

Strategies for Rehabilitation and Up-gradation of WatSan Facilities



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Abbreviations

ASEH	: Advancing Sustainable Environmental Health
DHTW	: Deep Hand Tubewell
DPHE	: Department of Public Health Engineering
DSHTW	: Deep-set Hand Tubewell
DW	: Dug-well
GFS	: Gravity Flow System
HH	: Household
HTW	: Hand Tubewell
IFG	: Infiltration Gallery
LGI	: Local Government Institutions
MPWSS	: Mini Piped Water Supply System
NGOs	: Non-government Organizations
O&M	: Operation and Maintenance
POs	: Partner Organizations
PSF	: Pond Sand Filter
RW	: Ring-well
RWHS	: Rainwater Harvesting System
SHTW	: Shallow Hand Tubewell
SP	: Submersible pump
UWP	: Urban Water Point
WAB	: WaterAid Bangladesh
WatSan	: Water and Sanitation

Glossary

1. Rehabilitation:

Rehabilitation/renovation means improving a system through minor or major repairing/re-construction which will be similar as its original condition.

'Rehabilitation' in the document refers to any minor or major repairing/re-construction of component(s) of existing water supply and sanitation system.

Some examples of rehabilitation work:

- a. If pit of a school latrine/ public toilet is not functioning and the door is damaged, the rehabilitation will cover repairing of pit and door (which may require adding one-two more rings and fixing connections etc.)
- b. If a shallow hand tubewell with damaged platform is not functioning, the rehabilitation will cover repairing of the handpump (which may require change of bucket, seat valve, plunger assembly etc.) and repairing/reconstruction of damaged platform.
- c. If a community toilet is not functioning due to damaged septic tank, the rehabilitation will cover major repairing of septic tank etc.

2. Up-gradation:

Up-gradation refers to new construction/ replacement/ extension of any part of existing water supply and sanitation system. Up-gradation may also include major or minor repairing of existing structure as additional work required for improving the overall system.

'Up-gradation' in the document refers to replacement or extension of component(s) of existing water supply and sanitation system.

Some examples of up-gradation work:

- d. If pits of school latrine/ public toilet of not functioning due to soil condition (and require replacement by a septic tank) and the doors are damaged, the up-gradation will include replacement of pits by a septic tank (which is a completely new component) and repairing of doors.
- e. If a school latrine/ public toilet has only one chamber for boys/ men which is also not properly functioning, up-gradation may include repairing of boys'/men's latrine chamber and construction of an additional latrine chamber for girls/ women (which is an extension work).
- f. For a water supply facility like a bamboo pump tubewell without platform which is not producing safe water, the up-gradation will cover replacement of the bamboo pump by a No. 4 handpump tubewell (which is a new component) and construction of a new platform (which is another completely new component). etc.

3. Access and adequate:

a. Water facilities:

Access to be defined as presences of public TW within 50m (163 feet) distance and minimum accepted service level 20 lpcd (for drinking and cooking purposes) + 2-3 lpcd for sanitation and hygiene purposes.

b. Sanitation facilities:

Access to be defined as presences of sufficient sanitation facilities within safe distance & location in order to satisfy the basic needs of the communities.

4. Functional:

a. Water facilities which meet the following criteria -

- Produce adequate quantity of water having acceptable quality round the year.
- All necessary parts are in place.
- Good, clean and effective platform is available.
- Effective waste water disposal pit/ drainage system is available.
- Sanitary condition of the TW's surrounding is satisfactory.

- b. **Sanitation facilities** which meet the following criteria -
A hygienic latrine would mean to include all of the following:

- (1) Confinement of faeces,
- (2) Sealing of the passage between the squat hole and the pit to effectively block the pathways for flies and other insect vectors thereby breaking the cycle of disease transmission, and
- (3) Venting out of foul gases to keep the latrine odour free and encourage continual use of the hygienic latrine.

General: Latrine options are properly used and maintained and all the components (septic tanks/ pits/ soak-well or upflow filter etc.) are functioning properly.

5. Partially Functional

- a. Water facilities do meet partially of the criteria mentioned in # 2a.
- b. Latrine options are not properly used and maintained and/ or all the components (septic tanks/ pits/ soak-well or upflow filter etc.) are not functioning properly. These types of latrine options may be reactivated or can be made functional with minor repairing or renovation.

6. Non-Functional

- a. Water facilities which is completely out of order.
- b. Latrine options are completely out of order and practically not usable.

7. Safe water and safe sanitation:

- a. Safe water supply means withdrawal or abstraction of either ground or surface water as well as harvesting of rain-water; its subsequent treatment, storage, transmission and distribution for domestic use.
- b. Sanitation means human excreta and sludge disposal, drainage and solid waste management.

1. Background

WaterAid Bangladesh is facilitating installation of different types of water supply options (e.g. shallow hand tube-wells, deep-set hand tube-wells, deep hand tube-wells, ring-wells/ dug-wells etc.) and sanitation options (e.g. pit latrines, sanitation blocks, cluster latrines etc) by the Partner Organizations in rural and urban ASEH programme intervention areas.

The standard design & specification have been followed for the installation of water & sanitation facilities funded and facilitated by WAB. Apart from WAB, several other organizations as well as individuals also installed/ constructed a huge number of water supply & sanitation options over the years. It is observed that a significant number of water supply and sanitation facilities have not been functioning as expected and some times functioning partially in the communities mainly due to poor operation and management.

WAB and Partners adopted “**Totally Concept**” in ASEH programme areas which includes the followings–

1. All water supply facilities within ASEH communities are functioning properly, i.e., the water supply facilities are producing **safe & adequate** water and being managed in a **sustainable** way.
2. All sanitation facilities within ASEH communities are properly functioning and being managed by users/management committees. This also includes the sanitation facilities installed by communities and institutions as well.
3. Totality concept promotes mobilization and utilization of local resources as much as possible and may reduce cost per beneficiary.
4. Rehabilitate/ up-grade existing watsan facilities following WAB standard design & drawing/ guidance and cost sharing strategy.

2. Introduction

It is already recognized that in many areas, adequate water supply facilities are already available which had been installed by DPHE, NGOs, communities and institutions. But a significant number of those facilities are partially operational or out of order. There is no motivation of the community to maintain the facilities in a proper manner. The same situation applies for community/ institution based sanitation facilities also.

Under these circumstances, WAB emphasised rehabilitation/ up-gradation activities within ASEH programme intervention areas. In order to perform these activities smoothly, WAB has taken initiatives to develop “**Strategies for Rehabilitation and Up-gradation of WatSan Facilities**” in ASEH programme areas.

This strategy will help respective staff & professionals to determine the steps to be followed when any watsan facility is already identified/ selected for rehabilitation or up-gradation. A number of important and supportive technology-wise step by step implementation guidelines have already been developed. The corresponding step by step implementation guidelines will be used as a supplementary document.

3. Purpose and Use of Strategies for Rehabilitation/Up-gradation of WatSan Facilities

The Strategies for Rehabilitation and Up-gradation of WatSan Facilities in urban & rural ASEH intervention areas have been prepared based on the experiences over the last year of implementation under ASEH to meet the following purposes:

- ✚ The “Strategies for Rehabilitation and Up-gradation of WatSan Facilities” in urban & rural ASEH intervention areas have been prepared as a tool to maintain standard procedures for rehabilitation/up-gradation of different types of existing WatSan facilities under the programme of WAB by all Partner Organizations.
- ✚ This will be used a Handbook for the frontline staff as well as professionals.
- ✚ Ensure involvement of community, LGIs and other concerned stakeholders as relevant through promotion of transparent, accountable, gender sensitive and pro-poor rehabilitation /up-gradation of existing WatSan facilities.
- ✚ The Strategies for rehabilitation / up-gradation of existing WatSan facilities will guide the Partner Organizations to implement the rehabilitation / up-gradation with a certain level of flexibility allowing addressing local context in consultation and approval from WAB, if essential.

4. Selection of WatSan Facilities for Rehabilitation/Up-gradation

4.1 Criteria for Rehabilitation

The following criteria should be kept in mind before selecting any WatSan facility for rehabilitation:

- The existing facility (infrastructure) is repairable.
- The estimated cost for rehabilitation will not be more than 30% of the similar new facility.
- The community must be willing to share contribution money as per Cost Sharing and Recovery Strategy, September 2006.
- O&M Committee / Caretakers must ensure proper use and O&M of the facility after rehabilitation.
- If more than one facilities are proposed for rehabilitation, prioritization will be made on the basis which serves more poor beneficiaries.
- In case of WAB funded facilities, the selected one must be constructed by WAB partner organizations at least 5 years back.

4.2 Criteria for Up-gradation

The following criteria should be kept in mind before selecting any WatSan facility for up-gradation:

- The facility requires replacement/extension of existing component(s) for better performance or utilization.
- The facility may require minor/major repairing along with replacement/extension of existing component(s).
- The estimated cost for up-gradation will be calculated case by case basis.
- The community must be willing to share contribution money as per Cost Sharing and Recovery Strategy, September 2006.
- O&M Committee / Caretakers must ensure proper use and O&M of the infrastructure after up-gradation.
- If more than one facilities are proposed for rehabilitation, prioritization will be made on the basis which serves more poor beneficiaries.
- In case of WAB funded facilities, the selected one must be constructed by WAB partner organizations at least 5 years back.

5. Strategies for Rehabilitation/Up-gradation of WatSan Facilities

5.1 Water Supply Facilities to be brought under Rehabilitation/Up-gradation

The following existing water supply facilities with given type of ownership patterns and users' categories could be brought under rehabilitation/ up-gradation:

- **Technological options:**
 - Tube-wells (SHTW, DSHTW, DHTW);
 - Dug-well/ Ring-well (RW/ DW);
 - Pond Sand Filter (PSF);
 - Infiltration Gallery (IFG);
 - Gravity Flow System (GFS);
 - Rainwater Harvesting System (Community based);
 - Mini Piped Water Supply System;
 - Submersible pump;
 - Urban Water Point (UWP);

For up-gradation, technical and management aspects should be carefully examined as case by case basis.

- **Ownership patterns:**
 - Privately owned but agreed to allow neighbours to fetch water after rehabilitation/ up-gradation;
 - Facilities provided by DPHE/ Unicef/ city corporation/ pourashava / other NGOs for a group of households/ floating population;
 - Facilities installed/ constructed by WAB partner organizations at least 5 years back using WAB fund,
- **Category of users:**
 - Water supply facility being used by a group of households – minimum 2 households (only for rural) onward based on technology option (Please see, WAB guideline on technology options vs. beneficiaries number).
 - Water supply facility being used by a single household but assures access for neighbours after rehabilitation / up-gradation.
 - Water supply facility being used by floating people at public places.

5.2 Sanitation Facilities to be brought under Rehabilitation / Up-gradation

The following existing sanitation facilities with given type of ownership patterns could be brought under rehabilitation/ up-gradation:

- **Technological options-**
 - Sanitation facilities at schools/institutions;
 - Sanitation facilities at public places;
 - Community managed latrines

For up-gradation, technical and management aspects should be carefully examined as case by case basis.

- **Ownership patterns:**
 - Facilities provided by City Corporation/ Pourashava Authority/ DPHE/ Unicef/ NGOs/ other agencies for a group of households/ students/ floating people;
 - Facilities that constructed by WAB partner organizations at least 5 years back using WAB fund.

6. General Steps for Rehabilitation / Up-gradation of WatSan Facilities

General steps for rehabilitation / up-gradation of WatSan facilities are described below:

6.1 Step-1: Assessment of WatSan Facility

6.1.1 Water Supply Facilities

- Select from existing water supply facilities which is not functioning properly and will be functioning after rehabilitation/ up-gradation. Assessment of the proposed water supply facility should be done carefully by the Partner Organization's engineer, whether it will be able to produce adequate water for the targeted/ respective hhs.
- Water quality (at least arsenic and microbial) test must be done to assess whether the facilities will produce safe water (please refer to Water Quality Standard & Testing Policy and Arsenic Testing Protocol).

6.1.2 Sanitation Facilities

- Select from existing sanitation facilities which is not functioning properly and will be functioning after rehabilitation/ up-gradation. Assessment of the proposed sanitation facility should be done carefully by the Partner Organization's engineer in terms of technical aspects including design and beneficiary coverage.

WAB fund to be utilized only for the poor and hardcore poor households. For well-off hhs, Partner Organizations are advised to mobilize/motivate them to do the same in order to address totality concept.

6.2 Step-2: Application for Rehabilitation/ Up-gradation

- For any rehabilitation/up-gradation work, it is advised that the standard application procedure including subsequent approval and other essential steps to be followed similar to the corresponding **Step by Step Implementation Guidelines** for the particular facility as relevant.
- The following steps describe particular activities in relation to rehabilitation/up-gradation work which may be added on top of the activities mentioned in **Step-by-Step Implementation Guidelines**.

6.3 Step-3: Design and Cost-estimate

- For any rehabilitation / up-gradation work, it is advised to follow the standard design & drawing of WAB as stated in the guideline. If not available, cost-estimate should be made as case by case basis.
- The estimated **cost for rehabilitation** should not be more than 30% of the similar new structure. If it exceeds more than 30%, approval needs to be obtained from WAB upon justification of the same.
- In case of up-gradation of water supply facilities, if the estimated cost exceeds taka 15,000 (Taka fifteen thousand only) for rural and 25,000 (Twenty five thousand) for urban for an individual facility, a brief proposal should be prepared and submitted with detail cost estimate to WAB for approval.

- In case of up-gradation of sanitation facilities, if the estimated cost exceeds taka 20,000 (Taka twenty thousand only) for rural and 35,000 (Thirty five thousand only) for urban for an individual facility, a brief proposal should be prepared and submitted with detail cost estimate to WAB for approval.
- After desk review and/ or verification, WAB will give approval of the submitted design & cost estimate for a particular work.

6.4 Step-4: Calculation of Cost-Sharing Amount and Collection of the Same

- The “Cost Sharing and Recovery Strategy, September 2006” should be followed for calculating the cost-sharing amount. Community contribution money should be collected upfront prior to start of work.
- In case of rehabilitation/up-gradation in schools/institutions/public places, the collected matching fund will be spent during construction.

6.5 Step-5: Management Committee Formation and Signing MoU

- Management Committee/user groups should be formed prior to rehabilitation/ up-gradation work done. Discussion should be held with the Committee/user group about the estimated cost to be spent for the work. The Committee/user group should agree to share contribution money (as calculated in Step-4) and be responsible for future operation & management of the facility.
- Prior to any rehabilitation/ up-gradation at school/ institution/ public place, an MoU must be signed between concerned applicant Committee (School Management Committee/ Market Committee etc. and Partner Organization (Please see the Step by Step Implementation Guidelines).

6.6 Step-6: Rehabilitation / Up-gradation Work

- The rehabilitation/up-gradation work will be done as per design following the steps mentioned in the concerned **Step by Step Implementation Guidelines** for the particular facility.

6.7 Step-7: Caretakers’ Training

- The selected Caretaker(s) and/or Management Committee should be trained on their roles & responsibilities and how to operate, maintain and repair the facility. Partner Organization will provide them hands-on training on O&M techniques along with a set of necessary tools (for selected options only).

6.8 Step-8: Handing Over to Users

- For any rehabilitation/up-gradation work, it is advised to follow the standard handing over procedure as per relevant **Step by Step Implementation Guidelines** for the particular facility.

6.9 Step-9: Monitoring and Documentation

- For any rehabilitation/up-gradation work, the concerned facility must be monitored by respective Partner Organization and necessary information must be recorded in the union/ slum registers.

7. WAB Concerns regarding Rehabilitation/Up-gradation of WatSan Facilities

7.1 Selection of WatSan Facilities at Community level

- The water supply facility in public place will be selected for rehabilitation/up-gradation work on the basis of its present condition, willingness and ability of the potential users/ applicant

Committee (e.g., Market Committee, Association, Caretaker group etc.) to provide contribution money and their commitment towards O&M of the facility upon rehabilitation/up-gradation.

- In case, a latrine facility (school latrine/public toilet) is functioning satisfactorily, but the attached water supply facility (used for washing purpose only) is not functioning, then it that water supply facility can be considered for rehabilitation/ up-gradation provided it meets other conditions for rehabilitation/up-gradation.
- If the water supply facility attached to school latrine/public toilet is out of order and the latrine also needs rehabilitation, both can be treated together for rehabilitation/up-gradation.
- If the existing water supply facility (for drinking purpose) in school/public place is out of order, it could be considered for rehabilitation/up-gradation.
- In case of urban water point, rehabilitation/ up-gradation work only to be done if the reservoir is available and can be repaired. Fund can not be utilized only for tap stand rehabilitation work.
- In urban context rehabilitation/up-gradation work should not be considered for the technology options of household based RWHS.

7.2 Management of WatSan Facilities at Community level

- Prior to any rehabilitation/up-gradation at school/ institution/ public place, an MoU must be signed between concerned applicant Committee (SMC/ Market Committee etc.) and Partner Organization. The MoU should contain the roles and responsibilities of both the parties during and after rehabilitation/ up-gradation including modality of construction, future use, operation and maintenance of the facility etc. and mode of operation of bank account (if applicable). The MoU to be drafted by Partner Organization.
- For schools/institution level, it is not mandatory to open up the bank account for depositing the matching fund. In such case, a register should be used to keep all records related to expenditure against rehabilitation/up-gradation of the facility in a systematic manner.
- But in case of rehabilitation/up-gradation of public toilet, an account must be opened and contribution money to be deposited. The account will jointly be operated by the Chairperson of Applicant Committee (or nominated person by the Committee) and representative of Partner Organization. An Implementation Committee must be formed (drawing members from applicant Committee and Partner Organization) responsible for construction and O&M after rehabilitation/up-gradation. Upon handing over, the Applicant Committee will lease out the facility (A 'Leasing-out Procedure' should be developed by respective Partner Organization). The signatory from the Partner Organization will be replaced by any of the members from the Committee. (Please see detail in **Step by Step Implementation Guidelines** for detail).

8. Rehabilitation / Up-gradation of Environmental Sanitation Facilities

8.1 Type of Facilities

Environmental sanitation options that could be brought under these activities are as follows –

- Solid Waste Management (SWM),
- Drainage & Footpath,

8.2 WAB Concerns regarding Rehabilitation / Up-gradation of Environmental Sanitation Facilities

It is worthwhile to mention that this type of work will be done at very limited scale and especially in URBAN intervention areas.

WAB concerns for these activities are as follows –

- For the SWM, construction of dustbin can only be brought under this activity. Prior to perform this work, it needs to make sure that the linkages have already been established with the city corporation/ pourashava's collection system and also community is mobilize for collection of solid waste and dumped to the selected dustbin which is proposed for rehabilitation/ up-gradation.
- The drainage & footpath can only be brought under rehabilitation/ up-gradation, when the drainage system will play a vital role to establish interlink between slum drainage system to WASA's/ City Corporation's main drainage system. The main objective should be to reduce the water logging in slum and improve overall environmental sanitation situation. This will be applicable only for the working slum areas which remain under water logging condition for several months in a year. And because of this reason, other interventions especially construction of sanitation options in the slum is hindered.
- Other activities e.g. management committee formation, caretaker selection & training, design & cost estimation, cost sharing and community mobilization etc. as already mentioned in the earlier sections will remain the same.

9. General Notes

- Relevant technical guidelines of WAB and Step-by-Step Implementation Guidelines will be consulted as required. Steps as mentioned in the **Step by Step Implementation Guidelines** for concerned intervention will be followed for rehabilitation/ up-gradation as applicable.
- Engineers of respective Partner Organization will ensure the quality of work. S/he might seek assistance from others as necessary.
- Similar type of **FORMS** used for new installation/ construction of water and sanitation facilities (e.g. application, approval letter, contract agreement etc.) can be used for rehabilitation/ up-gradation with minor changes by the Partner Organizations as required.