



WATER, ENVIRONMENT AND MANAGEMENT

Global networking of handpump research & development

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BACKGROUND

At the inception of the International Drinking Water Supply and Sanitation Decade, it was estimated that due to limited financial and technical manpower resources nearly two billion people in developing countries were without safe drinking water. The solution to this mega problem have been found through extraction of groundwater with handpumps, providing maximum and sustainable coverage at affordable costs. For example, a handpump scheme can typically be implemented at one quarter of the cost of a yard-tap scheme and is comparatively easier to maintain. However, in order to provide safe drinking water for two billion people, it requires more than 20 million handpumps.

During the last decade substantial handpump research and development work has been carried out by several multilateral and bilateral agencies, research institutions, manufacturers and individuals in developed and developing countries. As a result, a number of promising handpump designs like the Tara, the India Mark III, and the Afridev are now available and many countries have benefitted greatly from the handpump R&D work. Unlike other engineering products, community handpumps often work under harsh conditions and are often subject to abuse. Therefore essential features of the pump are that it should be robust and reliable. Also to make village-level maintenance possible it is necessary that a handpump is easy to maintain. The cost of the pump has to be kept to the minimum to ensure that it is affordable. These factors make handpump R&D efforts a challenging task.

This paper attempts to analyze the reasons for collecting data to fill existing information gaps, the need for a formal global networking of handpump R&D efforts and discusses a possible model for a formal "Global Handpump R&D Network".

PRESENT FRAMEWORK

At present several agencies - to name a few - Consumer Research Laboratory (CRL) in the U.K., Swiss Institute for Appropriate Technologies (SKAT), Blair Research Institute in Zimbabwe, International Development Research Center (IDRC) in Canada, Overseas Development Assistance (ODA), Danish International Development Assistance (DANIDA), Deutsche Gesellschaft fur Technische Zusammenarbeit (GTZ), Canadian International Development Assistance (CIDA), governments in several developing countries, NGOs, manufacturers in the private sector, United Nation's Children Fund (UNICEF), the UNDP/World Bank Water and Sanitation Program (the Program) and individuals who support handpump R&D work directly or indirectly. The main functions of different organizations are: CRL carries out laboratory testing and research; SKAT prepares handpump specifications and manufacturing guidelines, and provides technical guidance to manufacturers on request; Bilateral agencies provide support for laboratory research and testing, and handpump projects including field R&D at the project level; UNICEF supports research, field testing and publication of reports; and the Program supports handpump R&D, laboratory testing, field testing on an interregional basis and publication of reports.

Field level R&D efforts are ongoing in several countries but there is no organized attempt to synthesize R&D efforts - an essential tool for optimizing use of resources and maximizing benefits. Many R&D efforts (excepting the efforts supported by the Program, UNICEF and a few bilateral agencies) are project oriented. The present framework is rather informal and consultations between various groups are infrequent. The existing Networks like the Global Applied Research Network (GARNET) are limited to information sharing on request. Flow of information to interested parties is often very slow. As a result, many handpump projects, buyers, manufacturers and other interested agencies, very often either do not receive information on R&D efforts or receive it late.

GLOBAL NETWORKING

Need For a Formal Networking

The weaknesses in the present arrangement i.e. undefined and informal networking among the several interest groups, lack of coordinated and integrated approach and poor flow of information, result in duplication of R&D efforts, waste of scarce resources and delays in the large scale application of proven designs. The Handpump Meeting organized by SKAT and the Program in close collaboration with UNICEF, held in June 1991 in Islamabad, in Pakistan, and attended by over 30 participants from Asia, Africa and developed countries provided an opportunity for an informal exchange of views on handpump related topics including handpump R&D. The meeting strongly recommended a "Global Networking of Handpump R&D Activities". This, the meeting felt, would result in: effective use of resources; better flow of information; and global synthesis of R&D results. For example the recent joint efforts in Nepal with the Department of Water Supply and Sewerage, UNICEF, FINNIDA, the Program and other NGOs to standardize on an improved No.6 shallow well handpump, and assist local manufacturers to produce quality pumps is making excellent progress. This would not have been possible but for the networking of all agencies at the country level. There is, therefore, a need for a collaborative and integrated R&D approach as the possible way of overcoming the present deficiencies.

Proposed Framework

The network will comprise four tiers namely: project coordinator (in-charge of a handpump project which is part of the Global Network); country level network; regional level network; and a global level interregional coordination committee. The members of the proposed network will be independent in their working but will work in a collaborative spirit. Linkages will be established with other networks such as GARNET. Each member of the network will identify focal person(s) or coordinators who will provide necessary support at various levels.

Interregional Handpump R&D Coordination Committee

At the global level there will be a "Handpump R&D Coordination Committee" comprising one member each from bilateral and multilateral agencies active in the sector, CRL, SKAT and select government representatives from developing countries and manufacturers. The Interregional Coordinator will be the convener of the

committee and will be from an organization which is willing to take the responsibility for interregional coordination. The committee through a consultative process will identify research and development priorities, funding sources, projects for field testing and institutions for laboratory testing/research, preparation of reports and dissemination. It will also define the role of different agencies and prepare a workplan.

Regional Level Networking

The main objective will be to identify the region's research and development priorities and institutions for carrying out field testing. The regional coordinator will be from an organization, actively involved in handpump R&D, have a strong presence in the region and be willing to coordinate activities, disseminate information and provide support to handpump field testing projects in the region.

Country Level Networking

Each designated country level coordinator will coordinate activities, disseminate information and provide support to handpump field testing projects in their respective countries where handpump R&D activities are planned or ongoing. The coordinator can be from a national government, bilateral or multilateral agency, GARNET coordinator, NGO and will coordinate handpump R&D the activities at the country level and will work closely with regional and project coordinators.

Project Coordinator

The project manager of each handpump project identified - it can be a bilateral/multilateral/government/NGO project - by the interregional committee, for field testing purposes, will be the project coordinator. Only those projects which agree to participate in the network on a voluntary basis and agree to provide necessary field data and preparation and dissemination of field reports will be included in the network.

Other key players

Consumer Research Laboratory

CRL will be the focal point for all laboratory tests and research work and will work in close collaboration with different agencies and specially the handpump field testing projects and manufacturers. CRL will prepare reports on laboratory tests and research.

Swiss Institute for Appropriate Technologies

SKAT will be the focal point to synthesize

R&D results, publish and disseminate reports, on an interregional basis. The dissemination of information at the country level will be the responsibility of the country coordinator and project coordinator. A mailing list of organizations/individuals will be prepared who will receive the reports regularly. Other participating agencies, especially UNICEF and the Program will assist in wide dissemination of information. Periodic handpump workshops will be organized by the network as necessary.

Manufacturers

The manufacturers form a very important link in the Handpump R&D efforts and will provide necessary support in the preparation of designs and prototypes. The manufacturers will be encouraged to develop improved design and the network through its members will support field testing of potential design improvements.

MEMBERSHIP

Membership of the network will be open to organizations and individuals who are actively involved in handpump R&D work. The membership will be on voluntary basis.

FUNDING

The above activities will be financed through support from national governments, and bilateral and multilateral agencies. The country level project(s), which decide to become part of the network, will carry out their own field monitoring, analysis and preparation of country level reports, as part of their normal project activities and provide information to the network as necessary.

EXPECTED BENEFITS

The proposed network will improve flow of information, collaborative spirit and interaction between agencies, and help in adopting an integrated approach towards handpump R&D. It is expected that it will reduce duplication of R&D work, accelerate the operationalization of field proven designs and maximize the benefits.

Views expressed in this paper are those of the author and are not necessarily of the organization he represents