

Nicaragua: Basic facilities in rural areas I

Ex post evaluation report

OECD sector	14020 Water supply and sanitation	
BMZ project ID	1996 65 233	
Project executing agency	Empresa Nicaragüense de Acueductos y Alcantarillado Sanitario (ENACAL)	
Consultant	Fichtner Water & Transportation GmbH, Mannheim	
Year of ex post evaluation	2010 (2009 random sample)	
	Project appraisal (planned)	Ex post evaluation (actual)
Start of implementation	6/1997	6/1999
Period of implementation	4 years	6.5 years
Investment costs	EUR 9.77 million	EUR 8.2 million
Counterpart contribution	EUR 2.3 million	EUR 0.53 million
Financing, of which FC funds	EUR 7.67 million.	EUR 7.67 million
Other institutions/donors involved	-	-
Performance rating	4	
• Relevance	3	
• Effectiveness	3	
• Efficiency	4	
• Overarching developmental impact	3	
• Sustainability	4	

Brief description, overall objective and project objectives with indicators

The project's overall objective was to reduce the risk of waterborne disease in several municipalities within Nicaragua's Matagalpa Department and in the adjoining municipalities of neighbouring Departments (the programme area). The programme objective was revised during the course of the project. At the time of ex post evaluation, it consisted of (1) providing the population of selected locations (small towns and rural settlements) with an adequate year-round supply of safe drinking water and (2) in selected rural locations, ensuring the proper disposal of domestic sewage. The following indicators were set as measures of project objective attainment:

Water supply component:

- In the selected locations, the water supply system should reach at least 80% of the population throughout the year (this rate to include supplies to connection points located within houses and domestic yards, as well as access to public water taps). Average daily water consumption per person should reach 80 L for consumers in small towns (with a domestic connection) and 60 L for rural

consumers with a domestic connection and 30 L when using public water taps.

- Water quality should conform to the INAA/ENACAL standard, which is guided by WHO normative guidelines for developing countries.

Sanitation component:

- 80% of the rural population which is being supplied with drinking water should have access to latrines and be using them properly.

Project design / major deviations from original planning and their main causes

The programme agency was the state water utility, 'Empresa Nicaragüense de Acueductos y Alcantarillado Sanitario' (ENACAL). At the beginning of the project, facilities operation was handled by the independent operating company 'Acueductos de Matagalpa' (AMAT). However, in October 2009 AMAT was formally re-integrated into the ENACAL state grouping. This project, designated as SANEBAR, comprised the following measures: the construction, rehabilitation and expansion of the central water supply system in six small towns in Matagalpa Department (Ciudad Darío, Esquipulas, Matiguás, MuyMuy, Terrabona, Chaguitillo) and also in some 60 rural localities (around 80,000 inhabitants in total), together with appropriate faecal waste disposal measures (latrines). Alongside these activities, the project agency provided local water committees in the rural areas with basic training in operational management. In addition, it was estimated that a further 10,000 inhabitants would benefit from a fund for micro-projects.

Programme activities were scaled back in the course of the project. This primarily involved sewage disposal in small towns, but the scope of activities in rural locations was also affected. The costs of the small town water supply system were higher than planned; these reductions were implemented in order to cover those costs within the framework of funds available. Because of the increased involvement of other donors in the region, this choice of priorities was justified.

According to the indicators, the objectives for small town water supply were achieved overall: project agency statistics show that over 80% of private households were connected to the central water supply system, and poorer 'barrio' districts were also linked to the central supply network. Almost every household in the area covered by the programme now has its own water meter. In December 2009, average consumption stood at just under 100 L per person per day. Water quality is being continuously monitored and conforms to international standards. Random surveys indicate that the target group is satisfied with the quality of the water provided. The weakness in water supply to the small towns - as at the national level - is in its lack of continuity: in each of the six towns, supply interruptions and daily rationing are a matter of routine. However, these interruptions generally last no more than 24 hours, so the population have thus far been able to meet their daily water needs from their own reserve supplies. These restrictions indicate that the network is overloaded.

In the rural areas, achievement of objective indicators is more difficult to quantify than in the small towns. Evaluations here are based on surveys of a random sample of locations and hamlets. Today, the small-scale supply facilities (gravity-fed systems and hand pumps) in the small communities within the administrative districts of Río Blanco and Matiguás are still mostly operational, and are kept in rudimentary working condition by their users. Although not maintained in perfect condition, they still supply a section of the population with an acceptable quality of drinking water. The targeted supply

levels of 60 L and 30 L per person per day are largely being achieved. The latrines provided were located during site inspection; they were mostly in a usable condition and were being put to use. Viewed against the difficult conditions surrounding implementation, objective attainment in these small villages, taken altogether, is adequate.

With regard to the overall objective, Health Ministry data shows that the incidence of diarrhoeal disorders in Matagalpa Department over the period from 1998 to 2009 ranged from (approximately) 400 to 700 per 100,000 inhabitants. Based on international comparisons, this is, on the whole, an acceptable morbidity rate.

Key results of the impact analysis and performance rating

This project aimed at improving community water supplies; in doing so, it has contributed to fulfilling the basic needs of the target population, as well as to improving their health and reducing their poverty levels. The project objectives and the overall objectives can be considered as having been attained. However, following the re-integration of AMAT, the operating company, into the ENACAL group, it is to be expected that a commercially viable operation will no longer be assured. Furthermore, it could be problematic that maintenance and rehabilitation work for the facilities provided will not now be taken over, as originally planned, by the 'Fondo de Inversión Social de Emergencia' social fund (FISE), the most important financing institution in the rural water sector.

Relevance: the project fitted well into the wider context of German development cooperation. Coordination during programme implementation with other donors in the sector was equally good. The core problem - the need for improved drinking water supply and better sewage disposal in Matagalpa department - was, on the whole, correctly identified at the time of appraisal. Nevertheless, there were some errors of detail in the programme planning. Firstly, the cost of the water supply system in the small towns was underestimated, which led to cutbacks in other programme investment areas. Secondly, during the course of the programme there were several reports that, during and after the civil war of the 1980s, large sections of the population had migrated away from rural areas into the small towns. This was overlooked at project appraisal, and inflated the project's objective targets for rural areas. Due to recent sector reform, this programme is no longer in full accord with current sector policy for Nicaragua. Hence the project's relevance, viewed altogether, has been assessed as no more than satisfactory (rating: 3).

Effectiveness: taken overall, the project's objectives for water supply to the small towns were achieved, according to the objective indicators. From project agency data, the proportion of households connected to the central water supply system exceeded 80%, and poorer quarters of the towns were also linked to the central supply. Almost every household has its own water meter; public water taps here are rare. However, the limited functionality of the facilities in the municipality of Esquipulas (which account for 24% of investment costs) has had a negative impact on the assessment. The water supply here can fail completely for days at a time, due to high levels of post-rainfall sediment contamination. In Matiguás this problem was remedied in November 2009 by the installation of a new (and expensive) high-speed filter device.

With regard to the severely curtailed investments in rural water supply systems, the small-scale gravity-fed supply facilities and hand pumps installed under SANEBAR remain largely operational today, and are kept in makeshift working condition by their users. According to the figures available, just under 10,000 people in rural areas have

been reached. Taking as a basis the target figure adjusted for the budget deployed (7,700), more people were reached in relative terms than was expected under the original plan.

Having taken into account the reduced functionality of the Esquipulas facility and the problem that affected Matiguás until 2009, together with some indications of a degree of network overload (i.e. water rationing), we have assessed the overall effectiveness of the programme as satisfactory (rating: 3).

Efficiency: actual investment costs were higher than planned, leading to relatively high specific investment costs for water supply systems in the small towns. As a result of this, and of the relatively lengthy delays in project implementation, production efficiency is considered unsatisfactory. The operator's average revenues are just sufficient to cover operating costs per cubic metre. The cause of this slim margin is the low level of the tariff, which is fixed by the State. No reserves have been built up for reinvestment. Compared to the investments in the towns, the costs for the simple equipment provided in rural areas have been at a much lower level; they have remained reasonable and fairly steady. Physical losses (approx. 25 %) and collection efficiency (almost 100%) are rated as good. Consequently, allocative efficiency has been assessed as satisfactory. Since cost recovery is expected to continue deteriorating in the future, the efficiency of the overall project has been assessed as unsatisfactory (rating: 4).

Overarching developmental impact: the positive developmental effects of the project in small towns are evident. SANEBAR's impact in rural areas is also judged as positive. Despite extensive investment in the region by various donors, waterborne diseases (diarrhoeal disorders) have not fallen significantly since 2004 (based on regional statistics for diarrhoea). However, the figures have improved dramatically compared to the situation that prevailed after 1998 (Hurricane Mitch), and now stand at a comparatively acceptable overall level. According to statements from the target group, diarrhoeal disorders do not constitute a serious problem. In the Matagalpa region, which was badly affected by the civil war, it was important to provide small towns and country districts with at least a bare minimum of public services, in order to stabilise the region both socially and economically. Improved access to drinking water has benefited women in the programme area most of all, since they still bear the burden of fetching water. Being connected to a central water supply system is estimated to save every adult one working hour per day. The programme's overarching developmental impact was judged as satisfactory (rating: 3).

Sustainability: it was noted that users in rural communities have been operating the smaller-scale facilities and maintaining them in at least a rudimentary working condition since 2003, even without external support. With regard to small town water supplies, the independent business model used in *Departamento Matagalpa* until spring 2009 proved the principle that the service could cover its operating costs. This is mainly attributable to a certain degree of autonomy in price-setting enjoyed by AMAT, which enabled it to design the water tariff so that it covered operating costs. In recent years, the organisation had benefited from a well equipped operational structure (e.g. technical staff, branches in the municipalities, and decentralised stockholding of minor spare parts).

In this regard, and by way of contrast, the project agency ENACAL merits critical scrutiny. ENACAL is the centrally structured water utility at the *Departamentos* level; it has no decision-making autonomy. Up to 95% of investments and re-investments are financed by international donors. Timely renewal of the water supply systems should only be expected, therefore, if donor involvement continues. With AMAT re-absorbed

into ENACAL's centralised structure as a *Delegación Departamental*, the scope to design the tariff, which AMAT enjoyed until October 2009, will no longer exist. Current and foreseeable sectoral developments and macroeconomic trends are ill-suited to help in sustaining the effects of this project. For that reason, we do not consider that the positive changes described above which were introduced by SANEBAR (predominantly in small towns) will prove durable over the investment period. The sustainability of the project has therefore been assessed as unsatisfactory (rating 4).

Due to the lack of sustainability, the overall developmental success of the programme is considered unsatisfactory (rating: 4).

Notes on the methods used to evaluate project success (project rating)

Projects are evaluated on a six-point scale, the criteria being relevance, effectiveness (outcome), “overarching developmental impact” and efficiency. The ratings are also used to arrive at a final assessment of a project’s overall developmental efficacy. The scale is as follows:

- | | |
|---|---|
| 1 | Very good rating that clearly exceeds expectations |
| 2 | Good rating fully in line with expectations and without any significant shortcomings |
| 3 | Satisfactory rating – project falls short of expectations but the positive results dominate |
| 4 | Unsatisfactory rating – significantly below expectations, with negative results dominating despite discernible positive results |
| 5 | Clearly inadequate rating – despite some positive partial results the negative results clearly dominate |
| 6 | The project has no positive results or the situation has actually deteriorated |

A rating of 1 to 3 is a positive assessment and indicates a successful project while a rating of 4 to 6 is a negative assessment and indicates a project which has no sufficiently positive results.

Sustainability is evaluated according to the following four-point scale:

Sustainability level 1 (very good sustainability)

The developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.

Sustainability level 2 (good sustainability)

The developmental efficacy of the project (positive to date) is very likely to decline only minimally but remain positive overall. (This is what can normally be expected.)

Sustainability level 3 (satisfactory sustainability)

The developmental efficacy of the project (positive to date) is very likely to decline significantly but remain positive overall. This rating is also assigned if the sustainability of a project is considered inadequate up to the time of the ex post evaluation but is very likely to evolve positively so that the project will ultimately achieve positive developmental efficacy.

Sustainability level 4 (inadequate sustainability)

The developmental efficacy of the project is inadequate up to the time of the ex post evaluation and is very unlikely to improve. This rating is also assigned if the sustainability that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

The overall rating on the six-point scale is compiled from a weighting of all five individual criteria as appropriate to the project in question. A rating of 1 to 3 indicates a “successful” project while a rating of 4 to 6 indicates an “unsuccessful” project. In using (with a project-specific weighting) the five key factors to form an overall rating, it should be noted that a project can generally only be considered developmentally “successful” if the achievement of the project objective (“effectiveness”), the impact on the overall objective (“overarching developmental impact”) and the sustainability are considered at least “satisfactory” (rating 3).