



Urban-rural disparity in water supply in Morocco

Peter Koenig

As in many developing countries, investment in water supply and sanitation in Morocco has a strong urban bias. Here a major plan, based on demand-responsive, community-based approach, is being implemented in an attempt to extend rural coverage on a cost-effective basis.

Public investment in Morocco has a strong urban bias, despite the fact that 75 % of the country's poor live in rural areas. In recent years, the government has become increasingly sensitive to this rural-urban disparity, particularly after severe droughts in the early 1990s precipitated a mass exodus to urban areas. In 1994, the government submitted to the National High Council for Water and Climate a master plan for development of rural water supply. The

Council approved the plan, which aims for 80 % rural coverage within a ten-year period, and in October 1995, the master plan was converted into a country-wide rural water supply and sanitation (RWSS) programme called PAGER (a French acronym for clustered rural water supply and sanitation).

A three-pronged strategy

When PAGER was introduced, the government asked the World Bank to help finance a national RWSS programme and to prepare a project. A World Bank-FAO Co-operative Program responded with a proposal for a US\$250 million project, although the country's limited implementation capacity led planners to formulate a reduced proposal for US\$120 million, backed by the World Bank (contributing US\$26 million of the total), the German Kreditanstalt fuer Wiederaufbau (US\$16 million), Agence Francaise de Developpement (US\$18 million), the Japanese OECF (US\$30 million), and contributions from the Moroccan government and beneficiaries (US\$26 million).

The project seeks to improve the access of rural populations to safe potable water and to support the government of Morocco's master plan for the development of rural water supply. The overall objectives are to improve the health and productivity of rural populations, and to reduce the burdens on women, who are responsible for fetching water and hauling it over long distances. The project hopes to benefit rural girls in particular, whose water-fetching duties keep their primary school attendance low. The project will complement investments in primary education already being made through the Morocco basic education project, and will

Background

Morocco has a population of about 27 million, nearly half of which is urban-based; per capita GNP in 1996 was US\$1280, placing Morocco among the lower middle-income countries of the world. The climate is semi-arid, with annual rainfall ranging from over 1500 mm in the High Atlas region to less than 250 mm in the less-populated southern region which stretches into the Sahara. Morocco is prone to frequent droughts, with one of the worst this century in 1994-5 when rainfall dropped to less than half its average level, prompting agricultural GDP to decline by 45 per cent.

Although Morocco has been remarkably successful in providing virtually all urban inhabitants with potable water, only 20 to 30 per cent of the rural population (of 14 million) in 1996 were estimated to have access to potable water (figures are as low as 10 per cent in some southern provinces). Rural sanitation includes a range of options - from dry pit latrines to septic tanks and communal septic tanks, small-bore sewer systems in some rare cases, to block latrines in schools and markets. Adequate (i.e. safe) coverage of this kind is estimated at about 35 per cent nationwide, although this figure masks a much grimmer reality in the poorer southern and mid-atlas provinces, where less than 10 per cent of the rural people have latrines or other forms of safe human waste disposal. This contributes to significant health problems, especially in the denser rural communities.

The dismal rural water and sanitation situation is the primary cause for the poor health of the rural population. In 1995, the Ministry of Public Health (MPH) recorded 1,064,000 cases nationwide of diarrhoea in children under five years of age, while some unofficial estimates are double this figure. These water and hygiene-related diseases are more prevalent in poor provinces which also suffer from water shortages. In 1989, the MPH reported about 18,000 deaths linked to diarrhoeal diseases among children, representing close to 30 per cent of all deaths in this age group (with unofficial estimates again much higher). Although more recent, precise country-wide statistics are not available, MPH estimates that about 40 per cent of all diseases are water- and hygiene-related. It is recognized that long-term sustainable impact on water-related diarrhoeal diseases can be achieved only through preventative measures such as safer drinking water, sanitation facilities and health education.

include most of the provinces included in the education project.

The government and its four co-financers agreed to a joint, three-pronged strategy based on a demand-responsive, community-based approach:

- *Participation.* The project will use a participatory rural appraisal (PRA) process involving beneficiaries (including women) to assure that the project is demand-oriented and properly dimensioned and located.

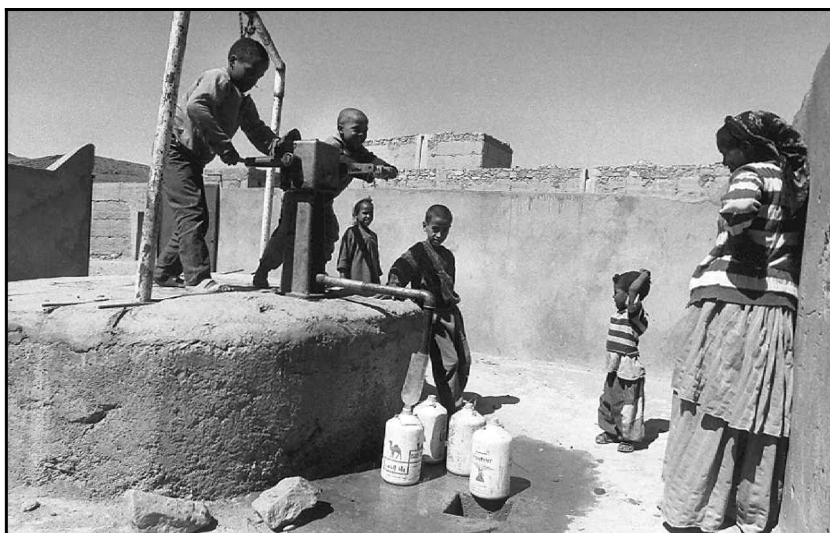
- *Cost-effectiveness.* To assure that the largest possible percentage of the population is reached, the project will give preference to reconstruction, expansion and rehabilitation of existing sources of water where feasible. The project will also establish an initial grant ceiling of DH1200 (US\$130) per beneficiary to provide incentives for cost-effectiveness.

- *Local institutions.* To assure sustainability, full operation and maintenance costs will be recovered through water charges, to be collected by local individuals or water user associations. The project will also provide training to strengthen the capacity of local institutions.

The project was divided into two distinct phases (with US\$57 million allocated for the first and the remaining US\$63 million for the second) so that lessons learned in the first phase could be incorporated into the second. The project was also broken down into four major components:

- rural water supply (receiving 82 % of total funding);
- rural sanitation (9 %);
- local institutional strengthening (8 %); and
- central and provincial support (1 %).

It specifically targets the country's poorest provinces, with the highest concentrations of rural population (27 of the country's 58 total rural provinces) and is expected to benefit about 1.3 million rural inhabitants. In addition to its projected 15 % rate of return, the project aims to provide safe, potable water from public taps less than one kilometre from the homes of its beneficiaries, which should considerably reduce the workload for children and improve their school attendance. The quality of water will also be improved, and small children in particular should receive significant health benefits in terms of



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reduced water- and sanitation-related diseases.

Implementation is to be split between two government agencies, the Directorate-General of Hydraulics (DGH) of the Ministry of Equipment, and the financially autonomous, commercially-run public enterprise ONEP, which is responsible for the national supply of potable water (and is also under the auspices of the Ministry of Equipment).

While DGH is providing basic RWSS services in rural areas, ONEP is mainly responsible for RWSS in small and medium-sized towns. For the purpose of PAGER, ONEP has been assigned the task of extending RWSS services to small rural communities as well, especially those close to ONEP-owned overland pipelines which run between major cities.

A community-based, demand-responsive approach

Communities self-select according to a set of basic criteria, including willingness to pay for operation and maintenance (O&M), and 20 % of investment costs; willingness to create a Water User Association (WUA) to operate and maintain the RWSS system; and sufficient availability (at least 20 litres per capita per day) of potable drinking water. To involve the rural population each province has a Mobile Participation Team (MPT), composed of an RWSS engineer or technician, a health or hygiene specialist, and a social communicator. At least one of these should be female to facilitate collaboration with rural women, who are responsible for obtaining and managing household water, for household hygiene,

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and for raising children. The MPTs are integrated into the decentralized organizational structure of the Directorate-General of Hydraulics or ONEP, and are systematically trained by a special team in disciplines including appropriate, low-cost RWSS engineering, hygiene, O&M, basic accounting, and self-monitoring and evaluation.

About 30 new villages are contacted by MPT each year, although a third or more usually drop out because they are unable or unwilling to meet the project criteria. As the project gains momentum, however, the drop-out rate is expected to decline, and project participation has been shown to ignite interest in neighbouring villages, including many which initially declined to participate.

MPTs meet regularly with participating villages to raise awareness, train and prepare them for the project. They also help the villagers to select the water supply system that best fits their needs and willingness to pay, and to help establish the village's WUA. The project preparation stage may last from six to eight months before actual physical construction begins, depending on the preparedness of the community. During and after construction, MPTs continue to visit the villages to offer assistance and advice for up to two years, until the community and its WUA are able to manage their new RWSS system autonomously.

The number of MPTs has increased from 27 to over 40 since the project was implemented two years ago, and additional MPTs are being created and trained to extend the project into other provinces. Although the Directorate-General of Hydraulics and ONEP are responsible for

overall project implementation, key tasks such as bidding, contracting and supervision of construction are managed at the village level. The MPTs work with the communities to prepare them socially and technically, until the WUAs eventually take over management of the systems, with technical back-up from the government. The communities are also beginning to work with small entrepreneurs in the private sector, who are often called in by the communities to maintain, repair or even operate the small systems.

The MPTs also play a role in hygiene education, explaining to villagers the relationship between hygiene and health. Women and children, in particular, receive regular education about safe latrine or toilet use, the need for handwashing after defecation, how to transport and store water safely, how to keep public standpipes or outdoor taps clean, and safe washing and handling of food. These messages, repeated several times during and after project preparation and implementation, are accompanied by the promotion of household sanitation facilities — which can take the form of latrines or in some cases low-cost, small-bore wastewater collection by communal septic tanks. But although adoption of such facilities is promoted, they must be demanded by the households, which must agree to bear the costs themselves. The availability of a safe wastewater and excreta removal system is now a pre-condition for connecting water supply to a house, as house connections generally increase water use and, consequently, wastewater flow. The project also foresees construction of water supply installations and sanitation facilities (block latrines) in schools and markets.

Monitoring and evaluation

Baselines data is collected on health (particularly that of children), available water and sanitation facilities, school attendance (especially by girls), and other indicators in a village profile conducted before project implementation. This is followed by later work (perhaps 12 to 18 months after implementation) with villagers to measure the project's impact, comparing the new findings to those in the initial baselines report. This monitoring and evaluation is also conducted by the MPTs, and is carried out at two levels, in a participatory way:

■ SANDEC

The Department of Water and Sanitation in Developing Countries (SANDEC) in Switzerland aims to assist in developing appropriate and sustainable water and sanitation concepts and technologies adapted to the different physical and socio-economic conditions prevailing in developing countries.

The site contains links to on-going SANDEC research and development projects, notably on roughing filter technology, solar water distillation, management of sludges from on-site sanitation and municipal solid waste management in developing countries.

<http://www.sandec.ch/>

■ International Water Management Institute

IWMI, formerly known as the International Irrigation Management Institute, is a research centre on irrigation management. It maintains a network of national research centres and a series of thematic research programmes covering topics such as sustainable management of water delivery and disposal; improvement of public irrigation organizations; sector and local level management of irrigated agriculture; environment and health; choice and use of technology; and gender issues.

The site includes a library catalogue, newsletters, research reports and summary data from meteorological stations world-wide.

<http://www.cgiar.org/iwmi/>

■ Pan American Information Network on Environmental Health (Repidisca)

Repidisca disseminates information on environmental health and epidemiology, sanitary and environmental engineering, water supply, wastewater, solid waste, hazardous waste and occupational health. Repidisca operates in the Latin American and Caribbean region.

The site contains links to biographical databases (85,000 records), an institutional directory on environmental health, thesaurus and an 'information bank' including dissemination sheets, news and publications catalogues.

<http://www.cepis.org.pe/enwww/infotecn.html>

■ International Institute for Land Reclamation and Improvement

Research, publication and documentation organization working on land and water resources (specifically irrigation and drainage). Information services include the DRAIN database on current research, institutions, and experts; and a question and answer service.

<http://www.ilri.nl/index.html>

Compiled by Darren Saywell, WEDC

- through the villagers themselves with the assistance of the social mobilization teams;
- at the level of the implementation unit, which will measure the success of the project by comparing the results with the overall targets.

Such an evaluation ('structured') will take place perhaps halfway through the project, but in reality it takes place continuously, as the annual investment programme is compared with actual achievements.

Since a significant impact is not expected to appear until a year or more after completion of RWSS installations, a structured monitoring and evaluation exercise has not yet taken place. A recent survey, however, showed that in at least one village primary school, attendance by girls has more than doubled since the village received a new water supply system about a year ago

Issues and lessons two years on

Although planners expect PAGER to take two to three years to really hit 'cruising speed', the project is perceived to be on the right track. A critical factor in the project's overall success appears to be the unconditional commitment by the government at all levels to embark on this community-based, demand-responsive approach. The government has made available significant support in terms of staff and equipment — including staff compensation for intensive field work, vehicles, computers, water-testing kits, instruction materials, and most importantly, training for the MPTs — as well as an adequate budget for investment and engineering studies.

Other factors include well-staffed and trained MPTs, who are highly motivated and willing to repeat visits and messages to villagers as often as it takes to make them 'stick', and active World Bank support in the coaching of government officials at all levels, supervision and monitoring, and above all, flexibility in adjusting processes to realities.

about the author

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