



Micro options can help bottom-up approach

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Introduction of the Rota-sludge to a micro well-drilling project in Nicaragua has cut the time taken to create a well from 20 days to three. Similar schemes might help developing countries achieve Water Decade goals.

Photo: www.practicafoundation.nl

As industry experts warn that the world is failing to achieve the MDG targets for water and sanitation provision, Allerd Stikker of the Ecological Management Foundation calls for a fresh approach.

To meet the United Nations Millennium Development Goals (MDGs) for global water and sanitation provision by 2015, an additional 1.5 billion people need to have access to safe drinking water and an additional 2 billion to sanitation. If the water needs of agriculture and megacities are also to be met, an additional US\$100 billion annual investment in services and infrastructure will be required.

Michel Camdessus's report *Financing Water for All* published in 2003, lists 15 major structural, political and cultural problems that have to be surmounted to attract the necessary funds. Although the report ends optimistically, it seems highly unrealistic to suppose that the required financial resources will become available.

With respect to actions and results, the interim report of the Millennium Project Taskforce on Water mainly repeats what has been said during the last five years in many reports on the water issue. The approach is predominantly top-down, with emphasis on global, national and local government policy. Macro investments in conventional, centralized service, infrastructure and technologies are preferred, with scant attention to non-conventional technologies and bottom-up approaches.

Within the macro context, the increasing demand for water in urban areas, where 5 billion people are expected to live by 2025, and mostly within 50 miles of the seacoasts, a major contribution to fresh water supply can be expected to come from large-scale desalination.

However, this option is neglected in the MDG reports. Meanwhile, the cost of large-scale desalination is decreasing steadily, moving towards the increasing marginal cost of conventional water withdrawal and reuse.

Currently, desalination units are being built and planned in China, Taiwan, Australia, Singapore, Pakistan, India as well as in Spain, the Mediterranean, Trinidad and the USA, whereas until recently the main focus was the Middle East.

It is to be expected that this option, which today services only about 3% of drinking and sanitation water demand, could move up to servicing 10-20% in the next decade. This development needs to be clearly conveyed to policy-makers, and become part of action programmes to reach the MDGs for water.

The micro context

The Millennium Project Taskforce devotes a modest paragraph to the option of small, locally-operated water supply and sanitation systems in rural and

peri-urban areas. However, the potential of micro-solutions in this sector, where more than one billion of the MDG-targeted people live, is very high.

A bottom-up, community-orientated approach, with simple, decentralised, stand-alone, small-scale, non-conventional water supply systems, owned and operated by the users could give rise to flexible, efficient, non-bureaucratic water management with less opportunities for corruption.

The successful introduction of new methods and techniques at grassroots level depends entirely on engaging local communities in defining their needs, taking into account local circumstances, cultural heritage, participation and manufacture.

In general, for both macro and micro approaches, the priority list for improving water demand and supply, in sequence of effectiveness and costs, read as follows:

- Reduce consumption
- Recoup rainwater
- Reuse wastewater
- Recover groundwater (sustainably)
- Reinvent appropriate technologies
- Resource brackish and seawater

Micro-level methods and techniques are available for all of these options, including rainwater harvesting and solar or wind energy-based desalination. Useful resources are *Smart Water Solutions*, published by the Netherlands Water Partnership, in cooperation with six NGOs and supported by the Dutch government and the *Sourcebook of Alternative Technologies for Freshwater Augmentation in Small Islands Developing States* by UNEP and IETC. Institutions like the World Bank, Asian Development Bank, IRC, Global Water Partnership, Rainwater Partnership, the International Rainwater Catchment Systems Association, International Desalination Association and many others have websites and publications on practical water solutions. However, what is currently lacking is a systematic up-to-date international information source. An international global action is required to consolidate all the available systems on a website and in a handbook.

Implementation

Many NGOs are presently engaged in micro water solutions at grassroots level, but the application and implementation could be expanded by many more NGOs and possibly other institutions. For instance the various faith institutions working internationally recently established the Alliance of Religions and Conservations, where institutions of 11 world faiths have combined forces to work on nature conservation. Faith organisations cover more than 50% of the world's educational institutions and can offer a substantial and powerful network to introduce sound water management at community level.

A combined international effort to coordinate and formulate a bottom-up approach for implementation and education of appropriate systems would offer a boost to the micro context in the Water Decade.

Micro-finance

In the last 20 or so years, the phenomenon of micro-finance has grown into a major and mature mechanism for serving the world's poorest people. With experienced Micro Finance Institutions (MFI) in all parts of the developing world, a link with water provision for rural and peri-urban communities would be quite logical.

As the investment and installation costs, depending on the availability of local supplies, ranges from between US\$50 and US\$50,000, micro/meso financing can be an effective option. The multiplier factor of an efficient local water supply can be considerable; the economy benefits as water-fetching labour hours are saved or costly water transportation is reduced.

Promoting the micro approach can substantially improve the global community's chance of achieving the Water Decade's goals. Implementation of a great number of micro solutions can achieve a macro effect.