



The Rural Water Supply Network

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There is more to improving rural water supplies in Africa than just concentrating on handpumps. The Rural Water Supply Network (RWSN) has broadened its original focus and now has three areas of research and information provision: self-supply, cost-effective boreholes and sustainable handpumps.

Even after nearly three decades of focused effort on water and sanitation provision in developing countries, well over one billion people are classified as 'unserved', meaning that they take water from an unimproved or, probably more often, locally improved source. Out of the remaining rural ('served') people in developing countries, probably at least another 1–2 billion rely on point groundwater sources: hand-dug or machine-drilled wells with bucket lift, handpumps or motorized pumps. Such sources have proved expensive to develop, and challenging to manage, especially in Africa. It is against this background that RWSN has developed and evolved over the last 15 years.

The Rural Water Supply Network evolved from the Handpump Technology Network (HTN), when it broadened its mission from handpumps to focus on improvements in the application of sustainable groundwater technologies. HTN was born in 1992 when the International Handpump Workshop in Kakamega (Kenya) mandated the formation of a network on handpump-based rural water supply. SKAT established an executive secretariat for the network in Switzerland. At the Fourth RWSN Forum in Durban it was agreed that RWSN would focus its work in three flagship areas where it believes it can contribute significantly: self-supply, cost-effective boreholes and sustainable handpumps.

Development-based strategy

Decentralization and demand-responsive approaches have shifted the

initiative and the responsibilities to local communities. In order for rural communities to seize the opportunities offered by these policies, they need:

- increased access to information
- arrangements to enable economies of scale and provide technical services to dispersed rural settlements
- holistic approaches which link domestic water-service provision to livelihood systems.

Although technology remains a central element of rural water-supply services, technical issues have slipped off international and national agency agendas. Water technologies suitable for rural communities in poor countries need to be adapted to local needs and capacities and cannot be derived from technologies used in developed countries. Appropriate technology selection and standardization are essential to establish effective supply chains, including local manufacturing capacity and to ensure spare parts' supply. Together, these factors have a significant impact on the viability of maintenance systems.

A high proportion of community water supply systems are not operational. Some manufacturers established in African countries have closed or are reporting difficulties in marketing their products. Drilling costs are high and the transition from parastatal fleets to a private competitive industry is progressing unevenly and with many problems. Supply chains for services, parts and equipment hardly reach rural communities. Engineering and financial analysis should also focus on the lower-cost and simpler technologies appropriate to rural water supply. There

is a significant gap between accepted RWS technologies and a host of household-level solutions, which are widely practised and critical to the lives of poor people, yet not regarded as legitimate, cost-effective and sustainable service provision.

Given the lack of overview on technology issues, RWSN's strategy is to take the lead in organizing the potential constituency for a global, but largely African-focused broad-based RWS technology network. The objective is to build up the capacity for knowledge sharing and to strengthen the development of technologies and supply chains.

Guiding principles

RWSN is a global knowledge network promoting good practice in rural water supply development. It grew out of the need to focus greater attention on the challenge that, worldwide, 80 per cent of the people without access to safe water live in rural areas. Reaching the Millennium Development Goal requires crucial improvements in the provision of sustainable rural water supply services.

RWSN aims to improve the living conditions of the rural poor through increased access to safe water. It blends a strong engineering background with institutional, financial and social principles. It promotes sound practices, provides tools, and promotes innovation and triggers processes that improve the application of affordable and appropriate water-supply technologies for rural communities.

RWSN's three flagship areas reflect its perception of the status of the 'unserved' and 'served' rural poor, and



Improved privately owned wells may provide equally high-quality water as conventional communal supplies

their particular needs for developing and managing their water supplies.

Self-supply

This means that stakeholders are encouraged to build on the investments that households already make. African countries report low coverage rates for safe water. Yet, the many million who are 'unserved' draw their water from sources that they have traditionally found or developed themselves. Household-centred technologies can be upgraded to safe water sources, offer greater security to the poor; and reduce dependence on remote technologies.

Self-supply focuses on water-supply interventions and management at household level. It is a concept that builds on existing householder and small-group investment in water supplies and treatment that is complementary to conventional community water supply. Self-supply is a rural water-supply strategy, rather than a specific technology, as it has implications for policies, funding, community support networks and sustainability. The self-supply concept aims to create an environment within which people can invest in water supply in a structured and well-informed way. Over time and using progressive steps, they will have access to water of an improved convenience, quality and quantity which ultimately may equal that of conventionally protected communal supplies. The difference is in ownership and greater sustainability.

Cost-effective boreholes

Borehole costs can be reduced while ensuring construction quality. Drilling costs in Africa are comparatively high, typically 5 to 15 times more than in Asia. They account typically for 80 to 90 per cent of rural water supply investment costs. The potential for cost saving is tremendous. An average cost reduction of 10 per cent is realistic, and, if achieved, would result in savings of US\$0.5–1.0bn. The development of a local capacity for low-cost drilling is a critical factor, as about one million boreholes need to be drilled in Africa alone.

To achieve this it is important to create an environment that encourages and enables successful private-sector participation in drilling. Building capacity for procurement and contract supervision of drilling contracts helps to reduce cost. Decentralization and community-driven principles need to be reconciled with the requirement to plan drilling campaigns for economies of scale. Low-cost drilling technologies, hand-powered and motorized, need further development or adaptation.

Sustainable handpumps

This flagship aims to improve functionality and supporting sustainable rural water services. Problems of operation, maintenance and management coupled with the inability to reach outlying rural areas call for new approaches to sustain investments. Adoption of cost-efficient technology needs to be coupled with functioning, community-based mainte-

nance systems. Poor-quality and non-affordable systems lead to neglect of operation and maintenance. Project-centred procurement, buying directly from abroad, is often the main cause of broken-down supply chains. Users need to develop a fruitful customer-supplier relationship.

RWSN focuses on identifying good practices and setting out guiding principles. It seeks new approaches to handpump sustainability that can be characterized as follows: improved technology, new management models, and increased cost-recovery models (water pays for water). It encourages successful private-sector participation in supply chains for goods and services.

In relation to handpump technology, RWSN also maintains its interest in supporting best practice in handpumps and their implementation in rural water-supply programmes. Technology selection and standardization are important factors and often a precondition to establishing local manufacturing capacity and ensured spare parts' supply. RWSN maintains and disseminates the international specifications of public domain handpumps. Local manufacturing of handpumps contributes to improving sustainability as it reduces dependence on imports. RWSN facilitates market-driven industrial capacity building and supports production through local industries.

How can you participate?

RWSN functions as a resource centre and places the results of its work in the public domain through publications, international specifications and the sharing of information on lessons learned, best practices and latest development in technologies. For information on how to participate in RWSN activities please contact the website www.rwsn.ch

About the authors

Eric Baumann works for Skat in Switzerland, as a technical expert in the field of rural water supply. For 14 years, he has headed the secretariat of RWSN (formerly HTN). He has been instrumental in establishing network's reputation in supply chains, low-cost drilling, self-supply household solutions, and capacity building in local production of handpumps.

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