

Cooperation Fund for the Water Sector

Pilot Demonstration Activity

Request Form

Activity Title: Demonstrating the Value of Greater Women Involvement in Implementing Arsenic Mitigation Water Supply in Bangladesh.	
Proposer (Name, Div/Dept): Dr. Bilqis Amin Hoque. Director of Research. Environment and Population Research Center (EPRC) & Co-Proposer: Sufia Khanam	
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Country (DMC): Bangladesh	Region: South Asia
Activity Proposed Start Date:	Activity Proposed Duration: 12 months
Cost Estimate: US \$ 49,973	
Implementing Organization Contact: Environment and Population Research Centre (EPRC) House 242 Lake Road 17, New DOHS, Mahakhali, Dhaka –1206, Bangladesh. Phone: 880-2-8822772 Email: eprchq@yahoo.com , bilqisah@gmail.com	
Consultant Identified?	If so, Consultant(s) Contact: Ellen Pascua, consultant, ADB E-mail: epascua@adb.org
ADB Activity Officer – name, position, division, telephone and e-mail:	Kenichi Yokoyama, Senior Water Resources Specialist, SARD, Agriculture, Environment and Natural Resources Division, kyokoyama@adb.org , local 5683

Short Description:

1. Background and Rational:

Although the risks for exposure to drinking arsenic contaminated water have been the worst in Bangladesh in the world; the progress in arsenic mitigation drinking supply has been slow. The National Policy for Arsenic Mitigation 2004 & Implementation Plan for Arsenic Mitigation in Bangladesh states that the Emergency Water Supply Program in severely arsenic affected areas (villages/pockets that have more than 80% contaminated areas) shall focus on ensuring safe source of drinking water for 50 families within a reasonable distance in a year. The program in mid-term response areas (40% and less than 80% contaminated) will be completed within a period of 3 years. A 2005 report suggested that the majority of emergency phase villages should be covered in the next 5 years, although there is potentially a shortfall of up to 1,000 villages that may not be covered (1). The GOB/National Policy promotes two types of arsenic mitigation technologies: (i) Alternative technologies including deep tubewells, safe shallow tubewells, improved dugwells, pond sand filter, piped water systems, infiltration galleries and rain water harvesters. Those technologies include sources of water, which are safe of arsenic. (ii) Arsenic removal technologies after verified and certified by GOB. But the few options certified depend on chemicals/materials not produced/easily available in the country. Also there is yet lack of information about its wide usability.

A national recent report showed that about 46% of the installed alternative options were not functioning; though more than 70% had assigned trained caretakers for its operation and maintenance (2). An arsenic mitigation water supply project (3) and national consultation proceedings (4) reported that often women caretakers have limited access to operation and maintenance capacity building trainings. Poor and unacceptable microbiological quality of the water from the installed options, irregular use, selection of inappropriate technologies, poor operation and maintenance and/or social reasons have reduced the

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level of expected effectiveness from whatever number of options installed (2,3,5). The risks for microbiological contamination substitution have been reported (6).

Women in Bangladesh are traditionally responsible for managing water for a multiplicity of uses - drinking, cooking, bathing and washing for themselves, their families and their livestock. In arsenic affected areas the following one or more situations may exist:

a). The mobility of women and girls is often constrained within by privacy and security concerns, accessibility of water options is the primary determinant for its proper use. In arsenic affected areas most of the both poorest and other women must walk long distance to fetch drinking water from the arsenic safe options, if at all installed. In that condition they either continue to collect the unsafe water or collect/manage the safe water in a regular or an irregular level. It is likely that their role, workload and mechanisms and behaviours about managing water through collection, handling and storage are influenced based on the level of knowledge, nature of access, type of technology and social factors. There is limited information how the role and behaviour of women in water management have changed in arsenic affected areas.

b). Although the policy suggests that women users should be involved in site selection and the site selection be led by Female Ward members, it is often not done properly (3,4). The community participation approach promoted by projects, when not appropriately gender mainstreamed, allow discouraging opportunities for women in male dominated societies. Usually a Water Committee is formed for every new technology installed in an arsenic affected area. In addition to other responsibilities (mentioned latter), the Committee finalizes site and type of technology. Women are rarely placed in key decision making and/or implementation positions, such as, chairman, secretary, and treasurer. This means that they can play limited roles in the selection of appropriate site and/or technological options. The risks for limited access to and use of the newly installed options by the women might become high if they are not effectively involved in the decision making processes.

c) As managers of the options women usually does or coordinate the operation and maintenance (O&M) of the water options. They are often assigned caretakers of an option in both not arsenic affected and affected areas. The earlier studies before arsenic contamination showed that water options operated and maintained by properly trained women caretakers performed better and encouraged use of higher volumes of water than the ones maintained by others (7). Most of the arsenic removal technologies are new/relatively of new kind and installed publicly to be used under heavily community participated conditions. They are often made caretakers as usually they play that role, but there are limited scopes for recognition and creation of effective enabling environment to perform it (4,5). The women's role as water managers is affected in arsenic affected areas by lack of: access to training, effective participation in decision making processes and/or access to financial means for timely operation and maintenance. Also, women participation as sustainable effective caretakers is discouraged by the society due to lack of observed benefit on their parts after investing their time in it. Lack of capacity and incentives for effective caretaker of the options by women, might significantly contribute to the poor operation/maintenance and poor functional conditions of options.

d) Recently WHO has suggested Water Safety Plan (WSP) for safe drinking water. It includes integrated assessment, implementation (installation, operation-maintenance, dis-infection as needed, water handling, etc.), and management (monitoring and reporting) of water from source to consumption by the local stakeholders. The earlier WHO guidelines were mainly about making efforts to supply safe drinking water meeting specified standards. Often the quality of water at the consumption point found highly contaminated irrespective of the type of technology. Attempts are being undertaken to adopt and promote the WSP by many countries; including Bangladesh. As women are responsible for taking care of the options, collection, transportation, storage and handling of the water if they are not properly trained, educated and involved in WSP, the risks for not meeting water security might remain irrespective of the types of technologies.

The Project will therefore test and contribute to the development of a logical innovative model for improved sustainable safe drinking water based on capacity built/empowered local women groups for

managing effective community/user participated system for safe in the specified severely arsenic affected area within the ongoing SIWRPMP funded by ADB project.

In order to support the appropriate community based O&M the project will study the effectiveness of decentralized trained women-focused local institutional mechanisms (Women group; WG) in identifying, installing, and sustaining alternative low cost water supply options suitable for local conditions and based on local demand. The demonstrated technological options and delivery mechanisms as such can be subsequently replicated on a wider scale upon its successful implementation.

2.Goals & Objectives:

The goal of the project is to enhance livelihood of local population in the specified subproject areas of the Southwest Area Integrated Water Resources Planning and Management Project (SIWRPMP) through improving health and reducing water borne and arsenic diseases.

The objectives are to:

- i. assess the roles that women play in managing water for various domestic uses such as drinking, cooking, bathing, washing, etc. and how they have been involved in making decisions about how water supply interventions should be designed and implemented in the arsenic affected villages
- ii. illustrate the advantages of getting women involved in decision making and implementation processes of arsenic mitigation water supply project based on an empowered local women network mechanism (Women Group; WG)
- iii. illustrate the mechanisms of training and promoting Water Safety Plan (revised for local context after WHO guideline) by women groups among women users for drinking safe water under Women Group

The specific objectives will be: (i) to create access to community chosen safe drinking water options and reduce the level of drinking arsenic contaminated water to less than 50 % in the more than 80 contaminated 3 Unions, (ii) increase awareness about arsenic mitigation as well as water safety among about 70% household adults and schools in the three Unions, (iii) enhance community, local government institution and women's participation in management of water supply and its related hygiene based on established capable women groups in villages; (iv) establish WGs, enhance WG knowledge, capacity, confidence and interests in service delivery for operation and maintenance (O&M) of alternative technologies selected by the community for safe drinking water while demonstrating their feasibility. The capacity and interests of WGs will be developed based on integrated training on safe water, O & M of options, kitchen gardening, poultry farming and appropriate processing of local foods to value added products. (v) enhance ownership of options installed by communities through the establishment of water option committees.

3. Scope and location of Work / Description of Activities:

The SIWRPMP has a core objective of enhancing the productivity and sustainability of existing FCD/I schemes thereby enhancing the incomes and livelihood of the population. Addressing arsenic contamination, of which priority is also high from livelihood perspectives in the contaminated villages and among the poorest population therein, requires evidence and knowledge generated on the technical soundness, social acceptability, economic feasibility, and sustainability which needs to be verified through pilot implementation. The proposed study also has a strong social inclusion and gender responsive

dimensions. These are not feasible under loan financing (under which the Government may not be willing to arrange sufficient technical, institutional, and social inputs). Having the aforementioned innovative features, the demonstration project will also provide important demonstration effects that can be replicated and up-scaled elsewhere upon its successful implementation.

3.a. Location of the project

The proposed PDA will be done in 3 Unions under SIWRPMP in Faridpur Nagarkanda upazila where there was more than 80% contamination in 2003. According to the Sub-Assistant Engineer, DPHE, (contacted on Sep .13,2007) they have provided some deep tubewells, dug wells and pond sand filters and reduced the contamination on average to about 70%; but the existing distribution of the contamination varies between more than 80% to less than 60%. ADB is funding the Southwest Area Integrated Water Resources Planning and Management Project (SIWRPMP) in that region. The population of those Unions (and other Arsenic affected areas) had earlier demanded for arsenic safe drinking water during the preparatory consultations of the project. There were about 95755 populations in the three Unions.

3.b. Description of activities

The project will create awareness about the existing arsenic mitigation water supply situations, its impacts, needs for effective community participation in drinking water management through women institution and the project plan-schedule among all populations. The main activities will include:

- i. A community participatory baseline situation analyses will be conducted before the awareness activity. It will also look into the existing women practices in water management to understand the changes and its determinants.
- ii. Women's groups will be established through voluntary participation. EPRC will train and facilitate the women groups to develop their own criteria, procedures and regulations for membership and election for leadership and managerial positions within the groups. EPRC will also train the groups to facilitate awareness raising of communities on alternative technological options (to contaminated shallow aquifer water), health and hygiene, and selection of options for installation. Awareness on the alternative options will include detailed information of the types of options, implications in terms of water quality, O&M costs and tariff setting and collection methods to enable informed decision making by user groups in selection.
- iii. In parallel to organizing women's groups, the other main stakeholders such as users and leaders through water options committees will be established, and Union Parishad and local DPHE will be linked to the system in line with the widely practiced/national implementation suggested guidelines. The main responsibility of the water option committee will be to (i) oversee the site selection of the options; (ii) set ground rules for the use of options by all users; (iii) sign agreements with land owners for use of land for installed options where required; (iv) resolve any social conflict due to use of options by communities and, (v) promote contribution to 5%-20% community contribution in cash or kind by all users depending on the affordability. To enhance synergy and collaboration of local government institutions (LGIs), the union parishads will be included in the awareness raising activities. Female ward members will be encouraged to play the policy suggested roles, in addition to any other roles suggested by the users. In order to ensure that the poorest have access to the water facilities, WGs, EPRC and LGIs (particularly Female Ward members) will identify the poorest in the user groups based on GoB definition for hard core poor who will be exempt from the cash contributions expected for installation. The Union WATSAN Committee (after reactivation) will be linked to the development through their Female Ward members who will be a key member (position to be decided/elected by the respective groups) in the Women Group for reporting to the Union Parishad.

Formation, Training and Installation of Women Groups (5 WG/Union), Total 15 WGs =225 women		x	x	x								
Promotion and Installation of chosen options by EPRC		x	x	x	x	x	x	x	x	x		
Formation of Water Committees, signing of agreement and collection of community contributions by EPRC,		x	x	x	x	x	x	x	x	x		
Promotion, required O&M		x	x	x	x	x	x	x	x	x	x	
Monitoring of the options and water safety			x			x			x			x
Reporting						x						x

Institutional management

Environment and Population Research Center (EPRC) will implement the Project and Principal Investigator will be Dr. B. A. Hoque from EPRC. A Project Advisory Committee consisting of representatives from Upazilla DPHE, Female Ward Members/LGI and representatives from WGs and key social stakeholder groups (about 11 members) will be implemented. At the Union Level the Female Ward Members will be placed at key monitoring position/process based on consultation with the WG.

EPRC will be responsible for (i) raising awareness of communities (both men and women) in safe WSS; (ii) establishing water option committees for selection of options and site, including agreements on use of land/facilitates and installing options accordingly; (ii) organizing and mobilizing women groups as WSS managers; (iii) training of women groups, (iv) promoting regularization of monitoring of installation, water quality and O&M carried out by WGs (and LGI/men where relevant); (v) building capacity of women groups to manage the revolving funds (which came from the community contribution for the options) for the required O & M. EPRC will help WG to formulate and implement rules and regulations based on local consultations (vi) preparing agreements between the water option committees and land owners for use of privately owned land for safe drinking water; (viii) installing community selected water options in consultation with DPHE and WGs, and (ix) preparing periodic quarterly progress as well as final reports. EPRC will be supervised ADB.

Respective preliminary user groups will establish water option committees after preliminary selection of options and its target users. EPRC will facilitate water option committees in selection of sites for installation, final selection of technology based on local environmental, social and other conditions and reach consensus with communities and land owners (private/public) on the installation and use of selected options by the identified target users. Each water option committee will comprise of social leaders, representatives of the beneficiary community and land - owners. At the least one-third of the members of the Committee will be women., An agreement will be signed between each water option committee represented by its chairperson and the land owner, witnessed by the lead NGO and a LGI (male or female ward member) for the finally selected option and site. Signatures of all four parties will be required for commencing installation works. Upon completion of installation and test of good working conditions of options the water option committee will sign an agreement with EPRC, and concerned Women Group (if formed by then) to formally take over the respective water option constructed and witnessed by one member of the Union Parishad.

Procurement of Goods and Services under the project will be conducted in accordance with ADB's *Guidelines for Procurement*.

Proponent Qualifications

Environment and Population Research Center (EPRC) is a not-for-profit multi-disciplinary, research, training and service providing organization established in 1999. Its vision is to redress sufferings of the poor, with its mission to incorporate research, training, technical services, laboratory analysis, information exchange and networking for achieving respective program targets. The main programs include water, sanitation and wastewater, agriculture; public health; food safety and technology; and disaster risks management. The main ongoing/recently finished projects in water and sanitation includes: (i) rural community participated arsenic mitigation water supply projects based on development and installation of both alternative safe water, piped water system, and arsenic removal option; funded by DPHE-UNICEF),

(ii) WHO-Water Safety Plan piloting for alternative arsenic removal technologies; funded by Ars in Kalaiarsenic and, dis-infection and health impacts of dugwells; funded by Ministry of Local Government, DPHE and DFID, (iii) Water Safety Plan Development and Health Impact in rural Homna, funded by WHO, UNICEF and DPHE, (iv) women capacity building and participation in integrated water supply (including arsenic mitigation) sanitation and hygiene improvement in coastal areas; funded by Child Health Foundation, USA. (v) training of local government representatives and school teachers on WSS issues and activities; funded by World Bank, (iv) emergency WSS in floods and cyclones with particular emphasis on drinking water treatment; funded by DFID and another one by UNICEF,(vi) arsenic mitigation through integrated water resources management and social welfare (including training and micro-credit); funded by Ministry of Agriculture-RDA and,(vii) integrated water, sanitation and hygiene improvement through technology and institutional development in urban slums; funded/collaboration with by United Nations University, Tokyo and DWASA. Their main financiers and collaborators in water and sanitation includes the United Nations University (Japan), Kyoto University, International Food Policy and Research Institute (USA), Columbia University (USA), Johns Hopkins University, WEDC-Loughborough University (UK), World bank (Dhaka), UNICEF (Dhaka), DFID in Bangladesh, DPHE, DWASA and local NGOs.

EPRC has a proven track record in managing WSS projects and have: (i) demonstrated capacity in successfully promoting and managing community-based arsenic mitigation activities under contracts with various donors; (ii) formation of women groups and livelihood enhancement, (iii) worked successfully with Government Departments, local Government institutions, NGOs, (iv) trained local government members, school teachers, NGOs, religious and social leaders, DPHE field level staff and (iii) senior staff experienced in the field of WSS engineering and social sectors.

5. Expected Results (outputs/outcomes/effects/impacts):

Project Outcomes (Results to be achieved by the end of the project)

At individual and household level

(i) Women are educated on arsenic mitigation issues and water safety. (ii) About 50% of the affected people have access to safe drinking water, managed water after the WHO promoted Water Safety Plan, (ii) Poor women members of the WGs are involved in income generation based on the operation and maintenance of the options as required and on other skill activities through the WGs.

At the community level

All men and women made aware of the arsenic mitigation and water safety, water options are installed after informed and enabled choices by the communities, options properly operated and maintained with support from the local women groups. The communities are equipped with the appropriate trained institutional support (women groups) for the required O&M.

At the Project and Higher level

- a. Improved knowledge about existing and feasible women roles in drinking water management
- b. Tested contribution to the development of a logical appropriate model for sustainable rural safe drinking water
- c. Improved knowledge about appropriate arsenic mitigation water technologies
- d. Improved knowledge about WSP implementation based on women led initiatives
- e. Training material for waters safety.

6. Measurable Performance Indicators:

Expected Key Performance Indicators:

- At least 1200 women are organized into 15 groups and capacities built for management of arsenic and micro-biologically safe (WHO-water safety plan based) drinking water
- Approximately 2000 population are provided with access to safe water (more than 360 households will have owned access to water options as per DPHE guideline)
- Overall quality of water drank/stored (WHO water safety) as well as knowledge about water safety improved by at least 50% from baseline among WG households and by 25% among all households
- Improved food processing, food hygiene and kitchen practices by 50% from the baseline among WG households
- Labor productivity of rural women in WG increased by 10 - 20%
- Significant amount of water collection time saved and physical labor reduced among the users of the installed options

7. Stakeholders Participation:

The Project is highly participatory in design and will be implemented following a bottom-up process approach. The project will include direct participation of women, in particular poor women, (as informed users, empowered managers of water and fund facilitators under WG), local government institution (overall promotion and through female Ward members for site selection, monitoring and linking to the national system), Upazilla DPHE (as facilitator, monitor and other roles assigned by the policy), local WMAs, local social leaders and schools in promotion, users, Water Committees and EPRC. The informed stakeholders will participate in the creation of awareness and in planning, implementation, monitoring, dissemination and reporting to the national system according to their respective roles assigned in the policies.. Other local NGOs, Public Departments and organizations/stakeholders will be encouraged to participate based on their interests and feasibilities. Women and men from the villages will be involved in assessment of the needs, collective learning and follow-up of the process through community mapping and discussions at baseline, monthly training sessions, and two follow-up monitoring-evaluation activities. Users will share in the 5% -20% community contribution for installation of the chosen options and 100% operation and maintenance costs. The users may take loans from the revolving funds of WGs for the purpose. Village men will support the in women taking on this new role as agreed during a focus group discussion. EPRC will undertake (i) creation of water safety awareness among all populations in the 3 Unions, (ii) formation of Water Committees and supervision and coordination of water option committees, women groups and LGIs (through Female Ward members); (iii) organization of women groups in villages as self help societies; (iv)training and building capacity of women groups to under water management as well as establish revolving funds, (v) education, installation, supervision and monitoring of appropriate water technologies as well as water quality among interested water user groups involving women groups as much as possible; (vi) facilitation of the roles of water option committees, local DPHE and Union Parishads; and (x) collection and reporting of project progress and monitoring data.

8. Scope for Replication/Use in Other DMCs:

The proposed project has immediate and long-term basic water necessity achievement and gender development implications in Bangladesh and in other developing countries. It will help to address the MDGs of drinking water and gender in particular and, poverty, child health, IWRM and other in general in those countries. Arsenic mitigation drinking water supply has been a major public health and human development concern in Bangladesh and other countries in Asia, such as India, Nepal, Vietnam, China, and other countries. Bangladesh and other developing countries have recently incorporated WHO-Water Safety Plan and are planning/initiating various activities to realize it to address the continuing microbiological problems in safe drinking water. Women have been managing drinking water in most of the developing countries for ages and often with severely limited capacities. Other parts of Bangladesh as well as most of the countries faced with similar problems in Asia will have the scopes to replicate the

developed: model for drinking water management by greater valued involvement of women through established institutional mechanism.

The project will not involve any land acquisition or resettlement, as the facilities (mostly point source, but also including small-scale village piped system) will be placed either on public or private land owned by beneficiaries who will share their use with other beneficiaries as appropriate. To qualify for implementation, all land in questions should be free of squatters, encroachers, or other claims. All beneficiaries must agree on arrangements for the use of land/facilities, which is confirmed in writing with water option committees through the assistance of EPRC.

During the design, construction, and operation of the WSS options, it is anticipated that environmental impacts will be minor and can readily be managed with proper planning, and adequate mitigation measures together with regular monitoring. Environmental implications, impacts, mitigation measures, and environment management arrangements are specified in the environmental impact assessment (EIA) of the counterpart project which included issues related to arsenic contamination.

Cost Estimate:

Inputs / Expenditure category	Total Costs (in US\$)
1. Civil Works: Situation analysis surveys (baseline, follow-up and final), participatory data collection, site selection and agreement signed, installation of Water Committees, water options in the core areas, monitoring and supervision	22975 (19000 for technologies)
2. Equipment and Supplies: Develop option O&M tools, water quality and environmental test and field equipments, computing and other office equipments, field office furniture and rents, etc.	3950
3. promotion and education, training, workshops, seminars, public campaigns: promoters and community mobilizers/awareness creation, venue rental, travel and food , training specialists, data management, xeroxing and production of training/dissemination materials, etc.	9048
4. Specialists Services: technical assistants, water specialists, community and women organizers, data and environmental sample collectors, research officials, etc.	5800
5. Project Management: overall coordination and supervision, data analyses and report writing, travel costs and per diems, stationery and other office items, rental costs, recurrent costs, etc.	7200
6. Other Inputs: Summarize specifications! Revolving Fund for Women groups (US Dollar 400/group; about 5 Women Groups/Union=15 Groups)	0
7. Contingencies :5% of total estimated grant fund): Use of Contingencies requires prior approval from ADB.	1000
Total PDA grant financed	49,973