on roundtable discussions involving the *Alcaldía*, the municipal-level representatives of the Health, Education, and Environment Ministries, any locally-based NGOs that may be active in the sector, and representatives of some of the water committees in the municipality. In this forum ENACAL-GAR presents its concerns over constraints to provision of adequate support to communities based on the existing, centralized model and explains the implications of the recent legal and institutional reforms. There is often a discussion relating to the social, economic, and environmental costs of poor or nonexistent O&M services. The end result is usually an agreement in principle and the subsequent signing of a joint agreement that sets out the roles, responsibilities, and financial obligations of each party, with ENACAL-GAR and the *Alcaldía* comprising the two principal signatories.

In the majority of agreements reached in Region VI to date, the *Alcaldía* has covered the costs of salaries, social benefits, and running costs of the Municipal O&M Promoter, with ENACAL-GAR providing a motorbike, training, and technical back-stopping. Normally the central government ministries agree to provide specialist inputs and training; they also

agree to coordinate their activities with the promoter at the local level. However, the economic reality of many rural areas of the region is such that no single “blueprint”

Table 4: Region VI, O&M Support to Rural Communities

	Level and Scope of Operation	Key Tasks and Services Provided
Community Water Committee: President, Vice President, Health Promoter, O&M Technician, Finance, Environment	<ul style="list-style-type: none"> • Present in every community with a WS&S system. • Works with individual households. • In some larger communities O&M technician may be a part-time paid position. 	<ul style="list-style-type: none"> • Weekly O&M tasks include cleaning, regular maintenance, disinfection, system inspection and repair; • Tariff collection, bookkeeping, and accounts; • Organizing regular committee and community meetings, fund-raising activities; • Hygiene promotion among individual households, communal work days, clean-up and vector control; • Watershed protection, nursery planting and re-forestation activities.
Municipality Municipal O&M Promoter, Alcaldia	<ul style="list-style-type: none"> • Currently operating in 9 municipalities, covering 318 communities (55%) of all WS&S projects in the region. • Typically one promoter covers between 25 & 50 communities • Reports to line manager within the Alcaldía. • Training, technical supervision and back-stopping provided by Regional UNOM staff. 	<ul style="list-style-type: none"> • Regular scheduled visits to communities; • Technical backup for emergencies or more complex repairs or maintenance tasks; • Periodic review and auditing of bookkeeping and accounts, financial management training; • Water quality sampling (bacteriological) – results shared with community and Ministry of Health; • Conflict resolution and support in re-constitution of the water committee; • Ongoing training and orientation for committee members and users in key areas: hygiene promotion, system disinfection, O&M monitoring; • Data collection and monitoring of system; • Acting as key interlocutor with external agencies and institutions.
Region or Department Regional UNOM Promoter, ENACAL-GAR	<ul style="list-style-type: none"> • Overall responsibility for backup for all WS&S in region; 3 promoters and 1 head of unit. • Reports to Regional Director of ENACAL-GAR • Direct O&M service provision to communities in 8 municipalities. • Backup and training support to 9 Municipal Promoters. 	<ul style="list-style-type: none"> • As above for municipalities without Municipal Promoter; • Ongoing training and monitoring visits to supervise Municipal Promoters; • Scheduled visits to Alcaldías to discuss progress at municipal level; • Collection, collation, and analysis of data; • Direct intervention to support Municipal Promoter as required; • Liaison with key line ministries at municipal and regional level (Health, Education, Environment).

approach can be set up, and ENACAL-GAR recognizes that it must adopt a pragmatic, flexible approach if it is to increase service coverage in these areas. In at least two instances where the *Alcaldía* had insufficient financial resources to support the promoter,

other agencies have stepped in to pay the salary (in San Dionisio an NGO, and in El Cuá-Bocay the Ministry of Health).

To date, Municipal O&M Promoters have been established in nine municipalities, providing backup services to approximately 55% of the population with water supply systems constructed by or with the approval of ENACAL-GAR. The regional director views this as an ongoing initiative, and currently the UNOM is in discussion with five municipalities (Sebaco, San Isidro, Dario, Río Blanco, and Esquipulas) with a view to establishing new promoters.

Training and Induction of New Municipal O&M Promoters

Municipal Promoters are put through a regular training process. Once a suitable candidate has been selected and agreed upon by the main parties, there is an initial round of training and orientation by the regional UNOM staff. This classroom-based training uses the ENACAL-GAR training-of-trainers course which consists of subjects such as sustainability of projects (rules governing the functioning of the water committees), human relations and conflict resolution, community participation and gender relations, community organization, water quality, and basic environmental sanitation. The new Municipal O&M Promoter is also introduced to the standard operating procedures and the computerized reporting and information systems of UNOM and ENACAL-GAR.

In the field, a senior UNOM promoter works with the new Municipal O&M Promoter giving practical, hands-on training, including techniques for water sampling, chlorinating of water supply systems, conducting sanitary inspections of physical infrastructure, operation and maintenance of water tanks, break pressure tanks, maintenance or repair of handpumps, etc. The practical training also includes revision and checking of accounts and ledgers, revision of minutes of meetings and committee or general assembly decisions, and wherever possible, support to existing water committees. After a period of further field-based training and supervision, the Municipal O&M Promoter is formally accredited by ENACAL-GAR and given an identification card that shows that he is qualified to provide O&M services. In general the entire training and orientation process takes about six to nine months, depending on the aptitude of the individual.

Municipal O&M Promoters are required to report to the regional UNOM office once every month to submit reports and coordinate and prioritize activities with the Regional Promoters. Whenever possible, ENACAL-GAR includes every Municipal O&M Promoter in its regular training program for staff of the institution and encourages the promoters to meet together regularly to learn from one another and share common experiences, problems, and solutions.

Activities of Municipal O&M Promoters

Typically a Municipal O&M Promoter serves about 30 communities; however, these communities do not all require the same level of backup support. ENACAL-GAR and UNOM maintain a register of communities indicating the current status of the water

supply system based on three key criteria: technical functioning, administration (financial health), and the organizational cohesion of the water committee and general community support. If the water supply scheme is considered to be functioning well in all three aspects, the Municipal O&M Promoter visits only once every six months, i.e., the minimum frequency, and takes water samples. If the system is considered to be functioning, but with some difficulties in any one area, the promoter visits approximately every three months. If the system is in poor condition, the promoter visits once a month or more frequently as required until matters are improved. If the Municipal O&M Promoter is unable to resolve the situation by himself, he will call on one of the more experienced regional UNOM promoters for assistance. In cases where there is a serious problem (e.g., technical fault or violent conflict between members), the promoter is expected to visit the community immediately.

On average, a visit by the Municipal O&M Promoter to any given community lasts about four hours; the duration depends to a large extent on the type of problem or situation facing the community. The most important activities carried out in a visit are-

- a meeting and open discussion with the full water committee to go over progress and any outstanding problems;
- a review of the accounts and financial status of the system;
- water sampling and a sanitary inspection of the water system (handpump or intake, tanks, mainline, and tap-stands) and general environmental conditions in the community, i.e., surface drainage, solid waste; and
- a check on the condition of latrines, if that is flagged as an issue by the committee.

The visit may also include technical advice and assistance for on-the-spot repairs, cleaning and disinfection of systems, or conflict resolution. The Municipal O&M Promoters also carry out preplanned activities as part of their community visits, such as helping to organize a general assembly meeting, a restructuring of the water committee by majority vote by all community members, or communal work days such as cleaning the intake or tree planting at the water source.

Operating Environment

Under the standard agreements the Municipal O&M Promoter effectively works as a member of the *Alcaldía* and is supervised by a staff member with the authority to review and approve work plans and reports. In addition to this reporting structure, the promoter must pass copies of all monthly reports and the results of water quality sampling to the regional UNOM. ENACAL-GAR reserves the right to monitor the work of the promoter in the community to ensure minimum levels of attention and to see that technical standards are being met. ENACAL-GAR is also able to lobby the *Alcaldía* to ensure that the promoter is provided with adequate resources and logistical support. These relationships are not always problem-free, given the range of municipal authorities in the region. These bodies have varying financial and human resource capacities; they also have varying levels of enthusiasm for the initiative. For the majority of the *Alcaldes*

(mayors), there is a political dimension to employing a Municipal O&M Promoter, as it shows concrete action to resolve problems facing the municipal electorate.

Political tension runs high in rural Nicaragua and in some areas the population is polarized between the two principal political parties. In order to counterbalance some of the inevitable political interference of the incumbent and opposition party members, ENACAL-GAR actively informs and involves a broad spectrum of communities in the process of establishing the Municipal O&M Promoter. In general ENACAL-GAR has longstanding and positive relations with rural communities based on the process of constructing the original systems. ENACAL-GAR uses that historic relationship to reinforce the message that the work of the Municipal O&M Promoter is nonpolitical in nature. Despite these efforts, one of the negative aspects most frequently cited by community members is that the Municipal O&M Promoter is seen as a mechanism of control by the *Alcaldía* and that the introduction of the position is an attempt to take over management of the systems and income generated by the tariff³.

Involvement of the Private Sector

As mentioned earlier, the private sector has had minimal involvement in rural WS&S service provision to date, its involvement being limited to a few instances of borehole drilling and pump installation in some of the larger rural communities. In the last two years ENACAL-GAR made attempts to stock established private shops with spare parts for the rope pump, which is produced in-country, including lengths of rope, special washers that are attached to the rope and lift short columns of water up the rising main, and concrete foot-valves. The pilot initiative did not succeed because the shopkeepers believed sales would not be sufficiently profitable to warrant the financial risks of stocking spare parts. In reality demand is high and the regional UNOM office in Matagalpa continues to operate a revolving fund for the purchase of parts from the factory. These parts are then sold at cost to individuals from community water committees who come in to Matagalpa. An earlier initiative to privatize the sale of chlorine powder in municipalities was derailed by Hurricane Mitch. Following the disaster, huge amounts of chlorine were made freely available to rural communities through a number of government agencies and NGOs, thereby effectively destroying the market.

4. Financing and Cost Recovery

Financing of Recurrent and Capital Costs

For many years much of the capital investment costs for WS&S projects in rural Nicaragua were met by external funding from international donors. Given that history, macro-level planning, budgetary decisions, and donor relations have been handled by the

³ Based on interviews with community and water committee members in the municipalities of San Ramón, San Dionisio, La Dalia, and Tarrabona, May 2000.

central GAR office in Managua. The GoN allocates funds to ENACAL from the national budget to meet its core management and administrative costs; all other staff are funded by program costs. Communities have traditionally contributed to construction costs by providing unskilled labor and locally available construction materials only. In 1998, ENACAL-GAR introduced a pilot project in which communities were required to pay a portion of capital investment costs in cash. This amount varied, with a set contribution for boreholes to cover part of the drilling costs and a proportion of the cost of a piped scheme, amounting to up to 20% of the total budget. Initial results of the pilot were remarkably successful, indicating that residents in rural areas were willing and able to pay for improved WS&S services. After the massive destruction caused by Hurricane Mitch in the region, the community contribution was waived for all those projects requiring repair or reconstruction. However, for the construction of new systems, the community contribution has been re-established as standard policy.

Replacement and rehabilitation costs (other than for the type of massive destruction caused by Hurricane Mitch), including the replacement of pumps, major repairs to piped networks, or expansion of services to new households, are the responsibility of the community. ENACAL-GAR will provide technical assistance and guidance, but the community must either raise the money itself or approach local government or other potential donors for funding.

For each individual system, ENACAL-GAR works together with the community to agree on a tariff range, which accounts for the type of system to be installed, number of users, seasonal fluctuation in cash income, and special compensation for more vulnerable households. Typically, the O&M tariff ranges from C\$1 to \$2 per household per month for a small handpump system, to C\$5 to \$10 per month for a more complex, larger piped scheme. (U.S.\$1=C12.5) Due to seasonal cash flow constraints, many communities agree to pay the quota on a quarterly or bi-annual basis. The quota is designed to cover all maintenance costs and includes an additional sum that is, in theory, used to build up a reserve fund for extraordinary costs (e.g., replacement of capital equipment). As with similar programs in subsistence rural economies, tariff collection can be problematic and can cause serious conflicts within the community. On the other hand, there are many examples in the region of well-organized and motivated communities that have accumulated significant funds and have even established dedicated bank accounts for their system maintenance.

Financing of the Municipal O&M Promoters

Under the new system of decentralized service provision, responsibility for paying salaries and operating costs of the Municipal O&M Promoter generally falls to the *Alcaldía*. Financing of personnel is probably the single most critical constraint facing the system of locally-based service providers. This point is illustrated by individuals on all sides of the system, promoters and *Alcaldías* alike, complaining that it is sometimes not possible to meet salary costs on time or that there is insufficient funding from municipal budgets to cover transport costs. However, these constraints must be seen in the wider

national context, where central government has devolved increasing responsibilities to the municipal level in many different sectors, without a corresponding increase in municipal budgetary allocation.

At present, this model for decentralization is working, albeit with ENACAL-GAR intervening with some of the *Alcaldías* to ensure compliance with the financial arrangements that are part of the agreement. For the longer term, ENACAL-GAR is investigating ways of sharing some of the costs of the Municipal O&M Promoters. Such arrangements may include the semi-privatization of O&M service provision, whereby communities would be asked to pay for a portion of the costs, including those specifically related to water-quality testing. The director of Region VI's ENACAL-GAR believes that this will be possible, especially where communities see the correlation between regular maintenance and the continuity of supply and quality of water provided. However, this transition will be a difficult one as long as the promoter is seen to be linked with the *Alcaldía*; some communities will inevitably view a shift in financial responsibility as a form of indirect taxation on their water supply systems.

5. Legal and Regulatory Framework

The decision by ENACAL-GAR in Region VI to develop the decentralization strategy, with a shift in emphasis toward a greater regulatory role, was made on the basis of the recent institutional reforms of the WS&S sector nationally. According to the new institutional arrangements, INAA is now the organization legally mandated with regulation of both the urban and rural sectors. The law treats the urban sector in great detail, while the regulatory framework for the rural sector is much more ambiguous. In practice, due to its very limited financial and human resources, INAA is almost exclusively concerned with regulation of urban systems. In the absence of any further refinement of the law, it is generally assumed that ENACAL-GAR will continue to function as both service provider and regulator for the rural subsector. In this capacity, the ENACAL-GAR office of Region VI has pushed forward its strategy to decentralize the provision of O&M services to the municipal level. The lack of clarity and definition of the law with regard to the rural sector means that ENACAL-GAR is the government agency with *de facto* responsibility for both service provision and regulation.

The second major legal and regulatory basis for the new model of decentralization of O&M services is the recent modification of the Municipal Law (nos. 40 and 261). This newly modified law provides a legal pretext for involvement of the municipal authority in guaranteeing the provision of adequate social services to the resident population. Under this law the *Alcaldía* actually has the authority to administer water supply systems in rural communities located within the municipality, if it can prove that the systems are being poorly managed *and in addition* can demonstrate that it has the technical, financial, and administrative capacity to run them itself. In practice, there has been extremely few cases where an *Alcaldía* attempted to take over administration of a community-managed scheme. Given the weak financial and technical capacity of the vast majority of the

Alcaldías, this legal point has become a technicality. The regional ENACAL-GAR has used a more general interpretation of this law to encourage *Alcaldías* in the region to take on progressively more responsibility for backup service to rural WS&S projects completed in their territory. In practice most communities do approach the *Alcaldía* for assistance when they experience problems with their water supply system.

Under Nicaraguan law, ownership of the physical infrastructure of the water supply system can be transferred from the state to the community only when the particular community has acquired recognized legal status, or *Personería Jurídica*. Currently, attaining this status is possible only through formation of an Association or Cooperative dedicated to the administration of the water supply system. In practice, ENACAL-GAR has always made a symbolic transfer of the system to the community, witnessed by the municipal authorities and police, making the community *de facto* owner of its system.

A pilot project was launched in Region VI in 1997, with funding from AOS, to strengthen sustainable community management of schemes through the formation of a Municipal Association of Water Committees. This has been an iterative and learning process for both the communities and the institution, and to date one association has been formed in the municipality of San Dionisio, and another is being formed in La Dalia. Using the legal title of the municipality-wide association, each member community is able to register formal ownership of its water supply system. However, the process of forming an association is lengthy and convoluted; and in the case of rural cooperatives there are political sensitivities involved because of Nicaragua's recent history. In recognition of these problems, a new law currently under review by the National Assembly, entitled The Law of Citizen's Participation, establishes a much quicker and less bureaucratic mechanism for granting of *Personería Jurídica* to community organizations with a not-for-profit, social objective. Under this new law the *Alcaldía* will be able to facilitate the granting of *Personería Jurídica* at local level.

6. Environment and Health

Issues relating to health and the environment are included as part of the initial orientation and ongoing training of the Municipal O&M Promoter. The personnel of the UNOM use the training curriculum and materials of the regular ENACAL-GAR program relating to hygiene education, behavior change, sanitation, vector control, and protection of the watershed or direct source of the water system. Municipal O&M Promoters are also included in the training program of the regular ENACAL-GAR staff and participate in relevant training workshops with other line ministries, for example, with the Ministry of Health staff in workshops on standardizing water quality testing and disinfection methods. In turn, the Municipal O&M Promoters are expected to address these issues as part of their regular ongoing activities when visiting rural communities. As mentioned above, the Municipal O&M Promoters (like their regional colleagues from UNOM) are expected to address sanitation issues when visiting their communities. This is part of the sanitary inspection, which includes an assessment of general conditions in the community, risk of source water contamination from chemical products used in

agricultural, surface drainage, solid waste management, and control of animals in and around houses. Where there are problems with the use or condition of household latrines, the promoters are expected to motivate users to improve their practices or give technical advice concerning repair or reconstruction.

Whenever possible, promoters are encouraged to schedule their visits to coincide with the visit of Ministry of Health (MOH) staff in order to coordinate efforts and reinforce health messages. In general there is good cooperation between ENACAL-GAR and MOH staff in the region, and last year a Memorandum of Understanding was signed between the two institutions to facilitate information sharing, promote coordination and planning, and share training and transport resources. The environment ministry in Nicaragua (MARENA) is rather weak institutionally and has more limited human resources than the MOH. Therefore, coordination at the municipal level is more problematic.

Although broad-based training in health and environment is part of the overall job preparation for promoters, and despite the specifics of the job description, health promotion is often given short shrift in the actual performance of the day-by-day job. The general perception of communities and promoters is that the promoters' job is essentially a technical one in which they give physical interventions higher priority than software issues, such as health and hygiene promotion. It should be added that this weakness is not confined to the Municipal Promoters; it is an issue for the UNOM Regional Promoters and some of the regular ENACAL-GAR program staff as well. There has been an ongoing debate within the institution about changing the allocation of resources to increase emphasis on software issues. The ENACAL-GAR management is fully committed to integrating health and environment as part of the O&M backup service. However, as with many such initiatives, the success of the approach relies very much on the attitude of the individuals concerned. At present, there is no systematic monitoring of health or behavior indicators incorporated into the work of the Municipal O&M Promoter. This is an obvious weakness within the program which is partly the result of lack of resources; it is also affected by attitudes about the relative importance of non-technical interventions.

7. Performance

One of the key functions of the regional UNOM is to monitor the status of rural water supply systems and to maintain a database to inform decisions about which system or community may require priority attention. As mentioned above, the Municipal O&M Promoters use that database system to report on the three principal aspects of the water supply project: organization, administration, and technical condition. Various indicators are measured within each category and an overall ranking of "above average," "acceptable," or "below average" is determined in each case. The subindicators used to determine these rankings are given in Table 5. ENACAL-GAR does not include any measure or estimation of the ability of the community to expand its system to meet increased demand resulting from population growth. The monitoring system relies on the

objective opinion of all promoters concerned in reporting on the overall status of the community water supply system. The final report which is entered into the centralized databank in the regional ENACAL-GAR office indicates only the overall ranking of the system, as well as a score for risk of contamination which combines the result of the sanitary inspection and the water quality test results (fecal coliform count per 100 ml).

Perhaps the most problematic performance indicator for rural communities in the region is the level of non-payment of tariff. The amount due but not paid is recorded (in theory) by the treasurer of the water committee in the accounting ledger, which is reviewed by the Municipal O&M Promoter on each visit to the community. The reporting for this

Table 5: UNOM Community Monitoring and Ranking System

Status	Above Average	Acceptable	Below Average
Organization	<ul style="list-style-type: none"> Committee functioning with all members active; Decisions made in previous month respected and adhered to by community; Meetings and decisions fully recorded; Committee functions without external support. 	<ul style="list-style-type: none"> Committee functioning, but incomplete; Decisions made by committee in previous month not universally agreed on nor respected; Committee functions, but with some need for external support. 	<ul style="list-style-type: none"> Committee not functioning; No decisions taken in previous month; Organization impossible without external support.
Administration	<ul style="list-style-type: none"> Tariff system operable with 90% of h/h contributing; Accounting ledgers balanced with monthly financial report; Income covers 100% of running and repair costs of system plus balance. 	<ul style="list-style-type: none"> Tariff system operable, but with less than 90% h/h contributing; Accounting ledgers incomplete and reporting period is more than 1 month; Income covers 100% of running costs only. 	<ul style="list-style-type: none"> Tariff system does not function; Accounting ledgers incomplete and no financial report; Income does not cover full running costs.
Technical	<ul style="list-style-type: none"> Physical system fully functional, out of service <1 day in previous month; Disinfection on regular basis; Water supply 24 hours/day. 	<ul style="list-style-type: none"> System partially functional, out of service 1-3 days in previous month; Sporadic disinfection; Water supply at least 8 hours/day. 	<ul style="list-style-type: none"> System functions poorly, out of service > 3 days in previous month; No disinfection; Water supply < 8 hours per day.

Table 6: Consolidated Monitoring Results (San Dionisio, La Dalia, San Ramón, El Cuá-Bocay, Santa Maria de Pantasma, Jinotega, Muy Muy, Matiguas, Terrabona)

Status	Ranking of Community Water Supply System			
		Above Average	Acceptable	Below Average
Organization	No.	211	75	14
	%	70.4	25.0	4.6
Administration	No.	202	83	15
	%	67.4	27.6	5.0
Technical	No.	204	85	11
	%	68.0	28.4	3.6

criteria to the regional UNOM is based on figures recorded at the latest visit to the community. Results from monitoring reports in the nine municipalities with Municipal O&M Promoters indicate that the current status of the 300 water supply systems under their care is acceptable or above average in 95% of cases for all three categories of performance⁴. The consolidated results are shown in Table 6.

While these results are comparable to the performance of systems attended to by the Regional UNOM Promoters, they may appear to be recording a disproportionate number of systems with above average performance. There are a number of reasons for this:

⁴ UNOM Monitoring Results, ENACAL-GAR, Matagalpa – Jinotega, May-June 2000.

- The majority of the systems in the municipalities of Santa Maria de Pantasma, Muy Muy, Matiguas, and Terrabona have been constructed relatively recently (within the last 12 to 36 months);
- At least half of the systems in the nine municipalities are in small communities with schemes based on drilled boreholes and using the Bomba de Mecate handpump – this type of system tends to present many fewer problems (in all three categories) than the larger, more complex systems; and
- Systems that no longer provide any type of water supply to a community, but which may be under consideration for rehabilitation, are not recorded in the system, thereby giving a relative weighting to the categories of “acceptable” and “above average.”

8. Factors That Contributed to Success

The impetus for change in Region VI originally came from a very practical dilemma: increased demand for backup service combined with limited human and financial resources. Starting in 1996, the management of ENACAL-GAR established a dialogue with both municipal authorities and community representatives in the region to explore and refine the possibilities for decentralized service provision. This process was undertaken with an understanding of the anticipated legal and institutional reforms that were already underway; it culminated in the passage of new laws in 1997 and 1998. The network of Municipal O&M Promoters is the result, now covering approximately 55% of rural communities with WS&S projects in the region. The system is far from problem-free and requires constant attention and follow-up by regional ENACAL-GAR staff; however, it has succeeded in maintaining the coverage levels and standards of service provision to a growing population. It has also succeeded in creating and increasing a locally-based capacity in WS&S within the municipalities. A number of factors contributed to the success of this model in the region.

- *Pro-active Management:* The director of the regional GAR office and head of the UNOM have been instrumental in initiating change before reaching a crisis point in terms of institutional carrying capacity. They were realistic in their appraisal of the existing constraints and also had the vision to anticipate, and work within, the reform process taking place in the WS&S sector nationally and the broader framework of decentralization of power from central to municipal levels.
- *Reputation of ENACAL-GAR:* The longstanding and very positive reputation of the institution in the region should not be underestimated as a factor in the success of establishing this model. The Matagalpa-Jinotega region suffered heavily during the protracted civil war in the 1980s; ENACAL-GAR was one of the few government agencies that continued to operate in remote and insecure areas during that time. Many of the individual staff members have vast experience of the region and are very

well known by the local population, a crucial factor in building confidence on all sides.

- *Donor Assistance:* The financial and technical assistance provided by donors was instrumental in focusing efforts on this important initiative. With a large program in the region, management time and resources to concentrate on this type of strategic, non-operational activity are limited. The continued financial support of AOS and UNICEF and the presence of a dedicated policy advisor from SNV were all important supportive factors.
- *Flexible Approach:* In many ways the application of this model has been an iterative process which has had to account for varied circumstances from one municipality to the next. In a politicized and resource-scarce working environment such as rural Nicaragua, the success or failure of a theoretical model can be determined to a great extent by “real world” constraints. Therefore, the flexible and pragmatic approach adopted by ENACAL-GAR has been a key factor in its successful expansion. The program probably would not have been as successful if a more rigid or “blueprint” style approach had been adopted in or all municipalities.
- *Receptiveness of the Municipal Governments:* While the motivation for becoming involved in this initiative may be largely political, the generally positive and open response of the various municipal authorities has been a key to success. This is true both in terms of paying the O&M Promoter and also in providing logistical and office support, a working space, and recognition as part of the municipal government team.
- *Institutional Transition and Legal Reform:* The fact that the WS&S sector as a whole was undergoing a period of fundamental transition was an important factor in overcoming inertia about decentralizing service provision. This was just as important in overcoming internal resistance to change as it was in putting the argument forward with external stakeholders. The modification of the Municipal Law and the open-ended interpretation of the role of ENACAL-GAR vis-a-vis regulation of the rural sector were both key factors in establishing the legal and institutional basis for the model.

9. Prospects for Long-term Sustainability and Replicability

As mentioned above, this approach to maintaining and expanding O&M service provision at the local level is by no means a perfect system, and a number of difficulties threaten its performance and sustainability in the long term. Perhaps the greatest problem, and certainly the most difficult to quantify, is the underlying perception among the population that regular, preventive maintenance of their system is not a worthwhile investment. For the most part rural Nicaragua is desperately poor; surplus (cash) income is extremely limited at the household or community level. Indeed, the same is true for most municipal authorities in the region, excepting one or two where there is large-scale commercial

coffee production. Despite the best efforts to motivate stakeholders at all levels, there is a limit as to how far people are prepared to invest scarce resources.

Sustainability of the Model in Region VI of Nicaragua

The ENACAL-GAR office in Region VI continues to receive technical assistance from SNV but at a lower level of effort than previously (40% time), and the longer-term financial support from AOS was finalized two years ago. UNICEF continues to be open to providing limited and indirect financial support to the initiative; for example, by allowing older motorbikes from operational programs to be donated for use by the Municipal O&M Promoters. It is clear that the donor support to date has already established the institutional capacity within the GAR office to continue maintaining the current agreements and expanding the system to include new municipalities. However, the longer term performance and sustainability of the model in Region VI is likely to be affected by the following factors:

- *Financial Constraints:* The modified Municipal Law places greater responsibility for guaranteeing service delivery on the municipal authority, without a corresponding increase in central government funding to the municipalities. Until this situation is adequately redressed, the imbalance will obviously continue to result in severe constraints at municipal level to pay for an O&M Promoter. Experience shows that with an absolute short-fall in available funds, rural WS&S is often a relatively low priority. For the rural communities themselves, limited economic opportunity will continue to act as a brake on the amount of investment residents are able to make in their water supply system.
- *Political Interference:* The model relies heavily on the municipal authority to support the decentralization of services, with ENACAL-GAR operating as the technical and regulatory body. Inevitably, certain of the municipal leaders, or *Alcaldes*, will view the provision of services as a means of favoring one group in his or her constituency over another. Conversely, the same community members may see the involvement of the *Alcaldía*, under any circumstances, as a threat to the autonomy of their system. Until now, ENACAL-GAR has been able to use its good standing to act as an independent broker in disputes of this nature. However, in the long term, the involvement of the *Alcaldía* may effectively marginalize those communities that support the political opposition.
- *Legal Transfer of Title:* Until a relatively quick and straight-forward mechanism is established for communities to obtain legal status (*Personería Jurídica*), the final transfer of ownership of the system will be the exception rather than the rule. This factor is a strong psychological determinant in the extent to which communities are likely to invest in the maintenance of their water supply system and to pay for O&M services in the long term.

Replicability of the Model in Other Regions of Nicaragua or Elsewhere

As mentioned in the introduction, there are other examples of regional ENACAL-GAR offices in Nicaragua trying to involve municipal authorities in post-project support. These have not proved to be as successful as Region VI, nor have they been adopted in such a systematic way or on such a wide scale. There are a number of important reasons why this is the case; some relate to conditions or interventions that can be controlled by institutions (either by national government ministries, municipal governments, or international donors), while others are much more subjective and are tied to the general interest and motivation of stakeholders at all levels.

On the basis of experience in Region VI, the factors or conditions that are important for replication of this model are as follows:

National or Subnational Level:

- Donor interest (national government or international agency) in providing the relatively modest, but essential administrative funding to allow for the model to function. This includes hard-to-quantify costs relating to such inputs as management time, training, transport, and technical assistance where necessary.
- The existence of a transparent legislative framework and policy for the decentralization of social service provision to local or municipal level, combined with the corresponding and adequate provision of financial resources allocated from central government budgets. For the foreseeable future, the cost of the programmatic infrastructure will require central government subsidies.
- A competent and credible government institution responsible for regulation and technical standards for the WS&S sector, with a clear policy supportive of community management and administration of rural water supply systems.
- The presence of senior government institution representative(s) at the regional (subnational) level, able to maintain a more or less permanent dialogue with municipal government officials and with other key departments, i.e., health, education, and social action.
- A (small) dedicated group of more experienced and better-equipped staff able to provide supervision, monitoring, and technical back-stopping to the municipal-level O&M promoters.

Municipal Level:

- Political imperative and willingness on the part of the municipal authorities sufficient to guarantee regular and sustained payment of salaries to the promoters, with social benefits and the provision of adequate working conditions.

- A reliable means of transport (usually a motorbike) for the Municipal Promoter and the ability to dedicate a sufficient amount of time to communities without being multi-tasked, i.e., stretched too thin by other assignments, by the municipal authorities.
- Clear communication and a minimum degree of trust established between the municipal government and the rural population benefiting from WS&S systems and the services provided by the Municipal O&M Promoter.
- The organization of communities into legally recognized bodies; formal transfer of title of the land and physical infrastructure of the systems from the implementing agency to the communities themselves.

* * * * *

Acronyms

AOS	Swiss Workers Aid (organization)
CNAA	National Commission for Water Supply and Sanitation
ENACAL	National Water Supply and Sanitation Company
FISE	<i>Fondo de Inversión Social de Emergencia</i> (Social Investment Emergency Fund)
GAR	national-level directorate for rural WS&S, part of ENACAL; there are five GAR regional offices
GoN	Government of Nicaragua
INAA	Nicaraguan Institute for Water Supply and Sanitation
KfW	<i>Kredit für Weideraufbau</i> (German development bank)
MARENA	Ministry of Environment
MOH	Ministry of Health
O&M	operations and maintenance
RWSS	rural water supply and sanitation
SNV	The Netherlands Development Organization
UNOM	Operation and Maintenance Unit in each regional government
WS&S	water supply and sanitation