

Attachment III-18

***Institutional Development
Action Plan Guideline for
WMCA***

INSTITUTIONAL DEVELOPMENT ACTION PLAN GUIDELINES FOR WMCA

- Preparation of Action Plan for Institutional Development of WMCA -

1. OBJECTIVES OF THE GUIDELINES

These guidelines are prepared for specific use by first management committee (FMC) of water management cooperative associations (WMCAs) and supporting agencies such as Regional Office, District-Project Implementation Unit (D-PIU) and Upazila-Project Implementation Unit (U-PIU) under JICA Small Scale Water Resources Development Project Phase-2 (JICA-2). They are designed to create a common understanding among implementers and supporting agencies of the scope and approaches for preparation of **Action Plan (AP)** for Institutional Development (ID) of WMCAs.

Specifically, the objectives of the guidelines are:

- 1) To provide guidance in the preparation of AP;
- 2) To prescribe the tools and process for evaluation of AP; and
- 3) For the Regional Office¹, D-PIU² and U-PIU³ to internalize, during the planning process, that planning and implementation are their inherent functions as supporting agencies for Institutional Development.

2. PREPARATION OF AP

2.1 Purposes

The purposes of institutional development action planning are:

- 1) To determine the appropriate indicators in every Key Result Area (KRA) that will be considered for ID intervention under JICA-2;
- 2) To determine the baseline data of appropriate indicators;
- 3) To formulate the target output per indicator;
- 4) To identify the necessary milestone and activities leading to the attainment of the target output;
- 5) To synchronize the schedules or time frame of complementing planned activities;
- 6) To clearly delineate the responsibilities necessary to carry out the identified activities; and
- 7) To identify the indicative budget needed to carry out planned activities.

2.2 Procedure in the Preparation of AP

The preparation of Institutional Development Action Plan (ID-AP) shall be done using Form ID-AP for WMCA. The process involves the following steps:

(1) Confirm Baseline Data

- 1) Identify Key Result Areas and Indicators

Key performance area or key result areas (KRAs) are those aspects of Institutional Development that have to function effectively in order for WMCAs to succeed. These areas usually involve major organizational activities or groups of related activities that occur throughout the WMCA development. Under JICA-2, KRAs for Institutional Development of WMCA are grouped into: (1) general information, (2) basis for unity and strategic direction, (3) leadership and management, (4) policies, systems and procedures (PSPs), (5) resources

¹ Regional Office: Local Consultants, i.e., Water Resource Development Expert, ID Expert, etc.

² D-PIU: District XEN, Agriculture Facilitator, Field Facilitator, etc.

³ U-PIU: General Facilitator, Community Organizer, etc.

management, (6) WMCA Training Programs, and (7) networking and alliance building.

For each KRA, indicators are identified to show certain position, condition or situation descriptive of that particular KRA. When combined with certain qualitative or quantitative measures, indicators describe a certain status of the WMCA; e.g. WMCA membership.

The KRA “general information” includes the following indicators: (1) legal personality, (2) WMCA membership, (4) member’s participating/patronizing, (5) office, (6) basic office equipment and furniture, (7) physical infrastructure support, and (8) organizations.

The KRA “basis for unity and strategic direction” includes the following indicators: (1) vision, mission, goals and objectives (VMGO), (2) multi-year strategic development plan and (3) committee’s/subcommittees’ plans.

The KRA “leadership and management” includes the following indicators: (1) Management Committee (MC) activities; a) regular election based on WMCA By-laws, b) MC composition, c) regular MC meetings, (2) Subcommittee (SC) activities; a) SC membership, b) composition of SCs: b-1) Construction Monitoring SC, b-2) operation and management (O&M) SC, b-3) Agriculture Development SC, b-4) Fisheries Development SC, b-5) Gender Development SC, b-6) Microcredit SC, b-7) Environmental Management SC, and c) regular SC meetings and report preparation, (3) WMCA regular meetings, and (4) operations management records.

The KRA “policies, systems and procedures” includes basic organizational PSPs.

The KRA “resources management” includes the following indicators: (1) resource mobilization; a) subscribed and paid up capital, b) amount of savings per member, (c) access to external fund, and d) savings properly accounted, (2) account management; a) Cash resister updating, b) audit of cash resister and c) updated books of accounts, (3) financial viability; a) earning of business/service operation, b) liquidity ratio (at least *.*), c) return on equity (at least *%), d) debt-equity ratio (at least *.*), e) return on capital (at least *%) and f) loan repayment.

The KRA “WMCA Training Programs” carries the indicator, regular training/seminars by WMCA for its members. Training programs shall be selected from “Training List (Training on Overall Management) (Training on WMCA)” (Annex-1) by WMCA depend on the WMCA member’s needs.

The KRA “networking and alliance building” includes the following indicators: (1) participation in Local Government Institutions, (2) workable linkage with other organizations and (3) access to technical assistance and financial support.

2) Determine the baseline data

The WMCA shall present the baseline data to the participants of the Action Planning Workshop. The baseline data shall be written under the second column of Form ID-AP for WMCA “Baseline Data”. Per indicator in each KRA, provide a tick mark to indicate whether ND (no data), N (no), or Y (yes). For each “Y” answer, provide the specific actual data in the given criteria or measure/data set. For each “ND” or “N” answer, leave the data set blank.

(2) Determine Target Outputs for a Specified Time Frame

Target outputs refer to qualitative and/or quantitative objectives desired to be produced within the specified time frame of JICA-2 assistance for WMCA development. It shall cover the period of about 5 months for planning and design stage, 3-9 months for construction stage, and 12 months for first year joint O&M stage. The time frame may range from 30 to 36 months or 2.5 to 3 years.

The WMCA, with the assistance of Regional Office, D-PIU and U-PIU shall formulate the target outputs under JICA-2. In formulating the target outputs, it should assess the actual baseline data vis-à-vis performance standards per indicator/criteria falling under each key result area. Analysis should

proceed with the assessment whether the baseline data is “within standard” or “not within standard.” For those assessed “not within standard”, determine the gaps in relation to JICA-2 targets; e.g. registration with Department of Cooperative (DOC). While “horizontal analysis” is being undertaken, care should be exercised in order to attain “vertical consistency” considering the relationships among the indicators within a given KRA and indicators across KRAs. For guidance in determining the appropriate JICA-2 target output, please refer to “Guide in Target Output Setting for WMCA Development” (Annex-2).

The target outputs shall be written under the third column of either Form ID-AP for WMCA, whichever is applicable, under the table heading, “Target Output”.

(3) Identify Milestone per Target Output

Within the framework of project management, a milestone is the end of a stage that marks the completion of a work package or phase, typically marked by a high level event such as completion, endorsement or signing of a deliverable, document or a high level review meeting.

Hence, a milestone is the end result or terminal result which is realized only after a series of activities are carried out chronologically toward attainment of a given target output. A milestone should be stated in past tense.

The milestones shall be written under the fourth column of Form ID-AP for WMCA, whichever is applicable, under the table heading, “Milestone (End Result)”. For guidance in determining the appropriate milestones, please refer to “Sample Milestone Activities of WMCA” (Annex-3).

(4) Projected Date to Accomplish

The date the milestone is planned to be accomplished should be written under the fifth column of Form ID-AP for WMCA, whichever is applicable, under the table heading, “Projected Date to Accomplish.”

(5) Identify Activities

Identify the detailed activities that will be implemented within the 2.5 to 3-year implementation period of JICA-2 assistance. Activities should be geared towards the attainment of the milestone which also corresponds to the attainment of the target output.

The activities should be written under the sixth column of Form ID-AP for WMCA, whichever is applicable, under the table heading, “Activities”. The activities should be leading towards the completion of a given milestone.

(6) Indicate Time Frame of Implementation

The activities should be synchronized in the form of schedules of implementation projected within the 2.5 to 3-year time frame; further broken down per quarter.

Time frame tells us the amount of time needed to carry-out: 1) all of the activities involved in implementing the AP; and 2) each of the activities to be undertaken to attain the KRA. Each activity has its own time frame. Plot/assign the quarter where the each of the activity is expected to be undertaken. The time frame for each activity is usually set in conjunction with other activity. It also suggests a sequence or chronology of activities over a range of time in two (2) different ways, i.e.,

Sequencing the different activities involved for a particular KRA. The activities involved in a particular KRA should be arranged sequentially before it is assigned with a time frame. For instance, implementation of O&M plans would require requisite activities before this can be started, such as PSPs formulation, General Assembly (GA) approval of PSPs, etc.

Timing of the different KRAs and its attendant activities. Before assigning and plotting the

timeframe for each activity, check whether a particular KRA and/or its activities to be started is a requisite or requirement of another KRA or activity. Cross-referencing of KRAs should be undertaken in consideration of the following:

- 1) KRA No.2: Basis for Unity and Strategic Direction should be undertaken first before KRA Nos. 4, 6 and 7 are initiated. PSP and training-program formulation and networking and alliance building cannot be pursued unless these are explicitly indicated in the WMCA's multi-year development plan.
- 2) KRA No.3: Leadership and Management should be in place first before KRA Nos. 4, 5, 6 and 7 are started. It is imperative that WMCA MC are already installed because they are the one responsible for the PSP and training-program formulation, MC and SC activities and financial resource and management.

The time frame should be written under the seventh column of Form WMCA ID-IP, whichever is applicable, under the table heading, "Time Frame".

(7) Assign Responsibility per Activity

Identify the responsibility which corresponds to each activity. Clearly delineate the responsibilities to be undertaken by the WMCA and the support activities to be provided by Regional Office, D-PIU and U-PIU. For the subject organization, identify the position of the person or the specific unit tasked to carry out the identified activities. Likewise, for DAR, also determine the position of the person or the specific unit tasked to do the job. For guidance in determining the appropriate responsible entity/position which will carry out the activities, please refer to "Responsibility Matrix" (Annex-4).

The responsible person or entity should be written under the eight column of Form ID-AP for WMCA, whichever is applicable, under the table heading, "Responsibility".

(8) Estimate Indicative Budget per Source

Determine the indicative budget to be shouldered by the WMCA, LGED (Upazila), LGED (District) and LGED (Central) for the 2.5 to 3-year implementation period.

The indicative budget should be written under the ninth column of Form ID-AP for WMCA, whichever is applicable, under the table heading, "Indicative Budget".

(9) Prepare the AP

The preparation of action plan shall be done by WMCA and assisted by Regional Office, D-PIU and U-PIU. The WMCA shall go through the action planning process identified above while filling-up the required data/information using Form ID-AP for WMCA, whichever is applicable.

The ID-AP shall be prepared and signed by WMCA Chairperson, endorsed by CO and GF at U-PIU, and UCO, UAO, ULO, UFO, UWFO and UEO, and Sociologist, AF and FF at D-PIU, reviewed by Local Consultant (Institutional Development Expert) at Divisional Office and approved by Project Director.

3. EVALUATION OF AP

3.1 Purpose of Evaluation

The purposes of evaluation are:

- 1) To enable the Local Consultant (ID Expert) to perform its project management functions under JICA-2 relative to the review and approval of ID-AP;
- 2) To provide the Local Consultant (ID Expert) with the tools to evaluate action plans

developed for JICA-2 assisted WMCAs; and

- 3) To facilitate common understanding of the criteria/basis for the Local Consultant (ID Expert)'s evaluation and approval of the ID-APs.

3.2 Aspects to be Evaluated

The following aspects of the ID-AP shall be covered by review and approval of the Local Consultant (ID Expert):

- 1) Baseline data
- 2) Target Output
- 3) Milestone
- 4) Activity
- 5) Time Frame
- 6) Responsibility
- 7) Indicative Budget

The detailed description of the above aspects is discussed in the Guidelines on the Preparation of ID-AP. All KRA indicators/sub-indicators of the Plan shall also be looked into and determined if this will be supported or not by JICA-2.

3.3 Evaluation Criteria

The following criteria shall be used by the Local Consultant (ID Expert) in evaluating the Plan:

- 1) For Baseline Data:
 - Presence of baseline data
- 2) For Target Output:
 - Consistency with baseline data
 - Quantifiable for monitoring
 - Consistency with JICA-2 performance targets
 - Achievable within 2.5 to 3 years
- 3) For Milestone:
 - Consistent with target output
- 4) For Activity:
 - Logical sequence of activities
 - Appropriate to attain milestone
- 5) For Time Frame:
 - Realistic allocation of time per activity
 - Synchronized with other KRA/activities
- 6) For Responsibility:
 - Appropriate unit/person assigned by WMCA
 - Identified Support Institution is capable to accomplish the activities
- 7) For the Indicative Budget
 - Appropriate fund source identified
 - Within JICA-2 standard cost

3.4 Tools for Evaluation

In evaluating the different Aspects of the ID-AP, the following forms shall be accomplished and forwarded by the Local Consultant (ID Expert) to the Project Director (PD):

(1) Form ID-AP RE01: Summary of Evaluation Checklist for AP (Summary of Form ID-AP RE02)

This evaluation form embodies the following items:

- 1) Scope of Development – information to be provided by the Local Consultant (ID Expert) shall include: name of WMCA, full address of WMCA, type of sub-project, proposed business and service supported by JICA-2, and duration of JICA-2 institutional development assistance;
- 2) Evaluation – this item shall be accomplished by indicating the results of the evaluation of the different aspects per KRA, the information of which shall be taken from the Overall Result Column of ID-AP RE02. This shall also indicate the final evaluation of the Local Consultant (ID Expert) on the AP, whether approved or for revision.
- 3) The Local Consultant (ID Expert)'s Recommendation – this shall reflect the recommendation of the Local Consultant (ID Expert) which shall be based on the final result of the evaluation.
- 4) Attachments – this indicate that the duly-accomplished ID-AP RE02 and the approved AP shall be attached.

(2) Form ID-AP RE02: Evaluation Checklist for AP

This Form contains the following items:

- 1) Not Applicable (NA) Column –this reflect the KRA indicator/sub-indicator that will not be supported by JICA-2 because “no target” is shown in Form ID-AP for WMCA. This is an indication that the WMCA has already attained the desired performance level as shown in Baseline Data Column of Form ID-AP for WMCA. All KRA indicators/sub-indicators with tick-marks under the NA Column shall not be subjected to evaluation.
- 2) Evaluation Column -this shall depict the evaluation made on the different aspects of the AP for all KRA indicators/sub-indicators to be supported by JICA-2. The result of the evaluation of a particular aspect shall be reflected by placing a tick-mark on “approved” or “revision” boxes per evaluation criterion. Additional comments/observations may also be provided for a particular Aspect of the AP for each KRA indicator/sub-indicator.
- 3) Overall Result Column – this shall reflect overall results of evaluation made on the different aspects for a particular KRA indicator/sub-indicator by placing a tick-mark on the “approved” or “revision” boxes.

3.5 Results of the Evaluation

The outcomes/results of the evaluation of the Local Consultant (ID Expert) shall be known by putting a tick mark on either the “approved” box or the “revision” box.

(1) Per Aspect for KRA Indicator/Sub-Indicator to be supported by JICA-2

The evaluation made on every aspect of the cooperative development action plan may yield any of the following result:

Approved – if the Aspect meets the criterion.

Revision – if the Aspect does not meet/satisfy the criterion.

(2) Overall Result per KRA Indicator/Sub-Indicator

The overall evaluation of particular KRA indicator/sub-indicator may yield the following results:

Approved -

if all results of evaluation under the Baseline Data, Target Output, Milestone and Responsibility have yielded “approve” results, regardless whether the criteria under Activity, Time Frame and Indicative Budget have yielded “revision” results.

Revision -

if at least one of the results of evaluation under the Baseline Data, Target Output, Milestone and Responsibility have yielded “revision” results, regardless whether the criteria under Activity, Time Frame and Indicative Budget have yielded “approved” results.

(3) Final Results

The final results of the evaluation of the Plan shall be derived by looking at all the Overall Results Column of ID-AP RE02. This may yield the following final result:

Approved –

this is given if the Overall Result Column of ID-AP RE02 indicates that all KRA indicators/sub-indicators have tick-marks on “approved boxes”.

Revision –

this is given if the Overall Result Column of ID-AP RE02 shows that at least one of the KRA indicator/sub-indicator has a tick-mark on “revision box”.

3.6 General Procedures

The overall evaluation and approval process to be adopted for ID-AP shall observe the following:

(1) Pre-evaluation

- 1) Follow-up submission of ID-AP by JICA-2 assisted WMCA (by the Local Consultant (ID Expert))
- 2) Acknowledge receipt of ID-AP (by the Local Consultant (ID Expert)).

(2) Evaluation and Approval

- 1) Evaluation of submitted ID-AP by performing the following (by the Local Consultant (ID Expert)):
 - a) Accomplishment of Form ID-AP RE02; and
 - b) Accomplishment of Form ID-AP RE01 (Summary of Form ID-AP RE02).
- 2) Approval of ID-AP (by the Local Consultant (ID Expert)).
- 3) Evaluation and approval or revision irrigation development action plan, if necessary (by the Local Consultant (ID Expert)).

(3) Post-evaluation

- 1) Feed-back results of evaluation to PPMO and concerned WMCA (by the Local Consultant (ID Expert)).
- 2) Submission of Form ID-AP RE01 and 02 together with approved ID-AP to PD (by the

Local Consultant (ID Expert)).

- 3) Confirm approval of the Local Consultant (ID Expert) (by PD).

3.7 Responsible for the Evaluation and Approval of AP

- 1) In observance of the mainstreaming and regionalized project management thrusts of JICA-2, the Local Consultant (ID Expert) shall be the unit responsible for the evaluation and approval of the ID-APs.
- 2) After the review and evaluation of the Local Consultant (ID Expert), the PD shall be responsible for the approval of all ID-APs.

Training on Overall Management for JICA-2

No	Participants	Type of Training	Name of Training Course	Venue	Possible Trainer/ Resource Person/ Organization
1	PMU, PIU, LGED/PC	Orientation	Training or workshop on Gender Action Plan (GAP) 2017-2021	LGED HQ/ Region/RTC	PMU, PC
2	DWA, DoF, DoC, DAE, DLS, DYD (HQ Dist. and UZ)	Orientation	Orientation on JICA-2 Gender Activities in Water Management for Partner Agencies	LGED HQ/ RTC/ Region/District	PMU, Sociologist-Gender, D-PIU, PC/GDS, Gender Development Forum, DWA
3	Local people	Orientation	Participatory Water Resources Management	Folk Song and Drama in SP area	NGO
4	Union Parishad (UP) members	Orientation	Union Parishad Role in Water Resources Management	Rural Development Academy (RDA, BARD)	RDA and BARD Specialists
5	UP Chairperson, Members and Secretaries	Orientation	Subproject Identification	LGED Upazila Office	UE, WRE, SE
6	IDS & QCE, Regional Office, Water Resource Development (WREs), D-PIU	Orientation	Field Reconnaissance	LGED RTC	PMU, Project Consultants
7	Project Consultants and Project & IWRMU Staff	Orientation	Subprojects PRA and FS	Rural Development Engineering Center (RDEC)	PMU, Project Consultants
8	Water Resources Engineers (WREs), Socioeconomists (SEs), SAEs	Orientation	Subprojects PRA and FS	LGED Regional Training Centre (RTC)	PMU, Project Consultants
9	PRA Teams	Orientation	Project Description and Subproject Development Process	RDEC	PMU, Project Consultants
10	FSDD Teams	Orientation	Project Description and Subproject Development Process	RDEC	PMU, Project Consultants
11	Upazila Engineers (UEs), WREs, SEs, SAEs	Orientation	Project Implementation Activities	LGED RTC	PMU, Project Consultants
12	Executive Engineers (XENs)	Orientation	Social and Institutional Aspects of Project	LGED RTC	PMU, Project Consultants
13	Senior Assistant Engineers (Sr. AEs)	Orientation	Social and Institutional Aspects of Project	LGED RTC	PMU, Project Consultants
14	Assistant Engineers (AEs)	Orientation	Social and Institutional Aspects of Project	LGED RTC	PMU, Project Consultants
15	UEs	Orientation	Social and Institutional Aspects of Project	LGED RTC	PMU, Project Consultants

Annex-1: Training List

No	Participants	Type of Training	Name of Training Course	Venue	Possible Trainer/ Resource Person/ Organization
16	Project/IWRMU Personnel, Consultants	Orientation	MIS Data Collection and Analysis	RDEC	PMU, Project Consultants
17	XENs, UEs, WREs, SEs, AC Land and DOC, DAE, DFO, DLS & DWA Officials	Orientation	WMCA Establishment and Management	LGED RTC	PMU, Project Consultants
18	DAE, DLS and SRDI District Officials/Specialist	Orientation	Project Effect on Agriculture Production	LGED RTC	PMU, Project Consultants
19	UFOs	Orientation	Subprojects Fisheries Resource Management	LGED RTC	PMU, Project Consultants
20	PMU and District XEN, LGED/PC	Orientation	Concept on Gender and why gender matters in water management	LGED HQ/ Region/RTC	PMU, PC, GDF, DWA, Specialized NGO
21	BARD and RDA Trainers	TOT	Union Parishad Role in Water Resources Management	BARD, RDA	PMU, Project Consultants
22	UE, WRE, SEs, CO, Facilitators	TOT	Subproject Identification	LGED RTC	PMU, Project Consultants
23	UEs, AEs & WREs, SAEs, SEs, COs, GFs	TOT	Earthwork Method for LCSs	LGED RTC	PMU, Project Consultants
24	Principal and Instructors of Cooperative Zonal Institute (CZIs)	TOT	Basic Cooperative Management	Cooperative Academy	Project Consultants, DOC
25	SEs	TOT	Micro Credit Management	LGED RTC	Specialized organization personnel
26	SEs, WREs	TOT	Orientation on WMCA By-Laws Drafting	LGED RTC	PMU, Project Consultants
27	LGED and project Field Staff	TOT	Gender Concept and Role of Gender in Water Management	Subproject	PMU, Project Consultants, NGO
28	LGED XENs (Training) and WREs	TOT	WMCA's Construction Monitoring Training	LGED RTC	PMU, Project Consultants
29	LGED XENs (Training), WREs & SEs	TOT	O&M Training	LGED RTC	PMU, Project Consultants
30	Agriculture Training Institute (ATI) Instructors/NA Specialists	TOT	Sustainable Agricultural Production in Subproject Areas	RDEC/LGED RTC/RDA/NATA	PMU, Project Consultants
31	WRE, SEs	TOT	Environmental Issues and Environmental Mitigation Plan	RDEC/LGED RTC	PMU, Project Consultants, DOE Specialist
32	BARD and RDA Specialists	TOT	Poverty Reduction Plan	PMU, Project Consultants	BARD, RDA
33	RDA Specialists	TOT	On-farm Water Management	PMU, Project Consultants	RDA

No	Participants	Type of Training	Name of Training Course	Venue	Possible Trainer/ Resource Person/ Organization
34	RDA Specialists	TOT	Sustainable Agricultural Production	PMU, Project Consultants	RDA
35	UE, AE(Water), SAE (Water), Sociologist, Facilitator	TOT	TOT on Gender Concept and Role of Gender in Water Management for Field Staff	LGED HQ/Regional Selected Venue (GO/NGO)	PMU, PC, SE- region, PIU, or selected Suitable GO/NGO
36	UE, AE(Water), SAE(Water), Sociologist, Facilitator	TOT	TOT on Women Human Rights, Legal Aspects and woman empowerment	LGED HQ/ RTC/ Dist/Other Suitable GO/NGO	Third party expert/ selected Suitable GO/NGO
37	AEs (PMU), District XENs, WREs, SEs and SAEs	Planning, Design & Construction	Data Collection for Subproject Appraisal	LGED RTC	PMU, Project Consultants
38	AEs (PMU & LGED), District XENs, WREs	Planning, Design & Construction	Planning Methods and Design Concepts	LGED RTC	PMU, Project Consultants
39	WREs, SAEs	Planning, Design & Construction	Engineering Survey and Geotechnical Investigation	LGED RTC	LGED Training Unit
40	WREs, SEs, SAEs	Planning, Design & Construction	Basic Computer Training (BCT) Course	LGED RTC	LGED Training Unit
41	WREs, SAEs	Planning, Design & Construction	Computer based Estimate Preparation (RSEPS) and Earth Volume Calculation (EVCS) Software	LGED RTC	LGED Training Unit
42	WREs, SAEs	Planning, Design & Construction	Understanding Drawings of Hydraulic Structures	LGED RTC	PMU, Project Consultants
43	District AEs, UEs, WREs	Planning, Design & Construction	Construction Practices and Quality Control	LGED RTC	PMU, Project Consultants
44	SAEs	Planning, Design & Construction	Construction Practices and Quality Control	LGED RTC	PMU, Project Consultants
45	LCS members	Planning, Design & Construction	Earthwork Methods for LCSs	Subproject Area	UE, WRE, SAE, SE, CO, GF
46	UEs	Planning, Design & Construction	Construction Monitoring	LGED RTC	PMU, Project Consultants, XEN Training
47	UEs, Agriculture and Fisheries Facilitators	O&M	Subproject O&M	LGED RTC	PMU, Project Consultants, XEN Training
47	SAEs	Planning, Design & Construction	Construction Monitoring	LGED RTC	PMU, Project Consultants, XEN Training, WRE

No	Participants	Type of Training	Name of Training Course	Venue	Possible Trainer/ Resource Person/ Organization
48	SAEs, COs	O&M	Subproject O&M	LGED RTC	XEN Training, WRE
49	SEs and WREs	Foundation Training	Responsibilities of Socioeconomist and Water Resources Engineer	LGED RTC	PMU, Project Consultants
50	Facilitators: General (GF), Agriculture (AF) & Fisheries (FF)	Foundation Training	Responsibilities of Facilitators: General, Agriculture and Fisheries	LGED RTC	PMU, Project Consultants
51	PRA Teams, NGOs/Firms Personnel	Follow Up/Refresher	PRA and FS Works	RDEC	PMU, Project Consultants
52	LGED XEN (Training) and WRE	Follow Up/Refresher	O&M Training Review	LGED RTC	PMU, Project Consultants
53	AFs	Follow Up/Refresher	Subproject Agricultural Development	RDEC/RTC	PMU, Project Consultants
54	AFs	Follow Up/Refresher	Review of Effect Monitoring and Evaluation (EME) Agricultural Findings	RDEC/RTC	PMU, Project Consultants
55	UCO/ DoC Inspector/Asstt. Inspector	WMCA Establishment and Management	Audit and Inspection of WMCAs	CZI	DOC
56	Regional IDS, District SEs and WRE	WMCA Establishment and Management	Workshop on Better WMCA Practice Experience Sharing	LGED RTC	PMU, Project Consultants
57	FS Team	Awareness and Orientation on JICA-2 Gender Activities	Gender equity and orientation on gender activities in water management for FS Team	LGED HQ/ RTC/ Region/District	PMU, PC, DWA, GDF
58	CO, GF, WMCA MC Members	Awareness and role of MC	Gender Awareness Training and Role of Gender in Water Management for Field Staff and WMCA Management Committee	SP Area/ WMCA Office	D-PIU, U-PIU, PC, DWA, DCO/UCO
59	UP Chairman and Members (Chairman-1, Female Member-1 and Male Member-1)	Awareness and role of UP	Gender Awareness Training and Role of Gender in Water Management for UP Chairman and Members	LGED HQ/ RTC/ Region/District	D-PIU, U-PIU, PC, DWA, DCO/UCO

Training on WMCA for JICA-2

No.	Participants	Type of Training	Name of Training Course	Venue	Possible Trainer/ Resource Person/ Organization
1	SEs, Facilitators, Community Organizers (COs), WMCA MCs, UP Staff, DAE SAAOs, DLS & DOF Field Assistants	Orientation	Poverty Reduction Plan	BARD	Project Consultants, PMU, BARD
2	Potential members of WMCA	Orientation	Formation of Organizing Committee	Subproject Area	LGED, Project Consultants, DOC
3	WMCA members, subproject beneficiaries	Orientation	Environment Awareness and Local Resource Management	Subproject Area	WRE, SE
4	WMCA Members	TOT	Women Human Rights, Legal Aspects and woman empowerment	Subproject	NGO or Other
5	WRE, SEs and WMCA O&M Subcommittee Members	TOT	O&M Awareness Building	LGED RTC	PMU, Project Consultants
5	District XENs, UEs, WREs, SEs, SAEs, COs, GF, WMCA Chairperson	Planning, Design & Construction	District Workshop on Earthwork Implementation	LGED RTC	PMU, Project Consultants
6	WMCA MC, Construction Supervision Subcommittee and UP members	Planning, Design & Construction	WMCA Construction Monitoring	Subproject Area	XEN (Training) LGED, WRE
6	WMCA FMC, GF, SE, WRE, SAE, CO	WMCA Establishment and Management	Training on WMCA Management	Cooperative Zonal Institute (CZI)	DOC, PMU, Project Consultants
7	WMCA MC Chairperson, Treasurer and Secretary and Accountant	WMCA Establishment and Management	Management of WMCA Accounts	CZI	DOC, Project Consultants
8	Elected Members of WMCA MC	WMCA Establishment and Management	Basic Cooperative Management	CZI	DOC
9	WMCA MC Members, GF	WMCA Establishment and Management	WMCA Development & Micro-Credit Management	Subproject Area	SE
10	WMCA MC Members, Accountant, Micro-Credit Subcommittee Members	WMCA Establishment and Management	Micro Credit Management	Subproject Area	SE
11	WMCA MC Members	WMCA Establishment and Management	Local Resources Mobilization and Public Services Accessibility	LGED RTC	PMU, Project Consultants
12	WMCA General Members	WMCA Establishment and Management	Member Education Programme (MEP)	Subproject Area	PMU, DOC
13	WMCA MC Members	WMCA Establishment and Management	Better WMCA Practice Experience Sharing	LGED RTC	Successful WMCA, IDS/SE/WRE

No.	Participants	Type of Training	Name of Training Course	Venue	Possible Trainer/Resource Person/Organization
14	WMCA OC Convenor, UCO, GF	WMCA Establishment and Management	Orientation on WMCA By-laws drafting	Subproject Area	IDS, SE, WRE
14	WMCA MC Members	Gender and Development	Concept on Gender and why gender matters in water management	Subproject Area	PMU, Project Consultants, SE, DWA, DCO
15	UP Chairman and Members, Field Staff (SAE, CO, Facilitators), WMCA MC, WMCA Members	Gender and Development	Gender Awareness on Roles of Women in Water Management	Subproject Area	PMU, Project Consultants, SE, DWA, DCO
16	WMCA Women Members	Gender and Development	Women's Leadership and Empowerment, and their Roles in Decision Making in WMCAs	Subproject Area	PMU, Project Consultants, DWA, NGO
17	WMCA Women Members	Gender and Development	Income Generating Activities	Subproject Area	PMU, Project Consultants, DWA, NGO
18	WMCA General members	O&M	WMCA Awareness Building on O&M	Subproject Area	XEN Training, WRE, SE
19	WMCA MC and O&M Subcommittee members	O&M	O&M Training (Before Handover)	Subproject Area	XEN Training, WRE
20	WMCA MC and O&M, Agriculture and Fisheries Subcommittee members, SAE	O&M	Subproject impact review for O&M enhancement	RTC/NATA/RDA	XEN Training, NATA/RDA Specialists
20	WMCA Agriculture Subcommittee members, Beneficiary farmers, SAAO, AF	Agriculture	Sustainable Agricultural Production	ATI, NATA, Agriculture Research Institutes (ARIs)	ATI Instructors, NATA Specialists, ARI Specialists
21	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Integrated crop/Pest Management (ICM/IPM)	Subproject Crop Field	DAE IPM Specialist, SAAO, AF
22	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Agriculture Resource Management (land, soil, water)	Subproject Crop Field	SRDI Scientific Officer
23	WMCA MC, O&M and Agriculture Subcommittee and Women members, SAAO, AF	Agriculture	On-farm Water Management	RDA	RDA Specialists
24	WMCA women members	Agriculture	Agriculture Training for Women: Crop Seed Management	RDA/BARD/AIT/NATA/ARI	RDA, BARD, AIT, NATA, ARI Specialists
25	WMCA women members	Agriculture	Technologies for Women's Empowerment in Agriculture	Subproject Area, Upazila Agriculture Office	SAAO, UAO, DTO

No.	Participants	Type of Training	Name of Training Course	Venue	Possible Trainer/ Resource Person/ Organization
26	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Improved production technologies of field crops	Subproject Area, Upazila Agriculture Office	SAAO, UAO, DTO
27	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Soil fertility management	Subproject Area, Upazila Agriculture Office	SAAO, UAO, DTO
28	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Homestead vegetable production for women	Subproject Area, Upazila Agriculture Office	SAAO, UAO, DTO
29	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Improved method of jute retting	Subproject Area, Upazila Agriculture Office	SAAO, UAO, DTO
30	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Quality seed production, processing and preservation	Subproject Area, Upazila Agriculture Office	SAAO, UAO, DTO
31	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Agri machinery use and maintenance	Subproject, Upazila Agriculture Office, RDA	SAAO, UAO, DTO, RDA Specialists
32	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Crop storing	Subproject Area, Upazila Agriculture Office	SAAO, UAO, DTO
33	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Agricultural product processing, preservation and marketing	RDA	RDA Specialists
34	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Irrigation management	Subproject Area, Upazila Agriculture Office	SAAO, UAO, DTO
35	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Orchard development and management	Subproject, Upazila Agriculture Office, RDA	SAAO, UAO, DTO, RDA Specialists
36	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Nursery establishment	Subproject, Upazila Agriculture Office, RDA	SAAO, UAO, DTO, RDA Specialists
37	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Climate change adaptation, vulnerability and risk assessment and management	Subproject, Upazila Agriculture Office, RDA	SAAO, UAO, DTO, RDA Specialists

No.	Participants	Type of Training	Name of Training Course	Venue	Possible Trainer/ Resource Person/ Organization
38	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Agriculture market and supply chain	Subproject Area, Upazila Agriculture Office	SAAO, UAO, DTO
39	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Value chain approaches in agribusiness	Subproject Area, Upazila Agriculture Office	SAAO, UAO, DTO
40	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Information and communication technology (ICT) in agriculture	Subproject Area, Upazila Agriculture Office	SAAO, UAO, DTO
41	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Cow, beef cattle and goat raising	Subproject ArDLS, Upazila Office	ULS
42	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Duck-poultry farm management	Subproject Area, Upazila Livestock Office	ULS
43	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Livestock disease management and vaccination	Subproject Area, Upazila Livestock Office	Veterinary Surgeon
44	WMCA Agriculture Subcommittee members, Beneficiary farmers	Agriculture	Livestock fodder production	Subproject Area, Upazila Livestock Office	ULS
44	WMCA MC Chairperson & Secretary, Fisheries Subcommittee Members, FFs	Fisheries	Fisheries Program Management	BFRI/DOF District Office	PMU/Project Consultants, BFRI/DoF Specialists
45	WMCA members	Fisheries	Fish Production Technology:	DOF/FRI	BFRI/DoF Specialists
46	WMCA members	Fisheries	Freshwater aquaculture	FRI	BFRI Specialists
47	WMCA members	Fisheries	Inland fisheries management	FRI	BFRI Specialists
48	WMCA members	Fisheries	Lake management	BFRI/DOF District Office	BFRI/DoF Specialists
49	WMCA members	Fisheries	Fish diseases	FRI	BFRI/DoF Specialists
50	WMCA members	Fisheries	Brackish water aquaculture	FRI	BFRI/DoF Specialists
51	WMCA members	Fisheries	Fish breeding	FRI	BFRI/DoF Specialists
52	WMCA Women members	Fisheries	Women in Fisheries	BFRI/Upazila Fisheries Office	BFRI/DoF Specialists
53	WMCA members	Fisheries	Improved aquaculture technologies	BFRI/Upazila Fisheries Office	BFRI/DoF Specialists

No.	Participants	Type of Training	Name of Training Course	Venue	Possible Trainer/Resource Person/Organization
54	WMCA members	Fisheries	Fisheries resources conservation and management	BFRI/Upazila Fisheries Office	BFRI/DoF Specialists
55	WMCA Women members	Fisheries	Women's Empowerment and their Role in Fisheries Development	BFRI/Upazila Fisheries Office	BFRI/DoF Specialists
56	WMCA members	Fisheries	Community based fisheries management	BFRI/Upazila Fisheries Office	BFRI/DoF Specialists
56	MC and Environmental Management, Agriculture & Fisheries Subcommittee Members	Environment	Environmental Mitigation	Subproject	WRE, SE
57	MC and Environmental Management, Agriculture & Fisheries Subcommittee Members	Environment	Environment Monitoring	Subproject	WRE, SE
58	WMCA MC Members, Accountant, Micro-Credit Subcommittee Members	Follow Up/Refresher	Micro-Credit Management	CZI	CZI Instructors, PMU, Project Consultants
59	Elected Members of WMCA MC	Follow Up/Refresher	Basic Cooperative Management	CZI	CZI Instructors
60	WMCA Member	Follow Up/Refresher	Gender Awareness	Subproject Area	DWA, SE
61	WMCA O&M Subcommittee Members	Follow Up/Refresher	Joint Walkthrough (pre- and post-monsoon)	Subproject Area	WRE and SAE
62	WMCA O&M Subcommittee Members	Follow Up/Refresher	O&M Training (after Handover)	LGED RTC	Project Consultants, PMU and XEN (Training)
63	WMCA O&M Subcommittee Members	Follow Up/Refresher	Study Tour/ Site Visit for O&M	Subproject Area	Selected WMCA MC and O&M Subcommittee Members
64	WMCA Farmer members	Follow Up/Refresher	Demand-led Training for Subproject Agricultural Development	ATI, RDA, BARD, NATA	ATI, RDA, BARD, BARI, BRRI, BADC, DLS Specialists
65	WMCA MC, O&M & Agriculture Subcommittee Members, Beneficiary Farmers	Follow Up/Refresher	Agricultural Production and Land Use Plan Preparation	Subproject Area	UAO, ULO, UE, UFO, SAAO
66	DAE Sub-Assistant Agriculture Officer (SAAO), Agriculture Subcommittee Members, COs	Follow Up/Refresher	Understanding and Monitoring of Subproject Effects on Agriculture	DAE ATI, NATA	ATI Instructor/NATA Specialists
67	Agriculture Subcommittee Members, CO, SAAO	Follow Up/Refresher	Farm Visits and On-Farm Training	JICA-1 Subproject	SE, WRE, AF

No.	Participants	Type of Training	Name of Training Course	Venue	Possible Trainer/ Resource Person/ Organization
68	Agriculture Subcommittee Members, CO, SAAO, AF	Follow Up/Refresher	Review of Subproject Agricultural Activities	LGED Upazila Office	UE, WRE, UAO, ULO, BADC
69	UAOs, ULOs, BADC, WMCA Chairperson/Secretary, AF	Follow Up/Refresher	District Level Assessment of Subproject Agricultural Activities	LGED Upazila Office	LGED XEN, DAE DD, DLO, SRDI, BADC
70	WMCA Fisheries Subcommittee members, fishers members	Follow Up/Refresher	Subproject Fisheries Development and Annual Fish Production Plan	Subproject	FF, UFO, Field Assistant
71	WMCA Fisheries Subcommittee members, fishers members	Follow Up/Refresher	On-site Fisheries Training and Demonstration	Subproject Waterbody	PMO, Project Consultants, UFO, FF
72	WMCA Fisheries Subcommittee members, fishers members, FFs	Follow Up/Refresher	Review of Subproject Fisheries Management	DOF Upazila Office	UE, UFO
73	Selected WMCA Members (Male and Female 50:50)	Awareness to increase active participation	Gender Awareness Training and Role of Gender in Water Management for WMCA Members (30 person*145 SP)	SP Area/ WMCA Office	DWA, Sociologist/ PC/PMU/ PIU
74	Selected Family of WMCA Members (Male and Female 50:50)	Awareness to increase active participation	Gender Awareness Training for the Family Layer of the WMCA Members	SP Area/ WMCA Office	DWA, Sociologist/ PC/PMU/ PIU
75	Selected SP Beneficiaries ((Male and Female 50:50)	Awareness	Gender Awareness Dissemination Training for SP Beneficiaries (100 person*145 SP)	SP Area/ WMCA Office	DWA, Sociologist/ WMCA MC/ Potential Trained WMCA Member/GDSC
76	WMCA MC, CO, GF and selected Members (Male and Female 50:50)	Awareness	Training on Women Human Rights and Legal Aspects for WMCA Members (30person*244 SP)	SP Area/ WMCA Office	DWA, Sociologist/ PC/PMU/ PIU, DCO/UCO
77	Selected SP Beneficiaries ((Male and Female 50:50)	Awareness	Dissemination Training on Human Rights of Women, Legal Aspects and Women's Empowerment for SP Beneficiaries (100 person*244 SP)	SP Area/ WMCA Office	DWA, Sociologist/ WMCA MC/ Potential Trained WMCA Member/GDSC
78	WMCA MC and selected Members (Male and Female 50:50)	Awareness and Empowerment of women	Training on Women's Leadership and Empowerment, and their Roles in Decision Making in WMCAs (30 person*244 SP)	SP Area/ WMCA Office	DWA, Sociologist/ PC/PMU/ PIU
79	Selected SP Beneficiaries ((Male and Female 50:50)	Awareness and Empowerment of women	Dissemination Training on Women's Leadership and Empowerment, and their Roles in Decision Making in WMCAs for SP Beneficiaries (100 person*244 SP)	SP Area/ WMCA Office	DWA, NGO/ Sociologist/ WMCA MC/ Potential WMCA Member

No.	Participants	Type of Training	Name of Training Course	Venue	Possible Trainer/ Resource Person/ Organization
80	WMCA Members (MC, Male and Female) of Additional Development and Flagship Development (Male and Female 50:50)	Follow Up/ Refresher	Refresher Training on Gender Awareness for WMCA Members of Rehabilitate Project (30 person*99 SP)	SP Area/ WMCA Office	D-PIU, U-PIU, PC, DWA, DCO/UCO
82	Selected Women Members of WMCA	Income Generating and Skill Development	Livestock, poultry & Duck Farming, Fish cultivation and Homestead Gardening, Vaccination for livestock	RDA/NAPE/ BAPARD/CZI/ BFRI/FRI/ DYD (Dept. of Youth Dev.)/RDRS/ Selected NGO	DWA, Dist./ Up. Ag. Officer, Dist./ Up. Livestock Officer, Dist./ Up. Fisheries Officer, SAAO, Sociologist/ PC/PMU/ PIU/ Expert of concern venue
83	Selected Women Members of WMCA	Income Generating and Skill Development	Bee Keeping and Honey Cultivation	Concern GO/NGO	Concern line department/ NGO/other organization
84	Selected Women Members of WMCA	Income Generating and Skill Development	Mushroom Cultivation	Concern GO/NGO	Concern line department/ NGO/other organization
85	Selected Women Members of WMCA	Income Generating and Skill Development	Tailoring/ Embroidery/Block & Batik	SP Area/ WMCA Office	DWA/ Suitable NGO
86	Selected Women Members of WMCA	Income Generating and Skill Development	Vermin Culture/ Preparing Organic & Compost Fertilizer.	RDA/BARD/RDRS/ Other suitable venue	RDA/BARD/RDRS/ Other suitable NGOs
87	Selected Women Members of WMCA	Income Generating and Skill Development	Mobile & Motor Cycle Repairing	DWA/ Selected NGO	DWA Training centre/ Selected NGO/Other suitable venue
88	Selected Women Members of WMCA	Income Generating and Skill Development	Food Processing /Snacks Corner Management	DWA/ Selected NGO	DWA Training centre/ Trainer of selected NGO/Other suitable venue
89	Selected Women Members of WMCA	Income Generating and Skill Development	Pearl Cultivation	BFRI/ Other suitable Org.	Trainer of BFRI/ Other suitable Organization
90	Selected Women Members of WMCA	Income Generating and Skill Development	Beauty Parlor Work	DWA/ Selected NGO	DWA Training centre/ Selected NGO/Other suitable venue
91	Selected Women Members of WMCA	Income Generating and Skill Development	Basic Computer	LGED HQ/ RTC/ Region/District	DWA/ Suitable NGO/LGED
92	Selected Women Members of WMCA	Income Generating and Skill Development	Others as per need assessment	Depends on type of training	Depends on type of training
93	Selected Women Members of WMCA	Income Generating and Skill Development	Dissemination of IGA for the male-female beneficiaries	SP Area/ WMCA Office	Training Recipients/GDSC in assistance of PIU, DWA

GUIDE IN TARGET OUTPUT SETTING FOR WMCA DEVELOPMENT

KRA/Indicators/Criteria	Performance Standards	JICA-2 Target
1 General Information		
1.1 Legal Personality		
Registration with DOC	<ul style="list-style-type: none"> Registered with DOC 	<ul style="list-style-type: none"> Registered with DOC
1.2 Membership		
Total	<ul style="list-style-type: none"> At least 70% of Potential Beneficiary Households 	<ul style="list-style-type: none"> Continuing membership expansion
1.3 Members' Participation/Patronization	<ul style="list-style-type: none"> At least 1st year O&M fund 	<ul style="list-style-type: none"> Continuing financial expansion
1.4 Coop office	<ul style="list-style-type: none"> Office with utilities 	<ul style="list-style-type: none"> Office with utilities
1.5 Basic office equipment and furniture	<ul style="list-style-type: none"> Typewriter Calculator Tables and chairs Filing cabinets Communication facilities Bulletin board & the like Computer & printer 	<ul style="list-style-type: none"> Typewriter Calculator Tables and chairs Filing cabinets Communication facilities Bulletin board & the like Computer & printer
1.6 Physical Infrastructure Support	<ul style="list-style-type: none"> Existing physical infrastructure support 	<ul style="list-style-type: none"> Functional existing physical infrastructure support
1.7 Organization	<ul style="list-style-type: none"> Presence of organization 	<ul style="list-style-type: none"> Active Organization
2 Basis for unity and strategic direction		
2.1 VMGO	<ul style="list-style-type: none"> Written, posted in office, and regularly updated 	<ul style="list-style-type: none"> Written, posted in office, and regularly updated
2.2 Multi-year SDP	<ul style="list-style-type: none"> 3-5 year SDP and supported by annual operation plan and budget 	<ul style="list-style-type: none"> 3-5 year SDP and supported by annual operation plan and budget
2.3 Subcommittees' plans	<ul style="list-style-type: none"> All committees and subcommittees with plans 	<ul style="list-style-type: none"> All committees with plans and regularly updated
3 Leadership and Management		
3.1 Management Committee (MC) activities		
1) Regular election	<ul style="list-style-type: none"> Every 3 year 	<ul style="list-style-type: none"> Every 3 year
2) MC composition	<ul style="list-style-type: none"> 1 Chairperson, 1 Vice-chairperson, 1 Secretary, 1 Cashier and 8 General Members 	<ul style="list-style-type: none"> 1 Chairperson, 1 Vice-chairperson, 1 Secretary, 1 Cashier and 8 General Members
3) Regular MC meeting	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> Monthly with written minutes with at least 70% of members
3.2 Subcommittee (SC) activities		
1) SC membership	<ul style="list-style-type: none"> Construction Monitoring SC () O&M SC () Agriculture Development SC () Fisheries Development SC () Gender Development SC () Micro-Credit SC () Environmental Management SC () 	<ul style="list-style-type: none"> Construction Monitoring SC () O&M SC () Agriculture Development SC () Fisheries Development SC () Gender Development SC () Micro-Credit SC () Environmental Management SC ()
2) SC composition	<ul style="list-style-type: none"> 1 Convener (+Accountant for Micro-Credit SC) (Part/Full time) for each SC 	<ul style="list-style-type: none"> 1 Convener (+Accountant for Micro-Credit SC) (Full time) for each SC
3) Regular Committee meetings and reports preparation	<ul style="list-style-type: none"> Per By-laws 	<ul style="list-style-type: none"> Frequency per By-laws and with written Monthly Activity Report

KRA/Indicators/Criteria	Performance Standards	JICA-2 Target
3.3 WMCA Regular meeting		
1) General Meeting	<ul style="list-style-type: none"> Per By-laws 	<ul style="list-style-type: none"> Per By-laws
2) Special General Meeting	<ul style="list-style-type: none"> Per By-laws 	<ul style="list-style-type: none"> Per By-laws
3.4 Operations management records	<ul style="list-style-type: none"> 3 management records as follows: <ul style="list-style-type: none"> a) Members records b) Meeting result records c) Account record 	<ul style="list-style-type: none"> Safely kept at WMCA office the following: <ul style="list-style-type: none"> a) Members records b) Meeting result records c) Account record
4 Policies, Systems and Procedures (PSPs)		
Basic operational PSPs	<ul style="list-style-type: none"> Installed/established 12 PSPs as follows: <ul style="list-style-type: none"> a) record keeping b) membership expansion and development c) capital build-up (CBU) d) accounting e) budgeting f) Approving and Signing Authority g) performance review h) inspection i) audit j) Personnel and general administration k) funds management l) onitoring and evaluation 	<ul style="list-style-type: none"> Updated 12 PSPs as follows: <ul style="list-style-type: none"> a) record keeping b) membership expansion and development c) capital build-up (CBU) d) accounting e) budgeting f) Approving and Signing Authority g) performance review h) inspection i) audit j) Personnel and general administration k) funds management l) onitoring and evaluation
5 Resources Management		
5.1 Resource mobilization		
1) Subscribed capital	<ul style="list-style-type: none"> Per By-laws 	<ul style="list-style-type: none"> Per By-laws
2) Total paid up capital	<ul style="list-style-type: none"> Amount 	<ul style="list-style-type: none"> Amount of paid up capital is equal to amount of subscribed capital
3) Access to external funds	<ul style="list-style-type: none"> Loans/grants accessed 	<ul style="list-style-type: none"> Outstanding loans-current; grants fully utilized
4) CBU and savings properly accounted	<ul style="list-style-type: none"> Amount equal to total 	<ul style="list-style-type: none"> Amount equal to total
a) CBU	<ul style="list-style-type: none"> Amount on hand + in bank + investments = total CBU 	<ul style="list-style-type: none"> Amount on hand + in bank + investments = total CBU
b) Savings	<ul style="list-style-type: none"> Amount on hand + in bank + investments = total savings 	<ul style="list-style-type: none"> Amount on hand + in bank + investments = total savings
5.2 Account management		
1) Cash register updating	<ul style="list-style-type: none"> Have at least annual report composed of 1) statement of operation, 2) cash flow, 3) financial position 	<ul style="list-style-type: none"> Have at least annual report composed of 1) statement of operation, 2) cash flow, 3) financial position and presented to General Assembly
2) Audit of cash register	<ul style="list-style-type: none"> Annual audit by DOC 	<ul style="list-style-type: none"> Annual audit by DOC
3) Updated books of accounts	<ul style="list-style-type: none"> Books of accounts regularly updated as follows: <ul style="list-style-type: none"> a) General journal b) Cash receipt journal c) Cash disbursement journal d) Sales journal e) Purchase journal f) General ledger g) Others (specify:) 	<ul style="list-style-type: none"> Books of accounts regularly updated as follows: <ul style="list-style-type: none"> a) General journal b) Cash receipt journal c) Cash disbursement journal d) Sales journal e) Purchase journal f) General ledger g) Others (specify:)

KRA/Indicators/Criteria	Performance Standards	JICA-2 Target
5.3 Financial viability		
1) Service/business operation earning last year	<ul style="list-style-type: none"> Total business/service operation at least break even 	<ul style="list-style-type: none"> At least break even(cost covering) per service per business
2) Liquidity ratio	<ul style="list-style-type: none"> At least **:* 	<ul style="list-style-type: none"> At least **:*
3) Return on Equity (ROE)	<ul style="list-style-type: none"> At least *%* 	<ul style="list-style-type: none"> At least *%*
4) Debt-equity ratio	<ul style="list-style-type: none"> At least **:* 	<ul style="list-style-type: none"> At least **:*
5) Return on Capital (ROC)	<ul style="list-style-type: none"> At least *%* 	<ul style="list-style-type: none"> At least *%*
6) Loan repayment	<ul style="list-style-type: none"> updated payment 	<ul style="list-style-type: none"> updated and/or fully paid
6 WMCA Training Programs		
6.1 Regular trainings for members	<ul style="list-style-type: none"> Conducted: 	<ul style="list-style-type: none"> Conducted:
	a) Membership education	a) Membership education
	b) Leadership development	b) Leadership development
	c) Appropriate technology	c) Appropriate technology
	c-1) Crop production	c-1) Crop production
	c-2) Livestock and poultry production	c-2) Livestock and poultry production
	c-3) Aquaculture production	c-3) Aquaculture production
	c-4) Home welfare management	c-4) Home welfare management
	c-5) Processing	c-5) Processing
	c-6) Others (specify:	c-6) Others (specify:
	d) Others (specify:	d) Others (specify:
7 Networking and Alliance Building		
7.1 Coop participation in Local Government Institutions (LGI)	<ul style="list-style-type: none"> Participation in any of the following: 	<ul style="list-style-type: none"> Participation in any of the following
	a) Union Parishad	a) Union Parishad
	b) Upazila Parishad	b) Upazila Parishad
	c) District Parishad	c) District Parishad
7.2 Workable linkage with other organizations	<ul style="list-style-type: none"> Established linkage with other organizations as: 	<ul style="list-style-type: none"> Established linkage with other organizations as:
	a) member	a) member
	b) market outlet/supplier	b) market outlet/supplier
	c) financial service provider	c) financial service provider
	d) technology provider	d) technology provider
7.3 Access to technical and financial support	<ul style="list-style-type: none"> At least one of the followings: 	<ul style="list-style-type: none"> At least one of the followings:
	a) business sector	a) business sector
	b) LGI/government agencies	b) LGI/government agencies
	c) resource institutions	c) resource institutions
	d) NGOs	d) NGOs
	e) Financial institutions	e) Financial institutions

SAMPLE MILESTONE ACTIVITIES OF WMCA

KRA/Indicators/Criteria	Sample Milestone Activities
1. General	
1.1 Legal Personality	<ul style="list-style-type: none"> - OC formed - Awareness Campaign conducted - FMC formed via Election - Registered with DOC
1.2 Membership	<ul style="list-style-type: none"> - At least 70% of beneficiary households recruited - Additional (<u>number</u>) members recruited <ul style="list-style-type: none"> • Total Male Female
1.3 Members' Participation/ Patronization	<ul style="list-style-type: none"> - At least first year O&M fund collected - Additional (<u>BDT</u>) funds collected <ul style="list-style-type: none"> • O&M fee • Share • Savings • Others (specify:)
1.4 Office	<ul style="list-style-type: none"> - Coop office with electricity and water established <ul style="list-style-type: none"> • Owned • Rented • Temporary
1.5 Basic Office Equipment and Furniture	<ul style="list-style-type: none"> - Basic office equipment and furniture acquired <ul style="list-style-type: none"> • Typewriter • Calculator • Tables and chairs • Filing cabinets • Communication facilities • Bulletin board & the like • Computer & printer • Others (specify:)
1.6 Physical Infrastructure Support	<ul style="list-style-type: none"> - Physical infrastructure support acquired <ul style="list-style-type: none"> • Embankment of flood control • Drainage system • Water management facilities • Irrigation System • Village road • Post-harvest facilities <ul style="list-style-type: none"> -Solar dryer -Storage -Mechanical dryer -Rice mill • Rural market • Others (specify:)
1.7 Organizations	<ul style="list-style-type: none"> - Any active organization
2. Basis for Unity and Strategic Direction	
2.1 VMGO	<ul style="list-style-type: none"> - Written VMGO formulated and adopted by WMCA - VMGO posted in coop office - VMGO regularly updated
2.2 Multi-year Strategic Development Plan	<ul style="list-style-type: none"> - Planning workshop conducted - Multi-year Strategic Development Plan formulated and adopted by WMCA

KRA/Indicators/Criteria	Sample Milestone Activities
2.3 Subcommittee (SC)s' Plans	<ul style="list-style-type: none"> - Supported by annual operation plan and budget - Periodically reviewed and enhanced/updated - Workshop for the formulation of the plans conducted - SCs' Plans prepared - SCs' Plans updated <ul style="list-style-type: none"> • Construction Monitoring • O&M • Agriculture Development • Fisheries Development • Gender Development • Microcredit • Environmental Management • Others (specify: _____)
3. Leadership and Management	
3.1 Management Committee (MC) activities	
a) Regular election	- Every 3 year
b) MC Composition	<ul style="list-style-type: none"> - The followings assigned in MC: <ul style="list-style-type: none"> • 1 Chairperson • 1 Vice-Chairperson • 1 Secretary • 1 Cashier • 8 General Members
c) Regular MC Meeting	- (<u>number as per By-laws</u>) regular MC meetings conducted with minutes of meeting prepared
3.2 Subcommittee (SC)s' activities	
a) SC Membership	<ul style="list-style-type: none"> - SCs constituted with (<u>number</u>) members <ul style="list-style-type: none"> • Construction Monitoring SC • O&M SC • Agriculture Development SC • Fisheries Development SC • Gender Development SC • Micro-Credit SC • Environmental Management SC • Others (specify: _____)
b) SC Composition	<ul style="list-style-type: none"> - Full/Part-time Convener assigned in each SC (also Accountant for Micro-Credit SC) <ul style="list-style-type: none"> • Construction Monitoring SC • O&M SC • Agriculture Development SC • Fisheries Development SC • Gender Development SC • Micro-Credit SC • Environmental Management SC • Others (specify: _____)
c) Regular SC Meetings and Report Preparation	<ul style="list-style-type: none"> - (<u>number as per By-laws</u>) regular SC meetings with written Monthly Activity Report <ul style="list-style-type: none"> • Construction Monitoring SC • O&M SC • Agriculture Development SC • Fisheries Development SC • Gender Development SC • Micro-Credit SC • Environmental Management SC • Others (specify: _____)

KRA/Indicators/Criteria	Sample Milestone Activities
3.6 WMCA Regular Meeting	<ul style="list-style-type: none"> - Meetings conducted regularly as per By-laws <ul style="list-style-type: none"> • General Meetings • Special General meetings
3.7 Operations Management Records	<ul style="list-style-type: none"> - Training on records keeping conducted - Records kept - In-charge of records keeping designated <ul style="list-style-type: none"> • Members records • Meeting result records • Account records
4. Policies, Systems, and Procedures (PSPs) Basic Organizational PSPs	<ul style="list-style-type: none"> - PSPs formulation training conducted - PSPs prepared and approved by WMCA - PSPs reviewed and updated - PSPs maualized <ul style="list-style-type: none"> • Record keeping • Membership expansion and development • Capital build-up (CBU) • Accounting • Budgeting • Approving and Signing Authority Performance review <ul style="list-style-type: none"> • Inspection • Audit • Personnel and general administration • Funds management • Monitoring and evaluation
5. Financial Resources and Management	
5.1 Resource Mobilization a) Subscribed and Paid Up Capital b) Amount of Savings per Member c) Access to External Fund d) CBU and Savings Properly Accounted	<ul style="list-style-type: none"> - (<u>Amount</u>) capital subscribed - (<u>Amount</u>) capital paid up - CBU generation schemes adopted - (<u>Amount</u>) savings mobilized - Savings generation schemes adopted - (<u>Number</u>) members saving - (<u>Amount</u>) loan availed - (<u>Amount</u>) grant availed - Training on resource accessing conducted - Training on safekeeping and custody of funds conducted
5.2 Account Management a) Cash Register Updating c) Audit of Cash Register e) Updated Books of Accounts	<ul style="list-style-type: none"> - Cash register updated in items below: <ul style="list-style-type: none"> • Statement of operation • Cash flow • Financial position - Cash register audited by DOC - Training on bookkeeping conducted - Books of accounts installed - Books of accounts updated <ul style="list-style-type: none"> • General journal • Cash receipt journal • Cash disbursement journal • Sales journal • Purchase journal

KRA/Indicators/Criteria		Sample Milestone Activities
		<ul style="list-style-type: none"> • General ledger • Others(specify:
5.3	Financial Viability	
	a) Earning of Business/Service Operation	- Training on financial and cash management conducted
	b) Liquidity Ratio (at least *.*)	- Strategies formulated
	c) Return on Equity (at least *%)	- Strategies formulated
	d) Debt-Equity Ratio (at least *.*)	- Strategies formulated
	e) Return on Capital (at least *%)	- Strategies formulated
	f) Loan Repayment	- Strategies formulated
6. WMCA Training Programs		
	Regular Trainings for Members	<ul style="list-style-type: none"> - Trainings for members conducted • Membership education • Leadership development • Appropriate technology >Crop production >Livestock and poultry production >Aquaculture production >Home welfare management >Processing >Others (specify: • Others (specify:
7. Networking and Alliance Building		
7.1	Participating in Local Government Institutions (LGIs)	<ul style="list-style-type: none"> - Membership in LGIs established • Union Parishad • Upazila Parishad • District Parishad
7.2	Linkage with Other Organizations	
	a) Linkages with Other Organizations	- Linkage with other organizations established
	b) Workable Linkage with the said Organizations	<ul style="list-style-type: none"> - Workable linkage forged • Member • Market outlet/supplier • Financial service provider • Technology provider
7.3	Access to Technical and Financial Support	<ul style="list-style-type: none"> - Technical support accessed - Financial support accessed • Business sector • LGIs/Government agencies • Resource institutions • NGO • Financial institutions • Others (specify:

SUMMARY OF EVALUATION CHECKLIST FOR INSTITUTIONAL DEVELOPMENT ACTION PLAN (ID-AP) FOR WMCA DEVELOPMENT				Date:			
To: Project Director (PD)			or	From: Local Consultant (ID Expert)			
1. Scope of Development							
1) Name of WMCA							
2) Full Address of WMCA (inclu. District, Upazila, Union, Village)							
3) Types of SP Development							
<input checked="" type="checkbox"/> New							
<input type="checkbox"/> Additional							
<input type="checkbox"/> Flagship							
3) Proposed Business and Services supported by JICA-2							
4) Duration of JICA-2 Institutional Development Assistance From To							
2. Result of Evaluation							
Items in Action Plan for Federation Development	NA	AP	RE	Items in Action Plan for Federation Development	NA	AP	RE
1. General				5. Resources Management			
1.1 Legal personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.1 Resource Mobilization			
1.2 WMCA membership	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	a) Subscribed and paid up capital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.3 Member's participation/patronization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	b) Amount savings per member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.4 Office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	c) Access to external fund	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.5 Basic office equipment & furniture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	d) CBU and savings properly accounted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.6 Physical infrastructure support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.2 Account Management			
1.7 Organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	a) Cash register updating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Basis for Unity and Strategic Direction				b) Audit of cash register	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1 VMGO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	c) Updated books of accounts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2 Multi-year strategic development plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.3 Financial Viability			
2.3 Subcommittees' plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	a) Earning of business/service operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Leadership and Management				b) Liquidity ratio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1 Management Committee (MC) activities				c) Return of equity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a) Regular election	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	d) Debt-equity ratio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) MC composition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	e) Return on capital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Regular MC meeting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	f) Loan repayment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2 Subcommittee (SC) activities				6. WMCA Training Programs			
a) SC membership	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Regular training for members			
b) SC composition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. Networking and Alliance Building			
c) Regular SC meetings and report preparation				7.1 Participating in local government institutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3 WMCA regular meeting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.2 Workable linkage with other organizations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4 Operations management records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.3 Access to technical and financial support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. PSP				Final Result of Evaluation			
Basic organizational PSPs				<input type="checkbox"/> For Revision			
				(If any KRA has "RE", Final Result must be "For Revision")			
				Notes: NA: Not Applicable because Target is already attained.			
				AP: Approved			
3. Local Consultant (ID Expert)'s Recommendation							
<input type="checkbox"/> Recommend for Approval							
<input type="checkbox"/> Recommend for Revision (Details are shown in the attached Evaluation Check List [Form ID-AP RE02])							
4. Attachments:							
<input type="checkbox"/> Evaluation Check List for ID-AP (Form ID-AP RE02)							
<input type="checkbox"/> Approved Action Plan							
Prepared by:				Approved by:			
Local Consultant (ID Expert)				Project Director (PD)			

KRA Indicator/Sub-indicator	NA*	Evaluation																	Overall Result
		Evaluation Criteria	A. Baseline Data	B. Target Output				C. Milestone	D. Activity		E. Time Frame			F. Responsibility			G. Indicative Budget		
			Presence of Baseline Data	Consistent with Baseline Data	Quantifiable for Monitoring	Consistent with JICA-2 Performance Target	Achievable within 3 years	Consistent with Target Output	Logical Sequence of Activities	Appropriate to attain Milestone	Realistic Allocation of Time per Milestone /Activity	Synchronized with Other KRA / Milestone /Activities	Appropriate Unit/Person assigned by WMCA	Identified Support Institution is capable to accomplish the Milestone /Activity within allocated time frame	Identified Personnel is capable to accomplish the Milestone /Activity within allocated time frame	Appropriate Fund Source identified	Within JICA-2 standard cost		
2. Basis for Unity and Strategic Direction																			
2.1 VMGO	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
2.2 Multi-year Strategic Development Plan	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
2.3 Subcommittees' Plans	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
3. Leadership and Management																			
3.1 Management Committee (MC) activities																			
a) Regular Election	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
b) MC Composition	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
c) Regular MC Meeting	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
3.2 Subcommittee (SC) activities																			
a) SC Membership	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
b) SC Composition	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
c) Regular SC Meetings and Report Preparation	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
3.3 WMCA Regular Meeting	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
3.4 Operations Management Records	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	

KRA Indicator/Sub-indicator	NA*	Evaluation																	Overall Result
		Evaluation Criteria	A. Baseline Data	B. Target Output				C. Milestone	D. Activity		E. Time Frame			F. Responsibility			G. Indicative Budget		
			Presence of Baseline Data	Consistent with Baseline Data	Quantifiable for Monitoring	Consistent with JICA-2 Performance Target	Achievable within 3 years	Consistent with Target Output	Logical Sequence of Activities	Appropriate to attain Milestone	Realistic Allocation of Time per Milestone /Activity	Synchronized with Other KRA / Milestone /Activities	Appropriate Unit/Person assigned by WMCA	Identified Support Institution is capable to accomplish the Milestone /Activity within allocated time frame	Identified Personnel is capable to accomplish the Milestone /Activity within allocated time frame	Appropriate Fund Source identified	Within JICA-2 standard cost		
4. Policies, Systems, and Procedures (PSPs)																			
Basic Organizational PSPs		<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Comment/Recommendation:																
5. Resource Management																			
5.1 Resource Mobilization																			
a) Subscribed and Paid Up Capital		<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Comment/Recommendation:																
b) Amount of Savings per Member		<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Comment/Recommendation:																
c) Access to External Fund		<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Comment/Recommendation:																
d) CBU and Savings Properly Accounted		<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Comment/Recommendation:																
5.2 Account Management																			
a) Cash Register Updating		<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Comment/Recommendation:																
b) Audit of Cash Register		<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Comment/Recommendation:																
c) Updated Books of Accounts		<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Comment/Recommendation:																
5.3 Financial Viability																			
a) Earning of Business/ Service Operation		<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Comment/Recommendation:																
b) Liquidity Ratio (at least *: *)		<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Comment/Recommendation:																
c) Return on Equity (at least *%)		<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Comment/Recommendation:																

KRA Indicator/Sub-indicator	NA*	Evaluation																	Overall Result
		Evaluation Criteria	A. Baseline Data	B. Target Output					C. Milestone	D. Activity		E. Time Frame		F. Responsibility			G. Indicative Budget		
			Presence of Baseline Data	Consistent with Baseline Data	Quantifiable for Monitoring	Consistent with JICA-2 Performance Target	Achievable within 3 years	Consistent with Target Output	Logical Sequence of Activities	Appropriate to attain Milestone	Realistic Allocation of Time per Milestone /Activity	Synchronized with Other KRA / Milestone /Activities	Appropriate Unit/Person assigned by WMCA	Identified Support Institution is capable to accomplish the Milestone /Activity within allocated time frame	Identified Personnel is capable to accomplish the Milestone /Activity within allocated time frame	Appropriate Fund Source identified	Within JICA-2 standard cost		
d) Debt-Equity Ratio (at least *: *)	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
e) Return on Capital (at least * %)	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
f) Loan Repayment	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
6. Networking and Alliance Building																			
6.1 Participating in Local Government Institutions (LGI)	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
6.2 Workable Linkage with Other Organizations	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	
6.3 Access to Technical and Financial Support	<input type="checkbox"/>	Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Comment/Recommendation:																	

Attachment III-19
Role of SP Construction
Monitoring Committee



Government of the People's Republic of Bangladesh
Local Government Engineering Department



নির্মাণ কাজ পর্যবেক্ষণে
উপ-প্রকল্প
নির্মাণ পর্যবেক্ষণ
কমিটির ভূমিকা



Roles of Construction Monitoring Committee on
Construction Works Monitoring

দ্বিতীয় ক্ষুদ্রাকার পানি সম্পদ উন্নয়ন সেক্টর প্রকল্প
এলজিইডি ভবন, আগারগাঁও, ঢাকা

January 2003

Second Small Scale Water Resources Development Project

অবকাঠামো নির্মাণ কাজ পর্যবেক্ষণে উপ-প্রকল্প নির্মাণ পর্যবেক্ষণ কমিটির ভূমিকা

প্রকাশকঃ

দ্বিতীয় ক্ষুদ্রাকার পানি সম্পদ উন্নয়ন সেক্টর প্রকল্প
স্থানীয় সরকার প্রকৌশল অধিদপ্তর
এলজিইডি ভবন, আগারগাঁও
শেরে বাংলা নগর
ঢাকা ১২০৭।

ডিজাইন ও অলংকরণ

রবিন ডায়েস

প্রকাশঃ জানুয়ারী, ২০০৩

Role of Subproject Construction Observation Committee in Observation of Construction Works.

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প্রধান প্রকৌশলী


স্থানীয় সরকার প্রকৌশল অধিদপ্তর

মুখবন্ধ

ক্ষুদ্রাকার পানি সম্পদ উন্নয়ন সেক্টর প্রকল্পের আওতায় নির্মানাধীন অবকাঠামো সমূহ নির্মাণ সমাপ্তির পর একটি চুক্তিমূলে পাবসস-কে হস্তান্তর করা হয় যার ফলে পাবসস অবকাঠামোর ব্যবহারিক মালিকানা লাভ করে এবং পরবর্তীতে উপ-প্রকল্পের সম্পূর্ণ পরিচালনা ও রক্ষণাবেক্ষণের দায়িত্বভার গ্রহণ করে। যেহেতু অবকাঠামো নির্মাণ কাজের গুণগত মানের সাথে রক্ষণাবেক্ষণের চাহিদা পরোক্ষভাবে জড়িত, সেহেতু পাবসসকে নির্মাণ সময়ে অবকাঠামোর গুণগতমান পর্যবেক্ষণে সম্পৃক্ত করার সিদ্ধান্ত নেওয়া হয়েছে ফলে পাবসস অবকাঠামো বাস্তবায়নের গুণগতমান সম্পর্কে নিশ্চিত হতে পারবে।

এই লক্ষে দ্বিতীয় ক্ষুদ্রাকার পানি সম্পদ উন্নয়ন সেক্টর প্রকল্পের অধীনে প্রস্তুতকৃত উপ-প্রকল্পের নির্মাণ কাজের গুণগত মান স্থানীয়ভাবে পর্যবেক্ষণের জন্য পাবসস এবং ইউনিয়ন পরিষদ সমন্বয়ে উপ-প্রকল্প নির্মাণ কাজ পর্যবেক্ষণ কমিটি নামে ৭ (সাত) সদস্য বিশিষ্ট একটি কমিটি গঠিত হবে। এই কমিটির ৫ (পাঁচ) জন সদস্য পাবসস একটি সাধারণ সভার মাধ্যমে মনোনয়ন করবে এবং অবশিষ্ট ২ (দুই) জন সদস্য ইউনিয়ন পরিষদ সাধারণ সভার অনুমোদনক্রমে ঐ কমিটিতে কাজ করার জন্য মনোনয়ন করবে।

পর্যবেক্ষণ কমিটিকে কাজের সক্ষমতা ও দক্ষতাবৃদ্ধির জন্য এলজিইডি থেকে প্রশিক্ষণ দেওয়া হবে। এই প্রশিক্ষণে খাল, বাঁধ ও কাঠামো নির্মাণ কাজ পর্যবেক্ষণের উপর প্রাথমিক ধারণা দেওয়া হবে। কমিটির পর্যবেক্ষণের মাধ্যমে নির্মাণ কাজের গুণগতমান তুলনামূলকভাবে উন্নত হবে বলে আশা করা যায়। পাবসসের নিকট অবকাঠামো হস্তান্তরের পর কমিটির অন্তর্ভুক্ত পাবসস সদস্যদের অভিজ্ঞতা পরবর্তীতে পরিকল্পনা ও রক্ষণাবেক্ষণ কাজে সহায়ক ভূমিকা পালন করবে।


(মোঃ শহীদুল হাসান)

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পটভূমি

দ্বিতীয় ক্ষুদ্রাকার পানি সম্পদ উন্নয়ন সেক্টর প্রকল্পের অধীনে প্রস্তাবিত উপ-প্রকল্পের নির্মাণ কাজের গুণগতমান স্থানীয়ভাবে পর্যবেক্ষণের জন্য পাবসস এবং ইউনিয়ন পরিষদ সমন্বয়ে উপ-প্রকল্প নির্মাণ পর্যবেক্ষণ কমিটি নামে ৭ (সাত) সদস্য বিশিষ্ট একটি কমিটি গঠিত হবে। এই কমিটির জন্য ৫ (পাঁচ) জন সদস্য পাবসস একটি সাধারণ সভার মাধ্যমে মনোনয়ন করবে এবং অবশিষ্ট ২ (দুই) জন সদস্য ইউনিয়ন পরিষদ সাধারণ সভার অনুমোদন ক্রমে মনোনীত করবে। পর্যবেক্ষণ কমিটি দ্বিতীয় ক্ষুদ্রাকার পানি সম্পদ উন্নয়ন সেক্টর প্রকল্পের বাঁধ নির্মাণ ও পুনঃনির্মাণ, খাল খনন ও পুনঃখনন এবং বিভিন্ন পানি নিয়ন্ত্রণ কাঠামো বাস্তবায়ন কাজের গুণগত মান পর্যবেক্ষণে গুরুত্বপূর্ণ ভূমিকা রাখবে।

যেহেতু উপ-প্রকল্পের নির্মাণ ব্যয়ের একটি অংশ পাবসস বহন করে থাকে এবং প্রকল্প বাস্তবায়নের পর সমস্ত কাঠামোর ব্যবহারিক মালিকানা গ্রহণ ছাড়াও পরিচালনা ও রক্ষণাবেক্ষণের দায়িত্ব ও ব্যয়ভার বহন করে থাকে তাই কমিটির সদস্যদের অবকাঠামো নির্মাণ কাজের গুণগতমান পর্যবেক্ষণে বিশেষ ব্যবহারিক জ্ঞান থাকা দরকার। এই লক্ষ্যে এলজিইডি'র পক্ষ থেকে কমিটিকে প্রশিক্ষণের ব্যবস্থা করা হবে। প্রশিক্ষণে খাল, বাঁধ ও কাঠামো নির্মাণ কাজ পর্যবেক্ষণ-এর উপর নিম্নবর্ণিত বিষয়ে প্রাথমিক ধারণা দেয়া হবে যথাঃ

- ক) খাল খনন / পুনঃখনন
- খ) বাঁধ নির্মাণ/পুনঃনির্মাণ
- গ) কাঠামোর ভিত খনন
- ঘ) কংক্রিটের কাজ
- ঙ) হাইড্রোলিক কাঠামো সম্পর্কিত কাজ
 - গেইট
 - পানি সমতল গেজ
 - মই
 - গেইটের রাবার সীল
 - হয়েষ্ট ইত্যাদি
- চ) রক্ষাকারী বক নির্মাণ
- ছ) কাঠামোর পার্শ্ব মাটির কাজ

এ ছাড়া পাবসস এর পক্ষে (ক) নির্মাণ কাজ পর্যবেক্ষকগণের অনুমোদন দানের ছক, (খ) ইউনিয়ন পরিষদের পক্ষে নির্মাণ কাজ পর্যবেক্ষকগণের অনুমোদন দানের ছক ও (গ) নির্মাণ কাজ পর্যবেক্ষণের ছক আলোচনা করা হবে।

প্রশিক্ষণের প্রভাব

- ◆ কমিটির পর্যবেক্ষণের মাধ্যমে নির্মাণ কাজের গুণগত মান তুলনামূলকভাবে উন্নত হবে বলে আশা করা যায় যার ফলশ্রুতিতে রক্ষণাবেক্ষণ ব্যয় কমে যাবে।
- ◆ পাবসসের নিকট অবকাঠামো হস্তান্তরের পর কমিটির অন্তর্ভুক্ত পাবসস সদস্যদের অভিজ্ঞতা পরবর্তীতে পরিচালনা ও রক্ষণাবেক্ষণ কাজে সহায়ক ভূমিকা রাখবে।

খাল খনন / পুণঃখনন

১.০ ভূমিকা

সাধারণতঃ নিষ্কাশণ ও সেচ সুবিধা প্রদানের জন্য খাল খনন বা পুণঃখনন করা হয়ে থাকে। (চিত্র-১) ক্ষুদ্রাকার পানি সম্পদ প্রকল্পে সংশ্লিষ্ট এলাকায় যে সকল খাল ভরাট হয়ে স্বাভাবিক বা প্রয়োজনীয় প্রবাহ বাধাগ্রস্ত হয়ে প্রকল্প এলাকার নিষ্কাশন প্রতিবন্ধকতা সৃষ্টি অথবা সেচ সুবিধা প্রদান ব্যাহত করছে সে সকল খাল সমূহ পুণঃখনন অথবা প্রয়োজনে নতুন খাল খনন পূর্বক প্রকল্প এলাকায় নিষ্কাশণ ও সেচ সুবিধা প্রদান করা হয়ে থাকে। খালের গতিপথ ও আশপাশ থেকে সকল ঝোপ-ঝাড়, পাথর, ঘন গাছ গাছালি অপসারণ করতে হবে। পুরাতন খাল হলে এবং খালে পানি থাকলে উৎসমুখে আঁড়ি বাধ দিয়ে পানি অপসারণ করে ফেলতে হবে।

১.১ খনন কাজ পর্যবেক্ষণ

খননকৃত মাটি পার্শ্ব জমির উপর ছড়িয়ে দিতে হবে। যদি জমি না পাওয়া যায় তবে সম্ভব হলে বাঁধ/রাস্তার আকারে লেভেলিং ড্রেসিং করে রাখা যেতে পারে। পুরাতন খালের ঢালুতে কোন গর্ত বা রেইন কাট থাকলে তাহা ভরাটের প্রয়োজন নাই। তবে ভরাট প্রয়োজন হলে গর্তে ভরাটকৃত মাটি উত্তমরূপে দৃঢ়ীকরণ করে ড্রেসিং করে রাখতে হবে। অন্যথায় আলগা মাটি বর্ষার পানির সাথে ধুয়ে খালের তলায় ভরাটের সুযোগ সৃষ্টি হবে। কোন অবস্থাতেই খালের ঢালে খননকৃত মাটি রাখা যাবেনা।

চেইনেজ/সেকশন মার্ক সম্ভব হলে স্থায়ীভাবে সংরক্ষণের ব্যবস্থা থাকা প্রয়োজন যাতে খনন/পুণঃখননের পরেও রক্ষণাবেক্ষণ পরিকল্পনা প্রণয়নের কাজে তাহা ব্যবহারযোগ্য হয়।

বাঁধ নির্মাণ / পুনঃনির্মাণ

২.০ বাঁধ নির্মাণ পদ্ধতি

বাঁধ নির্মাণে নিম্নলিখিত বিষয় সমূহ পর্যবেক্ষণ প্রয়োজন।

- সেট ব্যাক দূরত্ব
- গাছ-পালা / ঘাস তোলা
- স্তরে স্তরে মাটি ভরাট
- মাটি দৃঢ়ীকরণ

- ঙ) বাঁধের পার্শ্ব ঢাল ও প্রশস্ততা
চ) ঢালে ঘাস লাগানো

২.১ সেট ব্যাক দূরত্ব

বাঁধের পাদদেশ থেকে নদীর তীর পর্যন্ত দূরত্বকে সেট ব্যাক দূরত্ব বলে। এই দূরত্ব পর্যাপ্ত না হলে বাঁধের স্থায়ীত্ব কমে যায়। বন্যা বাঁধের লেআউট অতি সতর্কতার সাথে দেয়া প্রয়োজন। বাঁধের লেআউট নদীর তীর থেকে দূরে রাখতে হবে যেন নদী ভাঙ্গনে বাঁধ সহজেই ক্ষতিগ্রস্ত না হয়। নদীতে ভাঙ্গন থাকলে বাঁধ নদী তীর থেকে কমপক্ষে দশ বছর ভাঙ্গনের সমান দূরত্ব বরাবর রাখতে হবে। অর্থাৎ প্রতি বছর ২০ ফুট ভাঙ্গলে বাঁধের লেআউট ২০০ ফুট দূরে থাকবে। যে সব যায়গায় নদী ভাঙ্গন নেই সেখানে বাঁধের পাদদেশ থেকে নদীর তীর কমপক্ষে ২০ ফুট দূরে থাকবে।

২.২ গাছ-পালা / ঘাস

বাঁধের তলার মূল মাটির সাথে ভরাটকৃত মাটির জোড়া লাগাবার জন্য ঝোপ ঝাড় পরিষ্কার অত্যন্ত গুরুত্বপূর্ণ। বাঁধের তলায় ভূমির উপর সকল আগাছা, গাছ, গাছের গুড়ি ইত্যাদি অপসারণ করে ১৫ সেগমিঃ হতে ৩০ সেগমিঃ গভীর করে মাটি চাষ করা বা আলগা করা প্রয়োজন। মাটি ভরাটের পূর্বে তলার মাটি দৃষ্টিকরণ করে নিতে হবে। পুরাতন বাঁধের ক্ষেত্রে পুনঃনির্মাণের সময় উভয় দিকের ঢালে সিঁড়ির মত ধাপ কেটে বেষ্টিং করা বাঞ্ছনীয় যাতে করে পুরাতন মাটির সাথে নতুন মাটি ঠিক মত জোড়া লাগে।

২.৩ মাটি ভরাট

১৫০ মিঃমিঃ (৬") হইতে ২০০ মিঃমিঃ (৮") পুরু স্তরে বাঁধের পুরা তলদেশ জুড়ে মাটি ভরাট করতে হবে। দূরমুজ ব্যবহার করে নির্ধারিত দৃষ্টিকরণ অর্জন করার পর ২য় স্তর এবং বাঁধ শেষ না হওয়া পর্যন্ত একই পদ্ধতিতে অগ্রসর হতে হবে।

২.৪ মাটি দৃষ্টিকরণ

দৃষ্টিকরণের ফলে মাটির ভিতরকার অতিরিক্ত পানি বেরিয়ে যায়, শুন্যতা কমে এবং ঘনত্ব বেড়ে যায়। দূরমুজ বা কংক্রিট রোলার দ্বারা হস্তসাধিত দৃষ্টিকরণ করা হয়। সাধারণত ৭ কেজি ওজনের দূরমুজ দিয়ে ভরাটকৃত/বিস্তৃত মাটির স্তর (১৫ সেঃমিঃ) কোদাল/মুগুর দ্বারা মাটির ঢাকা ভেঙ্গে সমভাবে বিছিয়ে প্রয়োজন মত পানি ছিটিয়ে দূরমুজ/রোলার টেনে দৃষ্টিকরণ করতে হবে।

২.৫ পার্শ্বঢাল ও বাঁধের প্রশস্ততা

বাঁধের চূড়ান্ত উচ্চতায় দূরমুজ করা সহ মাটি ভরাট সম্পন্ন হওয়ার পর ডিজাইন আকৃতিতে বাঁধের শীর্ষ ও ঢাল ড্রেসিং করা হয়। বাঁধের সেকশন নকশা অনুযায়ী হচ্ছে কি না তা পর্যবেক্ষণ করা প্রয়োজন। নকসাতে যে প্রশস্ততা, উচ্চতা ও পার্শ্বঢাল দেয়া আছে এলসিএস দল তা বাস্তবায়ন করছে কি না তা দেখতে হবে।

২.৬ ঘাস লাগানো (টার্ফিং)

বাঁধের ঢালে ক্ষয় রোধের জন্য ঘাস লাগানো হয়। সাধারণত বাতাস, বৃষ্টি, ঢেউ ইত্যাদি কারণে বাঁধের ঢালে ক্ষয় হয়। সব ধরনের ঘাস টার্ফিং কাজের জন্য উপযোগী নয়। সাধারণত দুর্বা ঘাস টার্ফিং এর জন্য উপযোগী এবং খুবই ফলপ্রসূ। ঘাসের চাপড়া লাগিয়ে কোন ফাঁক রাখা চলবে না। লাগানোর আগে ঢালের মাটি কিছুটা চেঁচে ফেলতে হবে। নতুন ঘাস জন্মান এবং ৪ ইঞ্চি বর্ধিত না হওয়া পর্যন্ত পানি দেওয়া অব্যাহত রাখতে হবে। এই কাজ এলসিএস বাধ্যতামূলকভাবে করবে।

৩.০ কাঠামোর ভিত খনন

৩.১ ভিত খনন

পানি নিয়ন্ত্রণ কাঠামোর ভিত সাধারণতঃ মাটির অনেক গভীরে নির্মিত হয়, বিশেষ করে কাঠামোর দুদিকে কাট অফ ওয়াল ফ্লোর থেকেও ২ হতে ৪ মিঃ গভীরে নির্মাণ প্রয়োজন হয়। মাটির ধরণ অনুযায়ী খননের পার্শ্ব ঢাল নির্ধারণ করা উচিত।

- কাদা মাটির জন্য ঢাল ১ঃ১
- বালু মাটির ক্ষেত্রে ঢাল ১ঃ১.৫
- আলুগা বালু মাটির ক্ষেত্রে ঢাল ১ঃ২

খননকৃত মাটি পিটের ধারে রাখা ঠিক নয়। মাটি অবশ্যই পিটের ধার হতে অন্ততঃ খনন গভীরতার দেড়গুণ দূরত্বে রাখা উচিত অন্যথায় উপরের মাটির ভারে পার্শ্ব ঢালে ধ্বস হতে পারে। (চিত্র-২)

৩.২ কাট অফ ওয়াল

কাট অফ ওয়াল হাইড্রোলিক অবকাঠামোর একটি গুরুত্বপূর্ণ অংশ। সুষ্ঠুভাবে কাট অফ ওয়াল বাস্তবায়নের উপর কাঠামোর স্থায়ীত্ব অনেকাংশে নির্ভরশীল। কাট অফ ওয়াল কংক্রিট অথবা স্টিলের হতে পারে। আরসিসি কাট অফ ওয়াল ১৫সেঃমিঃ থেকে ৩০ সেঃমিঃ চওড়া হয়ে থাকে। কাট অফ ওয়াল প্রয়োজনীয় গভীরতা পর্যন্ত করতে হবে এবং ঢালাইয়ের সময় শুকনো অবস্থায় থাকতে হবে। রড এর খাঁচা পরিখাতে নামিয়ে ঢালাই করা হয়। তবে কোন অবস্থায় পানির মধ্যে কংক্রিট ঢালা যাবে না। প্রয়োজন হলে পাম্প ব্যবহার করতে হবে। শুষ্ক অবস্থা না হলে কংক্রিটের উপাদান আলাদা হবে এবং ঢালাই শক্ত হবে না। (চিত্র-৩)

৪.০ কংক্রিটের কাজ

৪.১ কংক্রিটের উপাদান সমূহ:

ক) খোয়া : নকশার স্পেসিফিকেশন অনুযায়ী ইট অথবা পাথর থেকে খোয়া করতে হবে যার আকার হবে ২০ মিঃমিঃ থেকে ৮ মিঃমিঃ (আনুমানিক $\frac{3}{8}$ থেকে $\frac{3}{4}$)। খোয়া পিকেট ঝামা থেকেও তৈরী করা যেতে পারে। কাঠামোতে ব্যবহারকারী ইট প্রথম শ্রেণীর হতে হবে। দুটো ইটের মধ্যে বাড়ি দিলে পরিষ্কার শব্দ হবে এবং সহজে ভাঙবে না। ফিল্টারে ব্যবহারের জন্য ইট অবশ্যই প্রথম শ্রেণীর হতে হবে।

- খ) বালু : কংক্রিটের জন্য সিলেট বালু (মোটা বালু) ব্যবহার করতে হবে।
- গ) সিমেন্ট : সিমেন্ট স্টোর করার জন্য সিমেন্ট স্টোরের চাল ওয়াটার প্রুফ হতে হবে ও নিছিদ বেড়া দিতে হবে। মাটি থেকে প্ল্যাটফর্ম অন্তত ১ ফুট উঁচুতে রাখতে হবে। কাঠের প্ল্যাটফর্ম তৈরী করে সিমেন্ট স্টোর করা উচিত। সিমেন্ট উপরের দিকে ৮ বস্তার বেশী স্টোর করতে পারবেনা।
- ঘ) পানি : পরিষ্কার ও লবনমুক্ত হতে হবে।

৪.২ কংক্রিট তৈরীর পূর্বে ঢালাই এর জায়গা প্রস্তুত করার পদ্ধতি

- ক) ঢিলা মাটি, কাদা বা যে কোন আগাছা ভালভাবে পরিষ্কার করতে হবে।
- খ) ঢালাই এর স্থানের মাটি ভালভাবে দুরমুজ করে দৃঢ় করতে হবে এবং ইট বিছিয়ে বা ৩ ইঞ্চি লিন কংক্রিট ঢালাই করে নিতে হবে।

৪.৩ কংক্রিটের জন্য সাটারিং

- ক) সাধারণতঃ কাঠ এবং স্টীল সাটারিং হিসাবে ব্যবহার করা যায়। স্টীল সাটার পানি চোষে না, বাঁকা হয় না, সহজেই প্রকৃত আকারে তৈরী এবং খোলা যায়। যেহেতু স্টীল সাটার বহুবার ব্যবহারযোগ্য তাই এটি কম ব্যয় বহুল। কাঠ বা স্টীল যাহাই হোক সাটারিং অবশ্যই কংক্রিটের ভার, শ্রমিক ও যন্ত্রপাতির ভার বহণ করার মতো ক্ষমতা রাখবে।
- খ) সাটারিং এর জয়েন্টগুলো অবশ্যই ভালভাবে বন্ধ করতে হবে যাতে ঢালাইয়ের সময় কংক্রিটের পানি বের হতে না পারে। সাটারিং-এ নীচ ও পাশ থেকে যথেষ্ট পরিমাণ ঠেলা লাগাতে হবে যাতে করে ঢালাই এর সময় এগুলো বাঁকতে বা পাশে হেলে পড়তে না পারে। ঢালাই এর পূর্বে সাটারকে ঠিক মতো লেভেল ও পরিষ্কার করতে হবে।
- গ) রড মরিচা মুক্ত হতে হবে। মরিচা থাকলে ভালভাবে পরিষ্কার করে নিতে হবে। না হলে কংক্রিটের সাথে বন্ধন (bond) ভাল হবে না।

৪.৪ কংক্রিট তৈরীঃ

কংক্রিটের উপাদানসমূহ মিকচার মেশিনের মাধ্যমে পানি দিয়ে কমপক্ষে ২.৫ মিনিট মিশাতে হবে যেন কংক্রিট এর মধ্যে একটু আঠালো ভাব আসে। সিমেন্ট যেন বালু ও খোয়ার সঙ্গে মিশে সে জন্য পরিমিত পানি ব্যবহার করতে হবে। কংক্রিট যেন সাটারের প্রতিটি স্থানে/কোনে পৌঁছাতে পারে সেরকম নরম করে তৈরী করতে হবে। আবার বেশী পানি ব্যবহারে কংক্রিট যেন পাতলা না হয়ে যায় সে দিকে দৃষ্টি রাখতে হবে কেননা পাতলা কংক্রিটের শক্তি সব সময়ই কম। কংক্রিটের মিশ্রনের অনুপাতঃ ক) পাইলের কাজে ১ঃ১.৫ঃ৩, খ) অন্যান্য আরসিসি কাজে ১ঃ২ঃ৪, গ) ফ্লোরের নীচে লিন কংক্রিট ১ঃ৩ঃ৬।

৪.৪.১ কংক্রিট ঢালাই করা

- কংক্রিট ঢালাইয়ের সময় ৩০ সে:মি: (১২ ইঞ্চি) স্তরে ফেলতে হবে।

- এক মিটারের বেশী উচ্চ স্থান থেকে ছুড়ে মেরে ঢালাই করা যাবে না। কংক্রিট ছুড়ে মারলে খোয়া ও মর্টার আলাদা হয়ে কংক্রিট এর মান নষ্ট হয়ে যায়।
- ঢালু স্থানে ঢালাই করতে হলে প্রথমে নীচু দিক থেকে শুরু করতে হবে এবং স্তরে স্তরে ঢালাই করে উপরে আসতে হবে। ঢালু স্থানের উপরের দিক থেকে ঢালাই করলে খোয়া ও মর্টার (পরিমান মত সিমেন্ট, বালু ও পানির মিশ্রণ) আলাদা হয়ে যাবে।

পূর্বে ঢালাই করার স্থানে পুনরায় ঢালাই করতে গেলে নিম্নলিখিত পদ্ধতি অবলম্বন করতে হবেঃ

- (ক) কংক্রিটের উপরের অংশ ভালভাবে পরিষ্কার করতে হবে যেন সিমেন্টের সর, ঢিলা ও খোয়া না থাকে।
- (খ) পূর্বের কংক্রিট এর উপরের অংশ পানি দিয়ে ভিজাতে হবে এবং বাতাসে সেই পানি শুকানো পর্যন্ত অপেক্ষা করতে হবে।
- (গ) সিমেন্ট গুলিয়ে পূর্বের কংক্রিটের উপরে পাতলা করে ছড়াতে হবে।
- (ঘ) এই মর্টার দেয়ার পর পরই ঢালাই শুরু করতে হবে।

৪.৪.২ ঢালাইয়ের পর কংক্রিট আদ্র রাখা

ঢালাই এর পর প্রথম ৭ দিন যে কোন উপায়ে আদ্র পরিবেশে রাখতে হবে। উপায়গুলি হতে পারে-

- (ক) কংক্রিটের উপরে কমপক্ষে ২৫ মি:মি: পানি ধরে রাখা।
- (খ) পানিতে ভিজানো চটের ব্যাগ দিয়ে ঢেকে রাখা।
- (গ) ঘন ঘন পানি ছিটিয়ে কংক্রিটকে সব সময় সিক্ত অবস্থায় রাখা।
- (ঘ) কলামের ক্ষেত্রে চট দিয়ে জড়িয়ে পানি দিয়ে চট ভেজা রাখা। চট যেন সর্বক্ষণ ভিজা থাকে সেটা নিশ্চিত করতে হবে।

৫.০ কাঠামো সম্পর্কে জরুরী তথ্য :

৫.১ পানি সমতল গেজ

পানি নিয়ন্ত্রক কাঠামোর গেইট খোলা অথবা বন্ধ অবস্থায় প্রকল্প ও নদী উভয় পার্শ্বে পানি সমতল নির্ধারণের জন্য সিমেন্ট প্লাস্টার দিয়ে গেজ সমতল বাংলায় লিখতে হবে। গেজ ছাড়া উপ-প্রকল্পে পানির সমতল নিরূপণ করা সম্ভব নয়। গেজ ওয়াটার প্রুফ (এপোক্সী রং) রং করা উচিত যাতে সহজে দৃষ্টি গোচর হয় এবং নষ্ট না হয়। প্রায়ই লক্ষ্য করা যায় যে পানি নিয়ন্ত্রণ কাঠামোর এক পাশে মাত্র রং করে গেজ করা হয়। এই রং সহজে নষ্ট হয়ে যায় এবং পানি সমতল জানা সম্ভব হয়না। (চিত্র-৪)

৫.২ মই

কাঠামোর বিভিন্ন অংশ পরীক্ষা করার জন্য কাঠামোর ফ্লোরে নামার প্রয়োজন হয়। বিশেষ করে গেটের বিভিন্ন অংশ মাঝে মাঝে পরীক্ষা করতে হয় যাতে গেট পরিচালনার সময় হঠাৎ করে সমস্যার সৃষ্টি না করে। মই উজান ও ভাটিতে লাগাতে হয়। অনেক সময় দেখা যায় যে স্লুইসের ভাটিতে ফ্ল্যাপ গেটের খুব নিকটে মই লাগানো হয়েছে যার ফলে পানি নিষ্কাশণ অথবা পানি প্রবেশ করানোর সময় ফ্ল্যাপ গেট মইয়ে লেগে উত্তলনে বাঁধা প্রাপ্ত হয়। খেয়াল রাখতে হবে যেন মই হেড ওয়াল থেকে কমপক্ষে ২.৫ মিঃ দূরে লাগানো হয় যাতে করে গেট পরিচালনায় ব্যাঘাত সৃষ্টি না হয়। (চিত্র-৫)

৫.৩ রাবার সিল

যেহেতু গেটের উদ্দেশ্য হ'ল বন্যা নিয়ন্ত্রণ ও পানি সংরক্ষণ তাই যদি গেট বন্ধ অবস্থায় পানি বের হয় তাহলে উপ-প্রকল্পের উদ্দেশ্যে ব্যাহত হবে। পানি বের হওয়া বন্ধ করার জন্য গেটে রাবার সীল লাগানো হয়। রাবার সীল গেটের নীচে, পার্শ্বে ও উপরে লাগাতে হবে।

রাবার সিল বন্যা নিয়ন্ত্রণের জন্য প্রকল্পের দিকে ফ্ল্যাপ গেটের ভেতর পার্শ্বে লাগাতে হবে। পানি সংরক্ষণের জন্য ভার্টিক্যাল গেটে রাবার সিল বাহিরের দিকে অর্থাৎ নদী-পার্শ্বে লাগাতে হয়।

৬.০ কাঠামো রক্ষাকারী ব্লক

কাঠামোর ফ্লোরের শেষ প্রান্তে উজান ও ভাটিতে ব্লক দিতে হয় যাতে করে পানি প্রবাহের কারণে মাটি ক্ষয়প্রাপ্ত না হতে পারে। ব্লক সাধারণত দুই অংশে বসানো হয়। প্রথম অংশে ব্লকের নীচে ফিল্টার দিতে হবে। সাধারণত ৬ ইঞ্চি (১৫ সেঃমিঃ) মোটা বালুর উপরে ৬ ইঞ্চি (১৫ সেঃমিঃ) খোয়া বিছিয়ে ফিল্টার তৈরী করা হয়। এই ব্লক তৈরী করার সময় নিম্নলিখিত পদ্ধতি অনুসরণ করতে হবে।

- ক) ইট অবশ্যই ১ নম্বর হতে হবে। এগুলি পরিষ্কার পানিতে কমপক্ষে ৮ ঘণ্টা ভিজাতে হবে।
- খ) ইট বসানোর সময় মার্কা উপরের দিকে থাকতে হবে।
- গ) বন্ড তৈরীর প্রয়োজন ছাড়া ভাঙ্গা ইট ব্যবহার করা যাবে না।
- ঘ) সিমেন্ট মর্টার ১ঃ৪ অনুপাতে হবে ও আধা ইঞ্চি পুরু হবে।
- ঙ) মর্টার সবসময় তৈরীর ৩০ মিনিটের মধ্যে ব্যবহার করতে হবে। তৈরীর ৩০ মিনিটের পর কাজে অব্যবহৃত মর্টার থাকলে তা বাতিল করতে হবে।

ব্লক তৈরী শেষ হওয়ার পর পানি ভিজানো চট দিয়ে ব্লকগুলো কমপক্ষে ২ সপ্তাহ আদ্র রাখতে হবে। তারপর তৈরী ব্লক নির্ধারিত স্থানে বসাতে হবে। কোন ক্রমেই ব্লক সরাসরি কাঠামোর ঢালে তৈরী করা যাবে না। (চিত্র-৬ ও ৭)

৭.০ গেট নির্মাণের জন্য সাধারণ তথ্য

এলজিইডিতে সাধারণতঃ ২ প্রকার গেট ব্যবহার করা হয়।

- ভাটিক্যাল গেট যা হাত দিয়ে হুইল ঘুরিয়ে উঠানো নামানো হয়।
- ফ্ল্যাপ গেট যা স্বয়ংক্রিয়ভাবে উঠা নামা করে।

ক) ভাটিক্যাল গেটের ক্ষেত্রে পার্শ্ব গ্রন্থ ১৫০×১০০ মিঃমিঃ হতে হবে।

খ) গেট বন্ধ অবস্থায় পানি নিঃসরণ বন্ধ করার জন্য রাবার সীল গেটের নীচে, পার্শ্বে ও উপরে লাগাতে হবে। ভাটিক্যাল গেটের নীচের দিকে “ইউ টাইপ” এবং পার্শ্বে “পি টাইপ” সীল ব্যবহার করতে হবে। রাবার সীল বন্যা নিয়ন্ত্রণের জন্য উপ-প্রকল্প পার্শ্বে এবং পানি সংরক্ষণের জন্য নদী পার্শ্বে দিতে হবে। ফ্ল্যাপ গেটে শুধু মাত্র “পি টাইপ” রাবার সীল লাগাতে হবে।

গ) গেট শীট ৮মিঃমিঃ $\left(\frac{3}{4}\right)$ পুরু হতে হবে।

ঘ) ফ্ল্যাপ গেটের বুলানোর ব্যবস্থা দ্বয় যেন একই সমতলে থাকে। অন্যথায় গেট অপারেশন ঠিক মত হবে না।

ঙ) ফ্ল্যাপ গেটের ফ্রেম এবং ভাটিক্যাল গেটের গ্রন্থের এ্যাংগেল ও নীচের প্লেট কংক্রিট ঢালাইয়ের আগেই বসাতে হবে।

চ) গিয়ার বক্সের কাঠামো অপারেটিং প্ল্যাটফর্মের স্ল্যাবের সাথে নাট ও বোল্টের সাহায্যে ৪৫০×৪৫০×২৫ মিঃমিঃ (১৮"×১৮" আকার ও ১" পুরু) বেজ প্লেট দিয়ে আটকাতে হবে। বেজ প্লেটের ৪ টা হোলের মধ্যে ৩০০ মিঃমিঃ (১২") লম্বা ও ১৯ মিঃমিঃ ϕ (পৌনে এক ইঞ্চি) নাট ও বোল্ট দিতে হবে। অপারেটিং প্ল্যাটফর্মের কংক্রিট ঢালাইয়ের পূর্বে বোল্ট ঢালাইয়ের মধ্যে দিতে হবে যাতে কংক্রিটের সাথে একিভূত হতে পারে। বেজ প্লেটের বোল্ট কংক্রিটের মধ্যে ঠিক মত লাগানো না হলে গেট পরিচালনার সময় নড়ে যেতে পারে।

ছ) ভাটিক্যাল গেট ফ্লোর স্ল্যাবের সাথে সম্পূর্ণভাবে মিশে যাবে এবং কোন ফাঁক থাকবে না যাতে পানি সংরক্ষণের সময় পানি নিঃসরণ না হয়।

জ) লাগানোর পর গেট উঠা নামা করিয়ে পরীক্ষা করে দেখতে হবে তা সহজে উঠানামা করে কি না।

৮.০ কাঠামোর পার্শ্বে মাটির কাজ

রেগুলেটরের এপ্রোচ-এর ২টি অংশ। শুধুমাত্র অবকাঠামো সংলগ্ন অংশ ব্যাক ফিল এবং বেড়ী বাঁধ পর্যন্ত বাকী অংশ এপ্রোচ বাঁধ হিসাবে চিহ্নিত করা যায়। এপ্রোচ বাঁধ এর নির্মাণ কাজ সাধারণ বেড়ী বাঁধ নির্মাণ পদ্ধতিতেই সম্পন্ন করতে হবে।

রেগুলেটর নির্মাণে ব্যাক ফিলিং একটি গুরুত্বপূর্ণ কাজ। রেগুলেটর এবং লুজ এপ্রোন ব্লক পিচিং এর পার্শ্ব মাটি ভরাট করানোর পূর্বে তলা অবশ্যই পানি মুক্ত থাকতে হবে। স্তরে স্তরে মাটি ভরাট এবং দৃঢ়ীকরণ নিশ্চিত করতে হবে।

৯.০ উপ-প্রকল্প নির্মাণ কাজ পর্যবেক্ষকগণের তালিকা

দ্বিতীয় ক্ষুদ্রাকার পানি সম্পদ উন্নয়ন সেক্টর প্রকল্পের অধীনে প্রস্তাবিত উপ-প্রকল্পের নির্মাণ কাজের গুণগতমান স্থানীয়ভাবে পর্যবেক্ষণের জন্য “উপ-প্রকল্প নির্মাণ পর্যবেক্ষণ কমিটি” নামে ৭ (সাত) সদস্য বিশিষ্ট একটি কমিটি গঠিত হবে। এই কমিটির জন্য ৫ জন সদস্য পাবসস একটি সাধারণ সভার মাধ্যমে মনোনয়ন করবে এবং অবশিষ্ট ২ জন সদস্য ইউনিয়ন পরিষদ সাধারণ সভার অনুমোদন ক্রমে ঐ কমিটিতে কাজ করার জন্য মনোনীত করবে। পাবসস ও ইউনিয়ন পরিষদ তাদের মনোনীত সদস্যদের তালিকা প্রকল্প কর্তৃক সরবরাহকৃত হুকে পাঠাবেন। উল্লেখ্য যে পাবসস ও ইউনিয়ন পরিষদ একজন করে মহিলা সদস্য এই কমিটিতে অন্তর্ভুক্ত করতে পারবেন। কমিটিকে পর্যবেক্ষণ দায়িত্বে সহায়তা করার জন্য উপজেলা প্রকৌশলী পর্যবেক্ষকগণের তালিকা অনুমোদন দান পূর্বক অনুলিপি নির্বাহী প্রকৌশলী, সংশ্লিষ্ট ঠিকাদার, পাবসস ও ইউনিয়ন পরিষদ বরাবর পাঠাবেন। সংশ্লিষ্ট উপজেলা প্রকৌশলী এই মর্মে আদেশ প্রদান করবেন যেন নির্মাণ স্থানে পর্যবেক্ষকগণের প্রবেশ নিশ্চিত হয়। সদস্য মনোনয়নের পৃথক দুইটি ছক ক ও খ, পর্যবেক্ষণ ছক গ এবং এই কমিটির কার্যপরিধি সংযুক্ত করা হলো।

পর্যবেক্ষক দলের কোন সদস্য/সদস্যগণ অভিযোগ করতে হ'লে নির্ধারিত ছক (ছক-গ) ব্যবহার করে নির্মাণ স্থানে এলজিইডির প্রতিনিধিকে জানাবেন। উপজেলা প্রকৌশলীকে সরাসরি জানাবেন। উপজেলা প্রকৌশলী অভিযোগের গুরুত্ব বিবেচনা করে স্থান পরিদর্শন পূর্বক ২৪ ঘন্টা থেকে ৭২ ঘন্টার মধ্যে ব্যবস্থা গ্রহণ করবেন এবং তার অনুলিপি নির্বাহী প্রকৌশলী, নির্মাণ স্থানে এলজিইডির প্রতিনিধিকে জানাবেন। যদি কোন প্রতিনিধি না থাকে তবে ঠিকাদার ও উপ-প্রকল্প নির্মাণ পর্যবেক্ষণ কমিটিকে পাঠাবেন।

যদি ৩ (তিন) দিনের মধ্যে উপজেলা প্রকৌশলী কোন ব্যবস্থা না নেন তবে অভিযোগ পত্রের অনুলিপি পরবর্তী ব্যবস্থা গ্রহণের জন্য এই কমিটি নির্বাহী প্রকৌশলী বরাবর পাঠাতে পারবেন। তবে কোন অবস্থাতেই পর্যবেক্ষক কমিটি ঠিকাদারকে কাজ বন্ধ করার নির্দেশ দিতে পারবে না।

১০.০ পাবসসের পর্যবেক্ষক নির্বাচনের নীতিমালা

পর্যবেক্ষক নির্বাচন করার সময় নিম্নলিখিত বিষয়ে বিবেচনা করতে হবে।

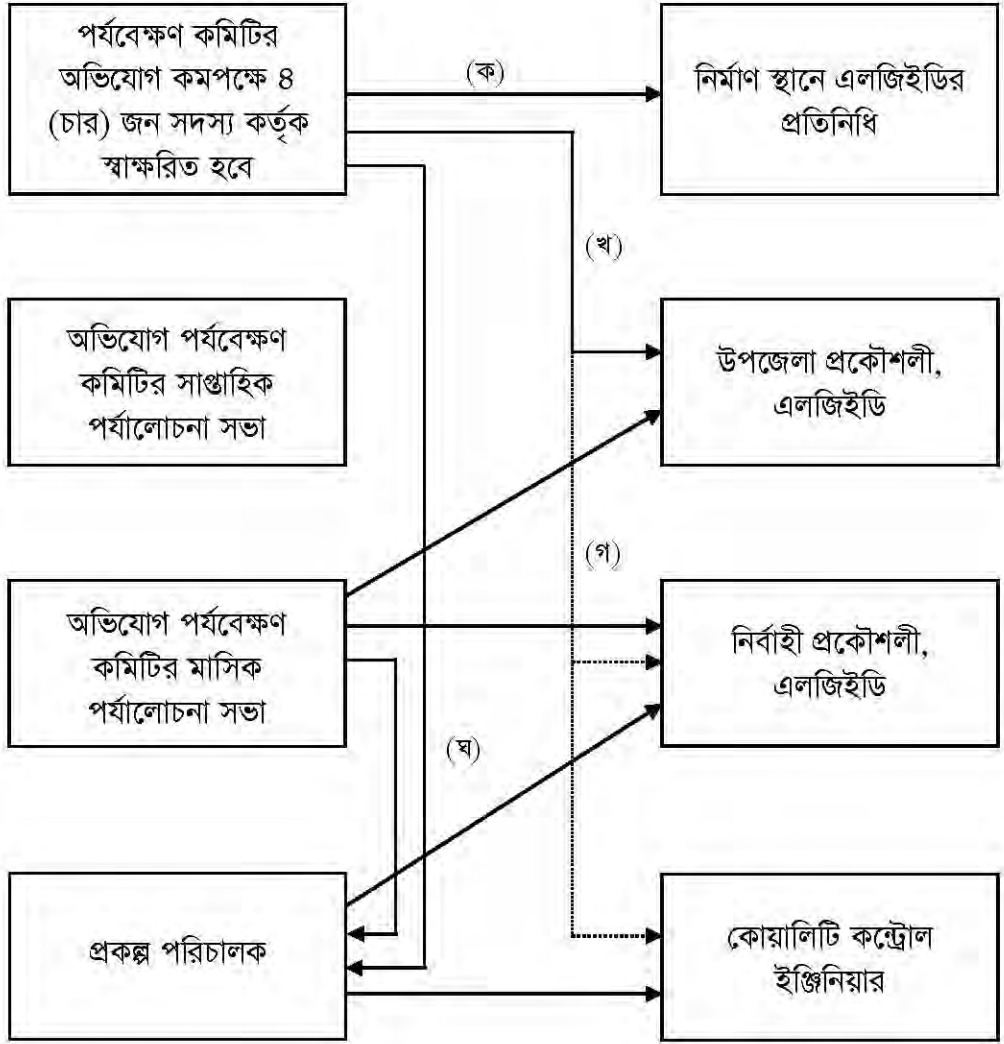
- ক) পর্যবেক্ষক উপকারভোগীদের মধ্যে থেকে নিতে হবে।
- খ) পর্যবেক্ষকের তুলনামূলকভাবে বেশী শিক্ষাগত যোগ্যতা থাকতে হবে।
- গ) পাবসসের বিভিন্ন কাজে সম্পৃক্ত থাকতে হবে।
- ঘ) অর্থ সংস্থানের কাজেও অগ্রণী ভূমিকা থাকলে ভাল হয়।
- ঙ) অবশ্যই পর্যবেক্ষক কাজে অংশগ্রহণের ব্যাপারে আগ্রহ থাকতে হবে।
- চ) যে কোন নির্মাণ কাজে অভিজ্ঞতা থাকলে তা অতিরিক্ত যোগ্যতা বলে বিবেচিত হবে।

১০.১ অভিযোগ করার পদ্ধতি

পর্যবেক্ষক দলের সদস্যগণ পর্যবেক্ষণ করে নির্মাণ পদ্ধতি সম্পর্কে যে কোন অভিযোগে নির্ধারিত ছক (ছক-গ) ব্যবহার করে করতে পারবেন। যে কোন অভিযোগ করতে হলে অন্ততঃপক্ষে চার জন সদস্যের স্বাক্ষর থাকতে হবে। পর্যবেক্ষক দল অভিযোগ নির্মাণ স্থানে এলজিইডির প্রতিনিধিকে জানাবেন তবে কোন প্রতিনিধি না থাকলে উপজেলা প্রকৌশলীকে সরাসরি জানাবেন। উপজেলা প্রকৌশলী অভিযোগের গুরুত্ব বিবেচনা করে স্থান পরিদর্শন পূর্বক ১ থেকে ৩ দিনের মধ্যে ব্যবস্থা গ্রহণ করবেন এবং তার অনুলিপি নির্বাহী প্রকৌশলী, ঠিকাদার ও উপ-প্রকল্প নির্মাণ পর্যবেক্ষন কমিটিকে পাঠাবেন। যদি ৩ (তিন) দিনের মধ্যে উপজেলা প্রকৌশলী কোন ব্যবস্থা না নেন তবে অভিযোগ পত্রের অনুলিপি পরবর্তী ব্যবস্থা গ্রহণের জন্য নির্বাহী প্রকৌশলী বরাবর পাঠাবেন। কোয়ালিটি কন্ট্রোল ইঞ্জিনিয়ারকেও তার অনুলিপি দিতে পারবেন। অভিযোগ দেওয়ার পর পরবর্তী ৭ (সাত) দিনের মধ্যে কোন ব্যবস্থা না নিলে প্রকল্প পরিচালককে সরাসরি অভিযোগ পাঠাতে পারবেন।

পর্যবেক্ষণ কমিটি নিয়মিত সাপ্তাহিক সভাতে নির্মাণ কাজের অবস্থা, অগ্রগতি ও সমস্যা নিয়ে আলোচনা করবেন। মাসিক আলোচনা সভার সিদ্ধান্ত প্রকল্প পরিচালক, নির্বাহী প্রকৌশলী, উপজেলা প্রকৌশলী ও কোয়ালিটি কন্ট্রোল ইঞ্জিনিয়ারকে পাঠাবেন।

ঠিকাদার নির্মাণ স্থানে যে সাইট অর্ডার বই রাখেন পর্যবেক্ষক দলের প্রতিনিধি প্রতি পরিদর্শনে সেখানে মন্তব্য লিখবেন। পর্যবেক্ষক দল নিজেদের সুবিধামত রোস্টার করে পরিদর্শনের ব্যবস্থা করবেন। তবে কোন ক্রমেই পর্যবেক্ষক দল ঠিকাদারকে কাজ বন্ধ করতে বাধ্য করতে পারবেন না। অভিযোগ দেওয়ার পদ্ধতির ফ্লোচার্ট নীচে দেওয়া হল।



অভিযোগ দেওয়ার পদ্ধতি

নোটঃ এলজিইডির প্রতিনিধি নির্মাণ স্থানে না থাকলে অভিযোগ সরাসরি উপজেলা প্রকৌশলীকে দিতে হবে। উপজেলা প্রকৌশলী ৩ (তিন) দিনের মধ্যে কোন ব্যবস্থা গ্রহণ না করলে অভিযোগ সরাসরি নির্বাহী প্রকৌশলীকে দিতে পারবেন। নির্বাহী প্রকৌশলীকে অভিযোগ দেওয়ার পর পরবর্তী ৭ (সাত) দিনের মধ্যে কোন ব্যবস্থা না নিলে তা প্রকল্প পরিচালককে পাঠানো যাবে।

(ছক-ক)

দ্বিতীয় ক্ষুদ্রাকার পানি সম্পদ উন্নয়ন সেক্টর প্রকল্প
..... উপ-প্রকল্প

পাবসস এর পক্ষে নির্মাণ কাজ পর্যবেক্ষকগণের অনুমোদন দানের ছক

সংখ্যা	নাম ও পিতার নাম	ঠিকানা	স্বাক্ষর
১.			
২.			
৩.			
৪.			
৫.			

নির্বাহী কমিটির কার্যকরী সভার সিদ্ধান্তের নম্বর..... তারিখ.....

স্বাক্ষর-

সভাপতি

সম্মুখদক

কোষাধ্যক্ষ

(ছক-২)

দ্বিতীয় ক্ষুদ্রাকার পানি সম্পদ উন্নয়ন সেক্টর প্রকল্প
..... উপ-প্রকল্প

ইউনিয়ন পরিষদ এর পক্ষে নির্মাণ কাজ পর্যবেক্ষকগণের অনুমোদন দানের ছক

সংখ্যা	নাম ও পিতার নাম	ঠিকানা	স্বাক্ষর
১.			
২.			

সাধারণ সভার সিদ্ধান্তের নম্বর..... তারিখ.....

স্বাক্ষর-

চেয়ারম্যান, ইউনিয়ন পরিষদ

(ছক-গ)

নির্মাণ কাজ পর্যবেক্ষণ ছক

খালঃ

তারিখঃ

পরীক্ষিত স্থান	কাজ	পর্যবেক্ষণের ফলাফল (টিক চিহ্ন দিন)	মন্তব্য
	(ক) পার্শ্ব ঢাল (খ) উপরের চওড়া (গ) তলার চওড়া (ঘ) গভীরতা (ঙ) মাটি ফেলার জায়গার দুরত্ব	নকশা মোতাবেক হচ্ছে কি? হ্যাঁ / না নকশা মোতাবেক হচ্ছে কি? হ্যাঁ / না নকশা মোতাবেক হচ্ছে কি? হ্যাঁ / না নকশা মোতাবেক হচ্ছে কি? হ্যাঁ / না নকশা মোতাবেক হচ্ছে কি? হ্যাঁ / না	

নাম

স্বাক্ষর

(ছক-গ)

নির্মাণ কাজ পর্যবেক্ষণ ছক

বাঁধঃ

তারিখঃ

পরীক্ষিত স্থান	কাজ	পর্যবেক্ষণের ফলাফল (টিক চিহ্ন দিন)	মন্তব্য
	(ক) নদী থেকে নিরাপদ দুরত্ব (খ) নতুন বাঁধের ক্ষেত্রে বাঁধের তলা থেকে গাছ/আগাছা পরিস্কার করা হয়েছে কি না? (গ) বাঁধ সংস্কারের সময় বেধিৎ বা ধাপ করা হয়েছে কি না? (ঘ) মাটি স্তরে স্তরে ফেলা হচ্ছে কি না? (ঙ) ঢেলা ভাঙ্গা হচ্ছে কি না? (চ) মাটি দুরমুজ করা হচ্ছে কি না? (ছ) শীর্ষ চওড়া (জ) বাঁধের উচ্চতা (ঝ) পার্শ্ব ঢাল (ঞ) ঘাসের চাপড়া লাগানো হচ্ছে কি?	নকশা মোতাবেক হচ্ছে কি? হ্যাঁ / না হ্যাঁ / না হ্যাঁ / না হ্যাঁ / না হ্যাঁ / না হ্যাঁ / না হ্যাঁ / না নকশা মোতাবেক হচ্ছে কি? হ্যাঁ / না নকশা মোতাবেক হচ্ছে কি? হ্যাঁ / না নকশা মোতাবেক হচ্ছে কি? হ্যাঁ / না হ্যাঁ / না	

নাম

স্বাক্ষর

নির্মাণ কাজ পর্যবেক্ষণ ছক

কাঠামোঃ

তারিখঃ

কাজ	পর্যবেক্ষণের ফলাফল (টিক চিহ্ন দিন)	মন্তব্য
(ক) কংক্রিটের উপাদান		
- বালু	মান ভাল / খারাপ	
- খোয়া	মান ও সাইজ ঠিক, হ্যাঁ / না	
- সিমেন্ট	মান ভাল, হ্যাঁ / না	
(খ) সাটারিং	ভালভাবে করা হয়েছে, হ্যাঁ / না	
(গ) রডের মরিচা আছে	হ্যাঁ / না	
(ঘ) সিমেন্ট রাখার ব্যবস্থা	ভাল? হ্যাঁ / না	
(ঙ) ব্লক তৈয়ারী	ঠিকমত হচ্ছে? হ্যাঁ / না	
(চ) ফিল্টার	দেওয়া হয়েছে? হ্যাঁ / না	
(ছ) গেট ফ্রেম	ঠিকমত বসানো হয়েছে কি?	
(জ) গেইট উত্তোলন ব্যবস্থা	ঠিক আছে? হ্যাঁ / না	
(ঝ) পানির সমতল গেজ চিহ্ন (উজান/ভাটি)	করা হয়েছে কি? হ্যাঁ / না	
(ঞ) রাবার সীল	ঠিক জায়গায় লাগানো হয়েছে কি?	
(ট) কাঠামোর উজান ভাটিতে খাল খনন	নকশা মত হয়েছে কি? হ্যাঁ/না	
(ঠ) কাঠামোর দুইদিকের রাস্তা	সম্পূর্ণ হয়েছে কি? হ্যাঁ/না	

নাম

স্বাক্ষর

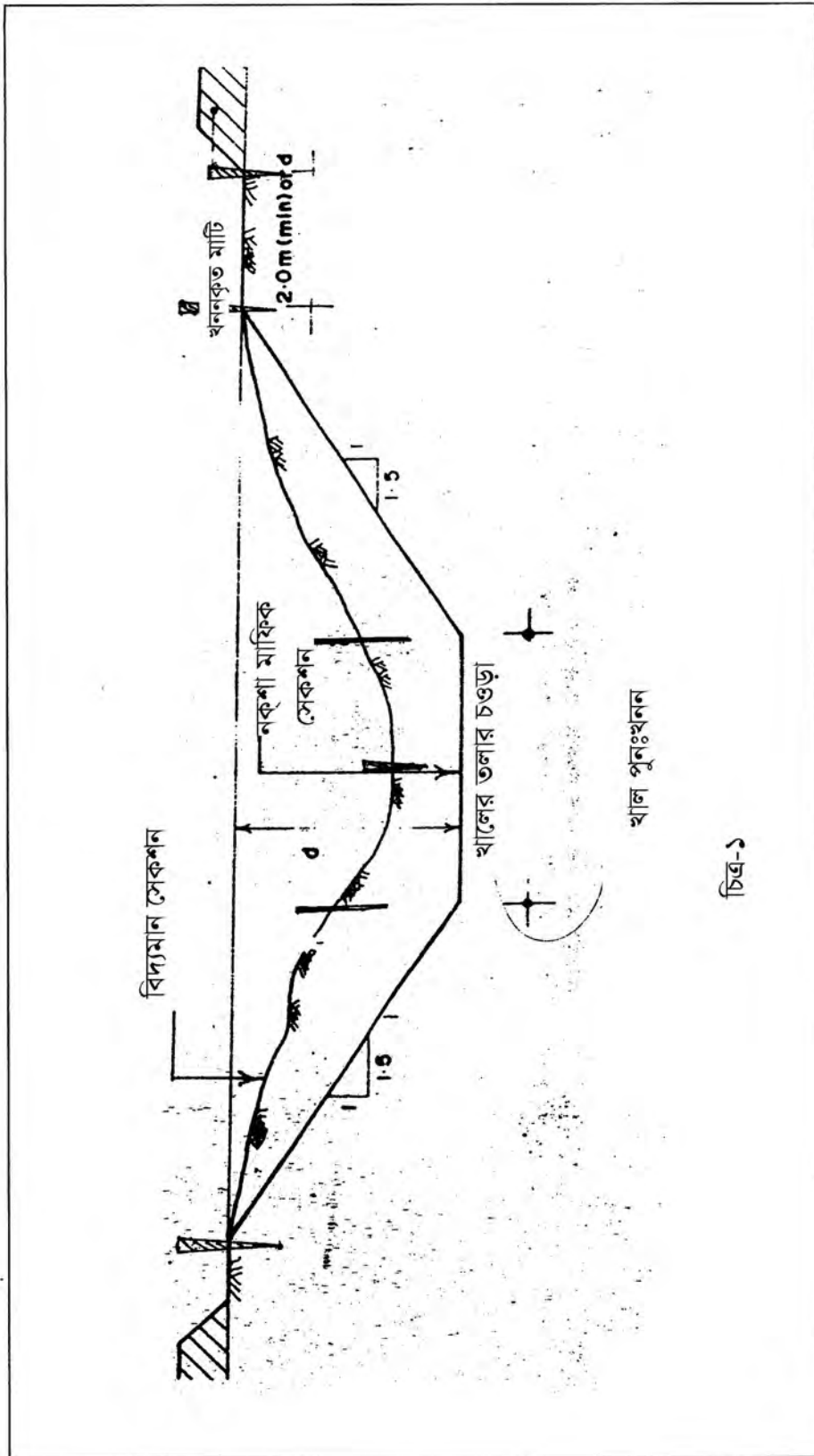
১১.০ পর্যবেক্ষণ কমিটির কার্যপরিধি

দ্বিতীয় ক্ষুদ্রাকার পানি সম্পদ উন্নয়ন সেক্টর প্রকল্পের অধীনে প্রস্তাবিত উপ-প্রকল্পের নির্মাণ কাজের গুণগতমান স্থানীয়ভাবে পর্যবেক্ষণের জন্য পাবসস ও ইউনিয়ন পরিষদ সমন্বয়ে “উপ-প্রকল্প নির্মাণ পর্যবেক্ষণ কমিটি” নামে ৭ (সাত) সদস্য বিশিষ্ট একটি কমিটি গঠিত হবে। এই কমিটির ৫ জন সদস্য পাবসস একটি সাধারণ সভার মাধ্যমে মনোনয়ন করবে এবং অবশিষ্ট ২ জন সদস্য ইউনিয়ন পরিষদ সাধারণ সভার অনুমোদন ক্রমে ঐ কমিটিতে কাজ করার জন্য মনোনীত করবে। এ কমিটিকে কাজ আরম্ভ করার পূর্বে কাজের গুণগতমান পর্যবেক্ষণের জন্য কোন কোন বিষয়ে দৃষ্টি দিতে হবে তার সম্পর্কে প্রকল্প থেকে প্রশিক্ষণ দেয়া হবে। কমিটি খাল, বাঁধ ও কাঠামো নির্মাণের সময় যে যে বিষয়ে দৃষ্টি রাখবেন তা নিম্নরূপ-

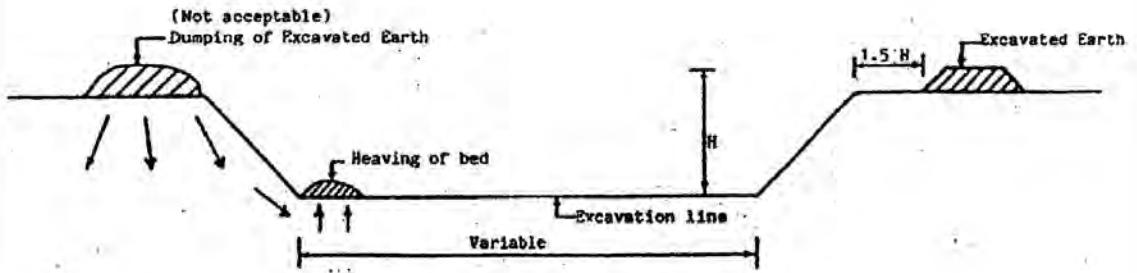
ক্র.নং	আইটেম	কাজ	কি কি পর্যবেক্ষণ করবেন
১.	২.	৩.	৪.
১.	খালঃ	(ক) পার্শ্ব ঢাল (খ) উপরের চওড়া (গ) তলার চওড়া (ঘ) গভীরতা (ঙ) মাটি ফেলার জায়গার দুরত্ব	নকশা মোতাবেক হচ্ছে কি? নকশা মোতাবেক হচ্ছে কি? নকশা মোতাবেক হচ্ছে কি? নকশা মোতাবেক হচ্ছে কি? যথাযথ কি না?
২.	বাঁধঃ	(ক) নদী থেকে নিরাপদ দুরত্ব (খ) নতুন বাঁধের ক্ষেত্রে বাঁধের তলা থেকে গাছ/আগাছা পরিষ্কার করা হয়েছে কি না? (গ) বাঁধ সংস্কারের সময় বেধিৎ বা ধাপ করা হয়েছে কি না? (ঘ) মাটি স্তরে স্তরে ফেলা হচ্ছে কি না? (ঙ) ঢেলা ভাঙ্গা হচ্ছে কি না? (চ) মাটি দুরমুজ করা হচ্ছে কি না? (ছ) শীর্ষ চওড়া (জ) বাঁধের উচ্চতা (ঝ) পার্শ্ব ঢাল (ঞ) ঘাসের চাপড়া লাগানো হচ্ছে কি?	নকশা মোতাবেক হচ্ছে কি? নকশা মোতাবেক হচ্ছে কি? নকশা মোতাবেক হচ্ছে কি? নকশা মোতাবেক হচ্ছে কি? নকশা মোতাবেক হচ্ছে কি? নকশা মোতাবেক হচ্ছে কি? নকশা মোতাবেক হচ্ছে কি?
৩.	কাঠামোঃ	(ক) কংক্রিটের উপাদান বালু, খোয়া, সিমেন্ট মান সম্মত কি না? (খ) রডে মরিচা আছে না পরিষ্কার করা হয়েছে (গ) কংক্রিটের উপাদান বালু, সিমেন্ট ও খোয়ার মিশ্রণ নিয়ম মত কি না? (ঘ) কাঠামোর ঢালে রক্ষাকারী ব্রক ফেলার আগে দৃষ্টিকরণ করা হয়েছে কি? (ঙ) ফিল্টার দেওয়া হয়েছে কি? (চ) ব্রক নিয়ম মত তৈরী হয়েছে কি না? (ছ) পানি সমতল গেজ চিহ্ন উজান/ভাটিতে আছে কি? (জ) গেইট ঠিকমত উঠা নামা করে কি? (ঝ) রাবার সীল যথাযথ লাগানো হয়েছে কি না? (ঞ) কাঠামোর উজানে ও ভাটিতে খাল নকশামত হয়েছে কি না? (ট) কাঠামোর দুইদিকের রাস্তা সম্পূর্ণ হয়েছে কি?	

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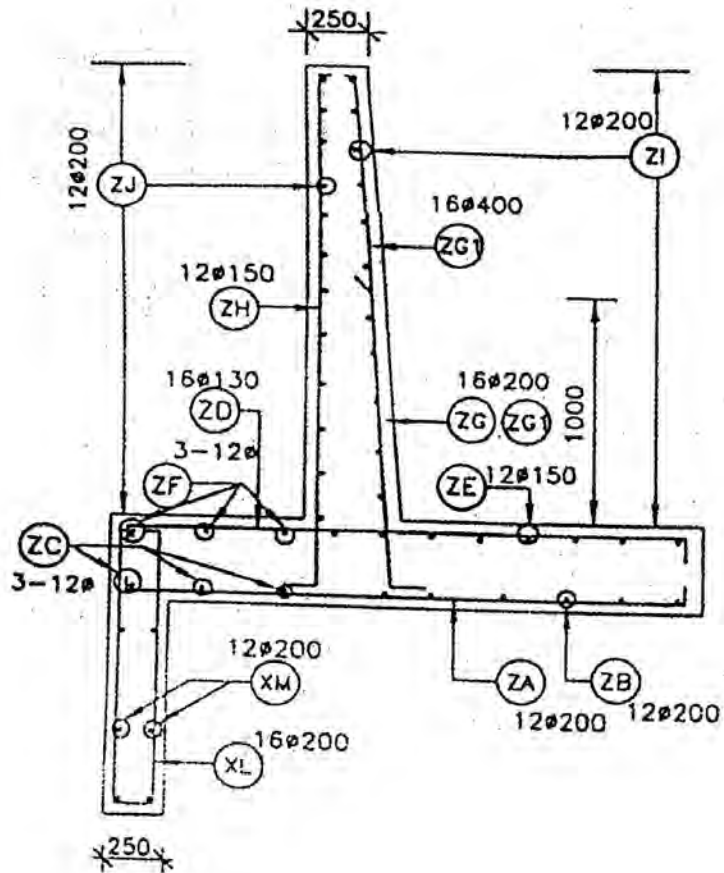
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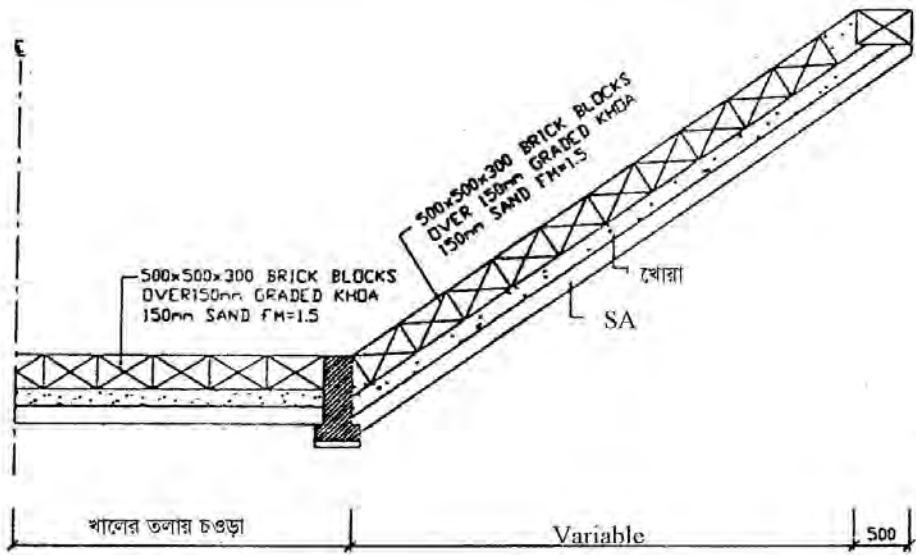
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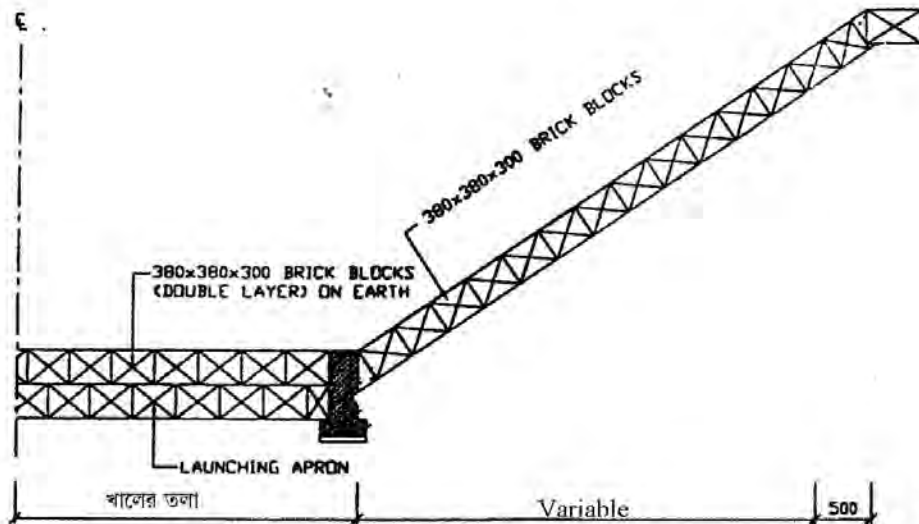
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চিত্র-৩ কংক্রীট কাট অফ ওয়াল



চিত্র-৬ রক্ষাকারী ব্লক সেকশন



চিত্র-৭ লঞ্চিং এপ্রনের সেকশন



বাঁধ তৈরী হচ্ছে । ঘাস সরানো হয়নি



বাঁধ পুনঃনির্মাণ করা হয়েছে অথচ দৃঢ়ীকরণ করা হয়নি



বাঁধ পুনঃনির্মাণের সময় দৃঢ়ীকরণ চলছে



বাঁধে কোন টার্মিং নাই



বাঁধে টার্মিং এর কাজ বাস্বায়ন করা হয়েছে



খালের পুনঃখনন



পানি সংরক্ষণ কাঠামো বাস্তবায়নের পরের চিত্র



সাটারিং ঠিক না থাকায় ঢালাইয়ের অবস্থা



রক্ষাকারী ব্লক দূরে তৈরী করা হয়েছে। পরে যথাযথ স্থানে দেওয়া হবে।



খালৰ ঢালাই বক তৈৰী তালৈ



ৰক্ষাকারী ব্লক যথাযথ হয়েছে



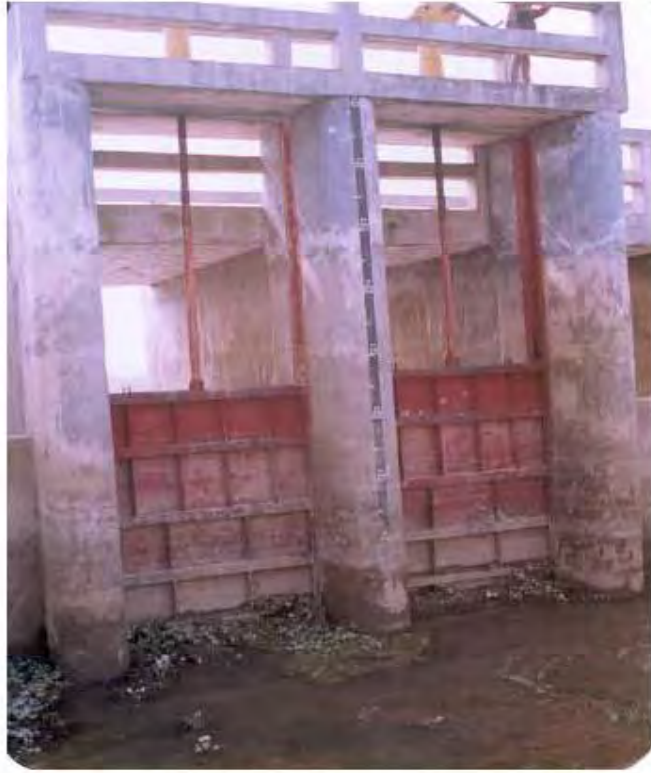
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রক্ষাকারী ব্লক সরে গিয়েছে



ভার্টিক্যাল গেইট হয়েস্ট সিস্টেম



ভাটিক্যাল গেইট নামানো অবস্থায়



ফ্ল্যাগ গেইট নামানো অবস্থায়

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Attachment III-20
Guidelines for Small
Scale Water Resources
Development Project
G8 Operation and
Maintenance

Local Government Engineering Department

Local Government Division

Ministry of Local Government, Rural Development and Cooperatives

Government of the People's Republic of Bangladesh

Guidelines for Small Scale Water Resources Development Project

G8 Operation and Maintenance

October 2017

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DOCUMENT ARCHITECTURE OF THE NEW SET OF GUIDELINES FOR SSWRD PROJECT

[Small Scale Water Resources Development (SSWRD) means, from physical points of view, implementing appropriate water management subprojects of small sizes, not exceeding 1000 hectare benefit area by the current definition, to resolve existing water management constraints to agriculture that in turn enhance rural employment leading to reduction of rural poverty. Implementation of SSWR subprojects involve long process from proposal of a subproject from Local Government bodies (Union Parishad and Upazila Parishad) to its final selection, study of feasibility from different considerations (social, environmental, technical, economical), preparing detail design and costing, constructing required physical works to standard quality and finally its operation and maintenance by its beneficiaries. The process has multiple facets too. It needs to be comprehensively beneficiaries' and other stakeholders' participatory, acceptable to people of widely varying social and socio-economic conditions, friendly to the surrounding environment, etc. Thus, Guidelines for SSWR Development is, of necessity, complex.

The long and complex process has been divided into major distinguishable steps and separate Guidelines for works and activities involved in those major steps have been developed. Environmental study applies to the subproject as whole and is of different nature. So, Guidelines for Environmental Assessment is made a separate document. Following this principle, the Ten (10) Guidelines with Alpha-numeric ID Numbers and Names as below constitute the Documentation of Guidelines for SSWR Development.

This list will appear in all the individual Guideline Documents with highlight of the current Document name for the user to refer when necessary]

THE LIST OF NEW SET OF GUIDELINES FOR SSWRD PROJECT

G1	Policy and Development Process
G2	Identification of Subprojects
G3	Participatory Rural Appraisal of Subproject
G4	Feasibility Study of Subproject
G5	Environmental Assessment of Subproject
G6	Detail Design of Subproject Structure
G7	Construction of Subproject Structure
G8	Operation and Maintenance
G9	Monitoring and Evaluation
G10	Integrated Rural Development Plan between SSWR and Rural Road/Market

AMENDMENT AND UPGRADATION RECORDS

This document “Guidelines for SSWR Development: G8 Operation and Maintenance of Subprojects” has been issued following amendments and up-gradations as outlined below:

Revision	Description	Date
	Operation and maintenance of SSWRD subprojects implemented under the first ADB-assisted SSWRDSP (1995-2002) was by the WMCA in a participatory basis and necessary Guidelines for the purpose were, in fact, on the development during the period of the project. The first comprehensive “Water Resources Operation and Maintenance Guidelines (October 2007)” was prepared and put to use under the <i>Second</i> SSWRDSP (2002-10).	October 2007
A	As the completed subprojects were on increase, the ADB undertook a detail “O&M Study” under the second SSWRDSP (2002-2010) which was completed in 2008. Subsequently, a report “SSWR Support Strategy and O&M Manual, October 2009” was submitted by the study group.	October 2009
B	Later, the “Operation and Maintenance Guidelines for Water Resources Infrastructure, 2013” was issued incorporating the findings and recommendations of the above studies. This document did not include O&M of Buried Pipe Irrigation Subprojects (CAD subprojects) though a good number of these subprojects, using uPVC pipes had been implemented under the JICA-assisted SSWRDSP (2009-15).	July 2013
C	This “Guidelines for SSWR Development: G8 Operation and Maintenance of Subprojects” is the <i>Eighth</i> Document of a series of Guidelines for SSWR Development finalized and approved by a Working Group of LGED Professionals with proven experience in SSWR development with assistance from Specialist WRD Consultants under a JICA-LGED Technical Co-operation Project. The Document <i>adapts the existing “Operation and Maintenance Guidelines for Water Resources Infrastructure, 2013” to the standard set of Guidelines for SSWR Development</i> and incorporates O&M of CAD subprojects with buried PVC pipeline irrigation systems and also lessons learned over the time.	August 2017

GLOSSARY

Aman	Rice grown during the wet season (Kharif), and harvested late (Nov-December). Yields: (i) Broadcast, deep water 1.5t/ha; (ii) Transplanted, local variety 2.2t/ha; (iii) Transplanted, high yielding variety, 3.25t/ha
Aus	Rice grown during the wet season (Kharif), and harvested early (July-August). Yields: (i) Broadcast 1.25t/ha; (ii) Transplanted, high yielding variety, 2.5t/ha
Beel	Saucer shaped low-lying area with pond of static water as opposed to moving water in rivers and canals.
Boro	Irrigated rice grown in the early dry season (Rabi). Transplanted in December-January and harvested in April-May. Yield: Transplanted, high yielding variety, 4.25t/ha
District	Second administrative unit of the government comprising 6-9 Upazilas. There are 64 districts in Bangladesh.
Haor	Haor is a wetland ecosystem in the north eastern part of Bangladesh. Physically a bowl or saucer shaped shallow depression, also known as a back-swamp
Integrated Water Resources Management Unit	Unit comprising two sections: (i) planning & design, and (ii) operation & maintenance, with a mandate to guide LGED's activities in the water sector with specific responsibility to assist in enunciation of policies, formulation of strategies and plans, preparation of new projects, inter-agency coordination and with external agencies, undertake studies and to provide long term support to the completed projects
Khal	Natural or man-made water channel (canal)
Kharif	Wet (monsoon) season
Local Stakeholder	Local Stakeholders are inhabitants of an area directly or indirectly affected by water management, be it as beneficiaries or as "project affected people".
Project Affected People	People negatively impacted by investment in water management projects and / or subprojects or by the manner in which water regulating infrastructure is managed.
Project Consultants	Project implementation consultants working with the PMO
Project Management Office	A unit comprising LGED staff appointed to manage implementation of a Project
Rabi	Dry / winter cropping season (November to March)
Stakeholder Groups	Stakeholder groups are collections of individuals who have similar interests concerning water. Among others, such stakeholder groups are men and women, farmers (low, medium low, medium high and high land farmers), fishers, boatmen, landless, elected representatives, LGED employees, BWDB employees, employees of other government departments, contractors, consultants, and development partners.
Union	Subdivision of Upazila and the lowest governance institution in the country. There are 4,889 Unions in Bangladesh.
Union Parishad	Local government institution at Union level. The Union Parishad consists of an elected council & chairman, and is the oldest government institution in Bangladesh
Upazila	Administrative unit, sub-division of District and lowest administrative tier of the government. In all, there are 482 Upazilas in Bangladesh.
Upazila Parishad	2 nd tier of local government institution at Upazila. According to the Upazila Parishad Act 2009, Upazila Parishad consists one elected Chairman and two Vice-chairmen, Chairmen of UPs and Mayor of Municipality within each Upazila including representatives from line agencies with an Upazila Nirbhai Officer as the Secretary. The election of the Upazila Parishad was held on 22 January 2009. Upazila Parishad runs the local administration.

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
AE	Assistant Engineer
BWDB	Bangladesh Water Development Board
CA	Community Assistant (Project Based – Subproject Level)
CO	Community Organizer
CPO	Community Participation Officer (Project based, District level)
CS	Construction Supervisor (Project Based – Upazila Level)
DAE	Department of Agricultural Extension
DDM	Detailed Design Meeting
DLIAPEC	District Level Inter-Agency Project Evaluation Committee
DOC	Department of Cooperatives
DOF	Department of Fisheries
DWRA	District Water Resources Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Mitigation Plan
FMC	First Management Committee (of WMCA)
FSDD	Feasibility Study and Detailed Design
GoB	Government of Bangladesh
IEE	Initial Environmental Examination
JBIC	Japan Bank for International Cooperation
JICA	Japan International Cooperation Agency
ICM	Integrated Crop Management
IWRMU	Integrated Water Resources Management Unit (of LGED)
LCS	Labour Contracting Society
LGED	Local Government Engineering Department
MC	Management Committee (of WMCA)
MEP	Member Education Program
MIS	Management Information System
MLGRDC	Ministry of Local Government, Rural Development and Cooperatives
NGO	Non-Governmental Organization
O&M	Operation and Maintenance
PAP	Project Affected Person
PE	Performance Enhancement
PEA	Performance Enhancement Appraisal
PM	Planning Meeting
PMO	Project Management Office
PRA	Participatory Rural Appraisal
QC	Quality Control
SAE	Sub-Assistant Engineer
SAPROF	Special Assistance for Project Formulation
SP	Subproject
SSWR	Small Scale Water Resources
SSW-1	SSWR Development Project Phase I (ADB), 1996-2002
SSW-2	SSWR Development Project Phase II (ADB), 2002-2009
SSW-3	SSWR Development Project (JBIC), 2009-2016
SSW-4	Participatory SSWR Project (ADB) 2010-2017
TA	Technical Assistance
UDCC	Union Development Coordination Committee
UE	Upazila Engineer
UP	Union Parishad (local council)
UzP	Upazila Parishad
WMCA	Water Management Cooperative Association
XEN	Executive Engineer (usually used in LGED)

FARM, LAND AND SUBPROJECT CATEGORIES

FARM CATEGORIES

Land Holding		Farm Category
(ac)	(ha)	
<0.51	< 0.21	Landless
0.51 – 1.00	0.21 - 0.40	Marginal Farmer
1.01 – 2.49	0.41 – 1.00	Small Farmer
2.50 – 7.49	1.01 – 3.03	Medium Farmer
>7.50	>3.03	Large Farmer

LAND CATEGORIES

Depth of Average Monsoon Flooding		Land Category
(m)	(ft)	
<0.3	<1.0	Highland
0.3-0.9	1.0-3.0	Medium Highland
0.9-1.8	3.0-5.9	Medium Lowland
>1.8	>5.9	Lowland

SUBPROJECT CATEGORIES AND TYPES WITH USUAL WORKS AND OBJECTIVES

Category		Type		Typical Works with Objectives
I	Simple (without Regulation of Water Flow)	DR	Drainage	Re-excavate drainage <i>khals</i> to increase capacity of drainage systems to benefit agriculture as well as fisheries and local navigation
		TI	Tidal Irrigation	Re-excavate existing <i>khals</i> to enhance tidal flux (volume and propagation) in the <i>khals</i> in dry season to benefit irrigated agriculture in fresh water tidal areas as well as fisheries and local navigation (also increases drainage capacity)
II	Complex (with Regulation of Water Flow using gated or other kind of structures)	FM	Flood Management	Rehabilitate and construct embankments and/or sluices/regulators to reduce extent and duration of flooding of farmland inside the subproject
		FMD	Flood Management and Drainage	Rehabilitate and construct embankments, sluices/ regulators and re-excavate <i>khals</i> to reduce extent and duration of flooding of farmland and increase drainage capacity of khal system of the subproject
		FMDTI	Flood Management, Drainage and Tidal Irrigation	Rehabilitate and construct embankments, sluices/ regulators and re-excavate <i>khals</i> to reduce extent and duration of flooding of farmland, increase drainage capacity and tidal flow capacity of khal system of the subproject. Sluices/regulators of these subprojects will have arrangements of

Category		Type		Typical Works with Objectives
				automatic flow of drainage and tidal inflow at the gates.
		WC	Water Conservation	Develop water retention capacity of existing <i>haors</i> , <i>beels</i> and <i>khals</i> to increase availability of surface water for irrigation in dry season by installing gated water retention structures (also <i>Rubber Dams</i> at appropriate sites) and by re-excavating <i>khals</i> and suitable water bodies
		FMDWC	Flood Management, Drainage and Water Conservation	Combination of works involved in FMD and WC type of subprojects outlined above
		CAD	Command Area Development	Development of existing irrigation schemes by providing better water distribution systems over the command area and, as agreed, pumping facilities. Works may include: improved canal network, lining of canals, installation of buried pipelines, installation of control structures, construction of pump house, etc.
		DRCAD	Drainage and Command Area Development	Development of existing irrigation schemes by providing better water distribution systems including drainage improvement measures for the command area and, as may be agreed, pumping facilities. Works may include: improved canal network, lining of canals, installation of buried pipelines, installation of control structures, construction of pump house, headwater tanks, regulators/sluices in drainage khals, etc..
		FMDCAD	Flood Management, Drainage and Command Area Development	Development of existing irrigation schemes by providing better water distribution systems together with flood management and drainage improvement facilities for the command area and, as may be agreed, pumping facilities. Works may include: improved canal network, lining of canals, installation of buried pipelines, installation of control structures, construction of pump house, headwater tanks, etc and construction / rehabilitation of embankments, sluices /regulators in drainage khals, etc..
III	Performance Enhancement	Any Type of Existing Subprojects		Any of the above described works for existing (developed and handed over) subprojects for which additional works are desirable to consolidate planned benefits / result in additional benefits

1. Introduction

1. Proper and skilful operation is indispensable to obtain benefit from any physical structure. On the other hand, timely and appropriate maintenance is required for the sustainability of physical structure. In general picture of operation and maintenance after implementation of subproject is not bright. Major reasons identified are lack of interest and participation of local people, weak organization, inefficient management and lack of availability of operation maintenance fund. LGED was involved in water resources activity from 1960s in works program under Camilla Model. Later on through Canal Digging and ISP program started to implement water resources development scheme. In water policy ownership of FCD and FCDI projects with command area of 1000 ha or less has been entrusted to Local government Engineering Department/ Local Govt. Division. LGED is implementing this type of subprojects form 1995 and number of such scheme are increasing day by day although Government fund for maintenance is not available as per need. Consequently after completion of the subprojects as per plan sustainable water resources are rarely achieved.

2. If after the construction of subproject infrastructure can be kept functioning with proper operation and maintenance, the beneficiaries can obtain expected benefit of water resources development. Need for infrastructure operation and maintenance to be discussed during planning so that operation can be done smoothly. The Water Management Association (WMCA), which is formed by beneficiaries, assumes operation and maintenance responsibility after subproject implemented by LGED is handed over. However, LGED helps the WMCA and provide fund for maintenance.

3. LGED by implementation of small scale development sector project (1995-2002), small scale development sector project (2002-2010), small scale water development project-JICA (2009-2015) and Participatory small scale water development sector project (2009-2017) will handover about 1100 subprojects to WMCA. In addition 30 Rubber dams have been implemented from GoB fund and few are under construction. Guidelines are essential for the proper operation and maintenance of infrastructure.

4. For proper operation and maintenance a stable institution and infrastructure is needed. For this reason during preparation of the guideline proper weightage has been given to institution and technical aspect. As for example for providing fund for maintenance and for performance improvement (additional or rehabilitation) Priority list should be prepared.

5. The revised Guideline has been prepared with additional information as below:

- LGED's maintenance funding strategy including the use of GoB funds to support maintenance and detailed description of the maintenance process that now includes prioritization of use of funds by technical and institutional grading assessments of handed over subprojects.
- Operation and maintenance for Command Area Development (CAD) subprojects, particularly buried pipe system, as well as for rubber dams.
- Differentiation is made between the O&M needs of simple (usually drainage) subprojects which have no structures, the more complex one with regulatory structures and CAD subprojects which are most in need of competent operation structures. Subproject operations, particularly for controlled flow and CAD subprojects are now covered in detail.
- Finally, substantial investments in some completed subprojects may be required, for example to reconstruct failed structures, or to build additional structures and further improve performance. These performance enhancement works are also covered by these Guidelines.

2. Objectives

- i) Provide a clear understanding of the operation and maintenance needs of the different types of SSWR subprojects.
- ii) Ensure understanding and application of the maintenance process and funding arrangements of different categories of maintenance (simple, periodic and emergency).
- iii) Promote the active participation of beneficiaries in O&M and build up a long term partnership between LGED and WMCA
- iv) Ensure participation of beneficiaries in O&M activities of SP.
- v) Duties and responsibilities LGED's officials and WMCA and increase their performance.
- vi) Ascertain the need for O&M, preparation of annual plan, implementation and resolve the monitoring problem.
- vii) Ensure sustainable operation and maintenance of subproject.

3. Main Infrastructure of Small Scale Water Resources Subprojects

6. This chapter outlines the main infrastructures of SSWRD Subproject.

3.1 Flood Control Embankment

3.1.1 Full Flood Embankment

7. The embankment which is constructed at the required height to keep the subproject area flood free is known as flood control embankment or bundh. Sluice gate or regulator is constructed to control water within and outside the embankment. The height of flood control embankment is generally higher than that of normal road. The embankment is designed (height, width etc.) and implemented in accordance with the flood data. In SSWRS the embankment is designed with a 20 years flood frequency.



Figure-1 Flood Management Embankment

3.1.2 Submersible Flood Embankment

Submersible flood embankment is generally constructed in Haor Area. This embankment goes under water throughout the monsoon period. The embankment is designed with water level of Mid-may with flood frequency of 10 years. This embankment saves boro crop. To control water level of in and out sluice/regulator

3.2 Khals: Drainage, Water Conservation, Tidal Water Supply

8. Khal (channel) is an existing, mostly natural but may also be excavated, water course for drainage of runoff. These khals may be re-excavated according to required design to drain out an area when water-logging damages crop during pre-monsoon and/or monsoon seasons. The re-excavated khals will also conserve water during post-monsoon season for irrigation use. Sometimes, tidal khals are re-excavated to increase both volume and propagation of tidal water more inside the subproject area for use in irrigation.



Figure-2 Drainage/Conservation Khal

3.3 Hydraulic Structures

9. Different types of hydraulic structures are required to construct in the water resources subprojects. Each structure has different function. A brief description of each type of structure is given below.

3.3.1 Regulator

10. Regulator is used both for flood control and drainage of water. Arrangements are made to operate regulator gate vertically. The operator can operate the gate easily and control water i.e., gate can be opened or closed, as a result required water level can be maintained with the control of water flow within and outside the subproject. Occasionally, operation of the gate is not required when water level remains the same within and outside the subproject area due to the local or regional hydrological system, flooding characteristics and location of the subproject. However, this situation continues for a short period. With reduction of the river water level the gate is opened for the drainage of floodwater from within the subproject area.



Figure-3 Regulator

3.3.2 Sluice

11. Sluice is constructed to give tidal flood protection in tidal areas and normal flood protection in non-tidal areas. Usually, flap gate is attached with the sluice gate which is operated automatically. The gate closes automatically when water level in the riverside is higher than in the subproject side. On the other hand, when the water level at subproject is higher the gate opens automatically with the water pressure. Generally the number of vent is single or multiple for each type of sluice gate. Gates are fixed with the sluice head wall.



Figure-4 Sluice

3.3.3 Flushing sluice

12. The sluice or regulator with which arrangement is made to bring in water from outside is known as flushing sluice. In general, the flushing sluice is constructed in relatively higher part of the subproject area. Usually, the flushing sluice is useful to conserve tidal water for irrigation in the subproject area in tidal flooding zone.

3.3.4 Water Retention Structure

13. Generally, this type of structure is constructed in relatively higher and tidal flood free zone. Water retention structure is useful for the conservation of monsoon water, supplementary irrigation in aman rice crop fields and after that for the conservation of water in the post-monsoon season to irrigate non-rice and boro rice crops in the winter season. Gate of this structure can be raised vertically and manually operated (open and close) with ease.



Figure-5 Water Conservation Structure

3.3.5 Culvert

14. If any road obstructs flow of water from the subproject area, culvert is constructed at appropriate location to protect land from water logging. Culvert is also constructed on the excavated or re-excavated khal for the local people for their movements across the both banks.



Figure-6 Culvert

3.4 Irrigation Structure

15. The project implements another type of subproject to increase water availability for irrigation. It is categorized as command area development (CAD) subproject. The components of this subproject are different. The descriptions of the components are as follows.

3.4.1 Irrigation Canal

16. Water distribution canals of the irrigation subprojects are categorized into two types. The canal which is constructed from the main source of water (generally river) to the field is called as main canal and which are constructed from the main canal to carry water to the fields considered as a branch canals. Both types of canals are pucca (lined). Besides, there are some earthen canals which are considered as field canals.



Figure-7 Irrigation Canal

3.4.2 Aqueduct

17. Aqueduct is constructed over a drainage channel when it obstructs water distribution through irrigation canal. The aqueduct conveys water over the drainage channel to irrigation area. This can be called as bridge for the conveyance of irrigation water. This type of structure is should be pucca .



Figure-8 Aqueduct

3.4.3 Syphon

18. Generally, if any road or embankment obstructs the irrigation canal, pipe or box culvert type structure is constructed under the road or embankment for the conveyance of water. Siphon and aqueduct can be considered as opposite to each other, but their functions are different. Siphon can be also used for drainage.



Figure-9 Syphon

3.4.4 Buried Irrigation Pipe System

19. In this system with the help of pump water is lifted in the header tank and is distributed to area through the underground pipe system. In this system for supply of

irrigation water no land is lost. Though implementation cost is high but considering long term application this system is less costly. During water supply as there is little loss of water during irrigation water can be supplied to larger area. Although irrigation cost with PVC pipe is high but there is advantage in using PVC pipe. For manufacturing of pipe there is no loss of time in field for which there will be less time required for laying pipes. Easy to maintain quality control and there is no chance of constructing low quality pipe. As weight of PVC pipe is less compare to concrete it is easy for transportation of pipe and easy to make joint. If implemented correctly there is little chance of leakage of pipe through pipe joint.

3.4.4.1 Header Tank

20. Header Tank is a concrete structure. There may be more than one chamber depending on off taking pipe lines. There is provision of steel ladder and gate in the chamber. In the header tank primarily silt can be deposited and arrangement is kept for flushing. Water level of Header tank should be such that it can command the whole area. There will be arrangement for gate regulation so that water can flow through all the pipelines.

3.4.4.2 Standpipe (Air Vents)

21. Standpipe is to be raised from top of PVC pipe line. Standpipe is to be provided in between two outlets due to air vent air inside the pipeline can be able to come out and pressure of pipeline can be kept as per design. Height of standpipe should be 60 meter above the energy line. There is no need to operate air vents.

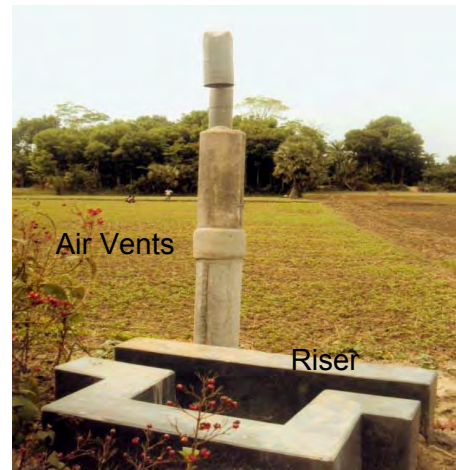


Figure-10 Air vents & Riser

3.4.4.3 Outlet (Riser)

22. Riser pipe starts from PVC pipeline. Alfafa valve is located here. Over the riser pipe distribution box is set and flow of water is controlled. Water is distributed from pipeline through the outlet. Outlet is set at an Average distant of 200 to 500m. Alfafa valve is regulate so that each irrigation unit can get water as per requirement.

3.4.4.4 Overflow Standpipe

23. At the place of pipe layout from PVC pipeline straight pipe is added. With the help of outflow standpipe additional water can be released without any damage. Adding Piezometric Pipe in escape pressure can be measured. After monitoring of pressure in pipe line operator can be instructed to increase or decrease the flow and arrangement of drainage can be made. Height of standpipe is kept 0.30m above pressure line.

3.4.4.5 Washout

24. Washout is control valve with PVC pipe off take or concrete access box which is placed at low pocket of pipeline. Washout is added for flushing, repair or silt cleaning.

3.5 Rubber Dam

25. At the bed of medium or Small River Rubber Bag is attached with concrete structure and is inflated by air or water to form Rubber Dam. When deflated it sits in the river bed and can be inflated again if required. Rubber Dam is a flexible Dam. Rubber Dams



Figure-11 Rubber Dam

can be up to 100m in single units and units can be added one after another separated by concrete piers. However, height of Rubber Dams is presently limited to about 5 m. In our country, Rubber Dams are used to conserve water in small to medium rivers for dry season irrigation and to protect Haor area crops from inundation damage by preventing pre-monsoon floods entering through khals/rivers up to about the third week of May. .

4. Operation of Infrastructure

26. Infrastructure of FMD and WC subprojects are operated – meaning that gates of the hydraulic structures are opened or closed - to ensure judicious control of water level and/or quantity of water in the subprojects to achieve maximum benefit. Drainage and Tidal Irrigation subprojects do not involve operation activities. Operation of gates differs with type of structures and also with tidal and non-tidal zones. Operation of infrastructure of FMD and WC subprojects are discussed in sections below.

27. For CAD (irrigation) subprojects, operation activities are characteristically different – involves distribution and management of irrigation water over the whole subproject area requiring fulltime involvement of system operators. Operation (and also maintenance) of irrigation systems of CAD subprojects are discussed separately in Appendix G8-A: O&M of Buried Pipe Irrigation (CAD) Subprojects appended to this document.

4.1 Gate of Water Control Structure

28. Flood is controlled or water is conserved with the help of gate. Gate has an important role to achieve the subproject objective and expected benefit is not achieved without the proper its operation. Two types of gates are used for regulators and sluices in LGED water resources development project. These are vertical gate and flap gate. Vertical gate is opened or closed with the help of handle and flap gate automatically.

4.2 Vertical gate

29. Operation of this gate requires an operator. Flood can be controlled and water can be conserved during the pre-monsoon, monsoon and post-monsoon seasons with the operation of this gate. Moreover, in tidal flooding zone this gate is useful to bring river water into the subproject area for conservation. Seal is affixed with the gate on the downstream side during the water conservation.



Figure-12 Vertical Gate



Figure-13 Raising of Vertical Gate

support
system
handle
opened
manually
conserve
maintain
the



4.2.1 Vertical gate lifting system

30. With the of mechanical and use of vertical gate is or closed to control flood, water i.e., water level within subproject area.

4.2.2 Flap gate

31. This gate is designed so that it is opened automatically with the water pressure developed due to higher water level within the subproject area than in the riverside initiating drainage of water. The rise of water level downstream closes the gate protecting the subproject area from flooding. This gate at the ending part is hanged across the upper part of the barrel. Rubber seal is affixed with the flap gate on the subproject side. The flap gate does not function automatically to bring water from the riverside to the subproject area. It can be opened manually by fixing a chain with the hook attached with the gate frame



Figure-14 Flap Gate

4.2.3 Flap gate lifting system

32. Although the flap gate is operated automatically, manual operation is required to lift for flushing of water from the riverside to the subproject area. This can be done by fixing a chain with the hook of the gate frame.



Figure-15 Flap gate lifting system

4.3 Flood control and water drainage structure

33. This type of structure has flap gates on the riverside. As the operation of this gate depends on the water level upstream and downstream, it opens and closes automatically without employment of fulltime operator. However, the WMCA sub-committee should give overall responsibility for the gate operation to a WMCA member. The member will instantaneously inform the sub-committee if there arises any trouble related to the operation of the gate and take necessary step for immediate solution.

4.3.1 Flood control, water drainage and water conservation structure

34. This type of structure has a vertical gate as well as a flap gate. The water level within the subproject area is maintained with the operation of vertical gate. Following information are required for the operation of this structure:

- Description of land related to extent and elevation within the subproject area;
- Decision on the level of water to be retained after the rainy season;
- Decision on the level of water to be maintained for water conservation if required during the rainy season; and
- Arrangement for the operation of gate during the rainy season.

4.3.2 Water retention structure

35. This type of structure has vertical gates. Water is conserved in the subproject area with the operation of the vertical gate. But, care should be taken so that water retention does not impede drainage. Following information are required for the preparation of gate operation guidelines:

- Description of land related to extent and elevation within the subproject area;
- Decision on the level of water to be retained; and
- As water is retained at the beginning of the rainy season, during the rainy season and at the end of the rainy season with this structure, decision should be taken about when the gate should be closed.

4.3.3 Flushing Sluice/Regulator

These types of structures may have flap or vertical gates. The main purpose of water flushing is conservation of water within the subproject area for irrigation. Following information are required for the operation of these structures.

- Description of land related to extent and elevation within the subproject area;
- Decision on the time of flushing; and
- Specific decision regarding the water conservation level.

4.4 General rules for the operation of water control structure

36. When and at what level of water should be retained in the subproject area can not be decided in a single operation. It is an iterative process and requires several years of operation to decide required water level and timetable. For this purpose, gate operation data should be recorded in a registrar for each gate.

37. The general rules for the operation of water control structure are as follows:

- Before operation of the structure, condition of gate hoisting system should be checked to ensure that it functions properly and the gate moves easily;
- Close the gate and check any leakage of water through the gate;
- Vertical gate should be opened slowly to prevent excess water flow through the structure;
- During the flow of water the difference between upstream and downstream water levels should not be more than 30 cm;
- At the beginning, gate should be opened slowly to increase water level downstream;
- During the opening of gate attention should be given to the velocity of water flow so that it cannot damage the khal downstream or protective blocks;
- The gate opening speed can be increased with the rise of water level downstream. But care should be taken so that there is no damage of khal downstream;
- Flushing sluice gate is operated on the basis of water demand and availability. Care should be taken so that the water level difference between subproject side and riverside is not more than 30 cm and less difference is better;
- If the number of vent is more than two, middle gate has to be opened first. Sudden opening of gate from any side could cause sharp and oblique water flow which may damage protective blocks downstream. Similarly sudden opening of all gates may damage the protective blocks due to excessive flow of water;
- Gate has to be closed slowly when water level reaches at the required level within the subproject area, sudden closing of the gate may damage the structure;
- In the coastal area gate has to be operated with integration between shrimp farming and crop production;

- During the operation of structure attention should be given to the fish production. For example opening of gate in the beginning of the rainy season will allow fish and fingerlings migration and floodwater carry spawn into the subproject area;
- WMCA/sub-committee will decide about the operation of gate in consultation with all beneficiary farmers and in consideration with crop patterns and land elevation;
- If required gate operation guidelines should be changed from the experience in preceding year; and
- Certainly gates should be operated according to the decision by the WMCA/sub-committee.



Figure-15 Water Level Gauge

4.5 Water level gauge

38. Gauge is set up with cement plaster pointing to measure water level in the subproject area and riverside when gate remains closed or opened. Adjusting with floor level of the infrastructure the scale of gauge should be set with respect to PWD meter and written in Bengali. Proper attention should be given to set up the gauge accurately, since water level after the implementation of the subproject could not be determined without it. The gauge should be painted for the clear and easy visibility.

4.5.1 Measurement of water level and operation of structure

39. Preparation of comprehensive operation plan is essential to achieve subproject objectives properly and ensure maximum benefit. Water retention time and level should be decided in line with the beneficiaries demand and occupational interests so that no conflict arises between them. Information should be collected on the area of land at different elevations and how different occupational use the water resources to decide water level desired in the water conservation subprojects. The collection of the same information is required for structure constructed only for water conservation. In sluice there are vertical gates at the downstream of the flap gate for water conservation. Flap gate is elevated to bring in water from the river for conservation into the subproject area with the help of vertical gate. This process is slightly complicated. If there is rain during the water conservation, the gate may be opened for the drainage of water. Gate should be operated in consideration with water demand and availability. Conservation of water may be required during the pre-monsoon, monsoon and post-monsoon seasons. The level of conserved water should be decided according to the subproject area elevation curve to so there is no adverse impact within the subproject area. For conservation of water at the end of the rainy season it should be checked that drainage has been ensured up to the required level for subproject benefit. Gate operation calendar and determination of water level depends on the requirement of subproject and diversity of climate. An operation calendar should be prepared before the rainy season starts in consideration of the existing crop pattern and fisheries activities. This should be finalized with the field level examination. At least after three years operation a realistic operation policy could be prepared. It can be mentioned that, from the general policy a written operation index has to be prepared separately for each structure within a subproject area. When there are several structures within a subproject, the operation index of each structure should be coordinated with others so that there is no adverse impact within the subproject.

4.6 Beneficiary Participation in Operation of Subproject Structures

4.6.1 Agreed Optimum WL in Subproject Basin

40. Water management in subprojects having FMD and WC functions amounts to maintaining an optimum water level in the subproject basin by operating gates of hydraulic structures such that farmers of the basin area have a general agreement to that water level. As crop lands have different elevations, this optimum water level is difficult to define in a straightforward way. It is to be arrived at by considering crops in the field and opinion and understanding of the crop owners. Nevertheless, the desirable water levels in subprojects are to be evolved during a few years of subproject operation through crop practice planning (planning different crops in different land elevations based on achievable subproject water level) and experiences gathered over the years. That is to say, continuous participatory efforts will be necessary for having an effective water management established in a subproject.

4.6.2 Operation Calendar of Subproject

41. An initial operation calendar of a subproject is usually provided for the WMCA during design of the subproject. Two such operation calendars – one for subprojects with purposes of flood control and water retention and the other for subprojects of water retention purpose only are given in Exhibit G8-6 and Exhibit G8-7 respectively for reference. The initial operation calendars will be used in operation of the structures during first year joint O&M of the subproject and noting carefully the results and experiences thereof. These will be discussed in the WMCA, particularly by the O&M subcommittee with participation of the Village Representatives and beneficiary farmers and necessary modifications if considered necessary in timing of gate operation and/or in water levels maintained for use in next season. At the same time, crop practice planning should also be considered based on experience learned. It is expected that a reasonably stable water management practice would be established in the subproject in 2-3 years.

4.6.3 Record Keeping of Subproject Operation

42. For each hydraulic structure of a subproject, a register for Operation Records will be maintained. All records like (i) Date and Time, (ii) Opening of gate below the gate bottom by Gate No (for a closed gate opening will be zero), (iii) WL at upstream, (iv) WL at downstream, (v) Reason for increasing or decreasing opening or closing gate, (vi) comment on condition of crops in the field at the time of gate operation, (vii) Person giving instruction to operate the gate, etc will be recorded. The records will be used in subsequent review of operation Calendar and other purposes.

4.6.4 O&M Subcommittee and Village Representatives Co-ordinate on Gate Operation

43. As can be understood from section 5.7.1 above, there may always be people who will have feeling that the operational WL decided and maintained by the subproject management is not favourable for them. Accordingly, there remains the apprehension that someone or a group may try to tamper gate operation in their favour. To avoid such mischievous activity, O&M Subcommittee should remain in alert and maintain close co-ordination with Village Representatives of different villages which will enhance co-operation, understanding and vigilance to avoid such unwanted happenings.

Table 4-1: Subproject categories and O&M needs

Number	Category of subprojects	O&M Needs	Implications
1.	Uncontrolled Flow: Any type of SPs where only LCS works were carried out and there are	Operation: None Maintenance: Walkthroughs, Khal desilting, embankment rain-cut	Relatively simple: separate training proposed for concerned WMCA/ O&M committee members; low level of

	no gated structures. Applies to 20% to 30% of SPs	repairs, etc, and funding arrangements.	project support required with few site visits. Data entered into MIS.
2.	Controlled Flow: SP with one or more structures to control flows and / or water levels. May be any combination of Drainage Improvement, Flood management and Water Conservation	Operation: gates according to operation plan/ strategy prepared by WMCA Maintenance: greasing of spindles and gears, painting of gates, concrete including block protection repairs, khal desalting, embankment rain cut repairs etc and funding arrangements	Relatively complex; separate training proposed for concerned WMCA/O&M Committee members; medium level of project support required with 1-2 site visits per year with data entered with MIS
3.	Command Area development, CAD- pumped water distributed by buried pipe/ open channel	Operation: pumping, flow control and rotations, irrigation applications Maintenance: pumps, pipe line and structures, open channels. Fund collection and funding arrangements	Most complex: Separate training proposed for concerned WMCA/O&M Committee members; high level of project support with site visits for mentoring O&M activities. Data entered into MIS

Table 4-2: Type of Subprojects, Impacts and Operation Procedure

Category of SP	Subprojects	Infrastructures	Impact	Operation Procedure	Period of operation
Simple, no water control arrangement	Drainage	Drainage Canal or canal for supplying irrigation water from outfall river	<p>During pre-monsoon period crops will be saved from rain induced flood.</p> <p>During post-monsoon there will be quick drainage and field will be ready for cultivation in time.</p> <p>Tidal water will be available in dry period due to canal re-excavation and de-silting activity.</p>	No operation needed	Year round
Controlled water management	Water conservation	Drainage canal and water conservation structure	<p>Improvement of drainage.</p> <p>Conservation at the end of dry period for irrigation</p> <p>During monsoon if there is prolong draught, arrangement of flushing of water for supplementary irrigation</p>	<p>To fix water level as per need after discussion with all users</p> <p>To fix water level so that there is no conflicts among the users</p> <p>During supplementary irrigation if there is rain arrangement for drainage so that crops are not inundated.</p> <p>During conservation in post-monsoon period if there is sudden rainfall drainage should be done by opening of gate so that there is no damage to crops</p> <p>Operation calendar to be prepared as per requirement of water infield</p>	<p>Mid July- Mid September</p> <p>Mid-October to mid-April</p>
	Flood Embankment, Drainage Canal and regulator	Flood Embankment, Drainage Canal and regulator	<p>To reduce impact of Flood in SP during pre-monsoon or monsoon periods.</p> <p>To conserve water after monsoon period</p> <p>In case of emergency to conserve water during monsoon</p>	<p>To fix water level as per need after discussion with all water users</p> <p>To fix water level so that there is no conflicts among the users</p> <p>If there is prolong drought during monsoon water should be flushed inside and conserve by gates.</p> <p>During supplementary irrigation if there is rain arrangement for drainage so that crops are not inundated.</p> <p>During conservation in post-</p>	

Category of SP	Subprojects	Infrastructures	Impact	Operation Procedure	Period of operation
			for irrigation	<p>monsoon period if there is sudden rainfall proper drainage should be done so that there is no damage to crops</p> <p>Operation calendar to be prepared as per requirement of water infield</p>	
	Rubber Dam	Rubber Dam, Inlet, Regulator and khal	To supply irrigation water	<p>The Dam is inflated and water is conserved for supplying water for irrigation.</p> <p>During the end of dry period when there is no need of water Dam is deflated so that it does not interfere with flood flow.</p> <p>From reservoir of Dam water is supplied inside the subproject for irrigation. There is arrangement of Regulator/ check structure for supplying regulating flow.</p>	Mid-October to mid- April
CAD subproject	Irrigation CAD Schemes (Open channel system, Buried Pipe System)	Water distribution network by earthen/brick irrigation channel or buried pipe system	Distribution of water for irrigation and extension of the area by regulated water management	<p>To pump from river as per requirement and to arrange water distribution after discussion with the farmers</p> <p>Clarity and consensus of operating procedures as per discussion with the beneficiaries</p> <p>Infrastructures to control water management</p> <p>To collect tax for irrigation based on land holding.</p> <p>To divide irrigation area into rotation units</p> <p>To divide rotation unit into irrigation unit varying from 5 to 15 hectare</p> <p>To form O&M CAD scheme committee involving member from Rotation Unit</p> <p>For operation of Pump set and irrigation System 1-2 system operators to be appointed</p> <p>Cost is to borne by the beneficiaries</p> <p>At downstream of pipe outlet farmers would be expected to organize themselves into irrigation groups to manage water distribution from distribution boxes</p>	Water can be supplied throughout the year if required but generally water is supplied in dry period.

Category of SP	Subprojects	Infrastructures	Impact	Operation Procedure	Period of operation
				along field channels to their field..	

5. Subproject Maintenance

44. Activities involved in maintenance of CAD (buried pipe irrigation) subprojects are not similar to the maintenance activities of other subprojects because the structures are not similar. However, maintenance of CAD subprojects is presented in *Appendix G8-A: Operation and Maintenance of Buried Pipe Irrigation (CAD) Subprojects* along with operation activities and maintenance of infrastructure of other subprojects (Dr, TI, FMD, WC and Rubber Dam) are presented here below.

45. The maintenance works help to keep subproject infrastructure functional. If in any case maintenance works are delayed, the overall damage increases in future. For that reason arrangement for the maintenance is essential immediate after the construction of infrastructure is complete. Usually, the maintenance at the beginning involves minor work to keep the subproject operational, nevertheless if it is not initiated in time the structure may require huge maintenance works afterwards. Maintenance is a regular work throughout the year. It should be carried out in coordination with the operation of infrastructure. Maintenance work is generally divided into three types: (i) regular, (ii) seasonal, and (iii) emergency.

5.1 Regular maintenance

46. Regular maintenance is also known as routine work. If this work is completed regularly, volume of seasonal maintenance reduces. Preventive maintenance continues throughout the year and is implemented when required. Infrastructure should be inspected regularly to check maintenance requirements and accordingly maintenance work is to be undertaken. The following activities are carried out under the routine maintenance.

5.1.1 Regular maintenance of khal

47. The routine or regular khal maintenance works include: (1) weeding and cleaning of hyacinths in khal, and (2) repair of any damage due to raining. Regular maintenance works for khal are shown in Figure 18 and Figure 19.

5.1.2 Regular maintenance of embankment

48. Routine or regular maintenance works of embankment are: 1) repair of rain cuts, (2) repair of rodent dens, (3) repair of ghogs, 4) turfing on the embankment side slopes. Routine maintenance works of embankments are shown in Figure 21 and Figure 22.

5.1.3 Regular maintenance of structure

49. Routine maintenance works of structure are: (1) painting of gates, (2) preventing of leakage of water through gate and fall boards, (3) Earth filling and compaction at wing wall and return wall on subproject side for the erosion or displacement of soil, (4) replacement and repairing of protective works in upstream and downstream side of structure. Regular maintenance works of structure are shown in Figure 37 and Figure 38.

5.2 Periodic maintenance

50. In the end of rainy season, embankment, khal and structure should be visited to undertake maintenance works. After the rainy season visit is very important because major damage occurs during this time. Thus, maintenance works should be undertaken immediately after the rainy season. The seasonal maintenance works include the following.

5.2.1 Periodic maintenance of khal

The periodic maintenance works of khal include: (1) clearing of silt from khal, and (2) repairing of khal slopes. Khal maintenance works undertaken seasonally are shown in Figure 17 and Figure 18.

5.2.2 Periodic maintenance of embankment

51. Periodic maintenance works of embankment include: (1) reconstruction of eroded slope, (2) repair of embankment's side slope due to soil slide; (3) repair of crack of embankment, and 4) repair of erosion on embankment side slopes. Seasonal maintenance works of embankment are shown in Figure 31 to Figure 35.

5.2.3 Periodic maintenance of structure

52. Periodic maintenance works of structure include: (1) repairing of damaged protecting works of structure including filter, (2) repairing of gate and hoisting system and replacement of rubber seal, (3) greasing, (4) painting of gate and (5) repairing of damaged concrete works. Seasonal maintenance activities on structure are shown in Figure 30.

5.2.4 Emergency maintenance (including major seasonal maintenance)

53. Rehabilitation of embankment or structure when caused by sudden tidal surge and flooding is identified as urgent maintenance work. Generally, embankments are designed for 20-year highest flood level. Flooding above this level can damage embankment and structure which if not repaired on an emergency basis may cause huge damage to the subproject structure. Usually, emergency maintenance works are completed from the technical point of view. For this reason, WMCA should carry out the emergency maintenance work with the support of LGED.

Table 5-1: Type of Damage, Impact and Rehabilitation Method

Subproject component	Type of Damage	Adverse impacts	Rectification measures
Flood control embankment	Excessive slide of the crest and side slopes	Water can overflow in the subproject making the SP ineffective for flood control. Makes the embankment vulnerable and interrupts communication if the embankment is used for communication	Rehabilitation of embankment, benching cut of slope at 30 cm height, earth filling by 15 cm layer, compaction, dressing and turfing.
	Side slope cut	Stability of the embankment reduces and subproject becomes vulnerable	Plantation at toe, refrain farmers from slope cut, earth filling from 15 cm layer, compaction and dressing and grass turfing.
	Slide of side slope	Makes the embankment vulnerable and reduces stability	Filing by 15 cm layer, compaction and dressing
	Rutting or grooving by cart	Communication is interrupted, embankment stability may reduce	Earth filling from 15 cm layer, compaction and dressing.
	Ghogs (cavity or hole through the embankment)	Water flow from riverside into the subproject area replaces soil making the hole through the embankment making it vulnerable	Re-excavation of ghogs at 1 m depth on riverside and filling up with clay soil, earth filling by 15 cm layers, compaction and dressing and turfing
	Erosion of side slope from water flow or wave action	Reduces stability of embankment due to reduce slope and make the	To excavate the damage part by steps. Earth filling in 15 cm layer, compaction and re-built as per design, dressing and

		subproject vulnerable	close grass turfing.
	Breaking of Embankment	Subproject activities stop temporarily	The damage portion is to be re-excavated up to a depth of 30 cm in steps with 60 degree angle. Each 15 cm layer is to be compacted separately and re-excavated part is to be filled with suitable earth. River side slope is to be made with mild slope and re-built. After proper dressing close grass turfing to be done.
Drainage Khal	Growth of excessive weeds or aquatic plants and silt deposition	Impedes drainage of water, constricts khal section, reduction of water flow	Removal of weeds and cleaning silt
	Erosion of side slope	Changes of section and interruption in water flow	Rebuilt the khal by reducing side slope
Water Control structure	Leakage through gate	Hampers in water conservation and problem in gate operation	Cleaning of gate groove. Replacement of rubber seal if required
	Erosion of soil at wing wall and return wall on subproject side	Leakage of water through wing wall and return wall side can damage the structure	Earth filling with 15cm layer at the back of wall and compaction
	Partial or complete damage of khal protection work at the downstream of structure	Excessive displacement of khal bank or bed's soil can damage cut-off-wall and make the infrastructure vulnerable	Removal of blocks from side slope for earth filling, compaction, replacing of filter, putting back the blocks again.
Irrigation Canal (Pucca)	Breaking of wall/crack and leakage	Leakage of water	To repair with close supervision
Buried Pipe (Concrete)	Leakage of joint	Problems with distribution of water	To remove the top soil and repair with concrete
Header Tank	Siltation in bed. Stoppage of Silt extraction Pipe	Problem of storage and distribution of water	To clean Tank and Extraction pipe
Alfalfa Valve	Tempering and leakage of water	Due to leakage of excessive water crops of low land is submerged. In addition there is scarcity of water for d/s plots.	To be repaired on emergency basis. If it is not possible to repair should be replaced.
Pump and Electric line	Damage of Pump and Electric Line	Problems with pumping ultimately affect on water supply	Pump is to be repaired as per need. Electricity supply line to be repaired and switch Fuse and other accessories to be kept in store.
Rubber Dam	Deposition of sand and silt over Dam	Problem with inflating Dam.	Before inflating the Dam silts/sand and other debris to be removed without damaging the bag
	Deposition of sand and silt in intake point of pumping Bag	Adequate water will not be available in Pump. Pump may be damaged. Silt may be deposited inside the bag during pumping	Intake point to be cleaned. Servicing of filling pump to be done

6. Plantation and nursing

54. The main objective of plantation along the embankment in subproject is the conservation of environment. Moreover, plantation program is undertaken along the banks of the excavated or re-excavated khal. Initially, plantation is supported by the Project fund. However, beneficiaries and landowners should ensure the plantation, nursing and conservation through the WMCA.



Figure-16 Plantation

7. Maintenance of drainage khal

7.1 Growth of aquatic plants and siltation in khal

55. Description of the damage: Excess growth of weeds and aquatic plants and siltation decrease khal section, reduces water flow and impedes drainage. Water flow reduces with the increase of density of weeds. Weeds create barricade at the downstream of structure's gate. This also changes direction of water flow. As a result water hit khal's slope. In general, excess growth of plants restricts water flow which impedes drainage system (Figure 17).



Figure-17 Drainage Canal

56. Cause of the damage: Low flow of water or reduction of depth of khal.

57. Inspection: Step should be taken for the maintenance of khal through regular inspections. Two types of maintenance works should be carried out. These are regular and seasonal maintenance. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist. The maintenance work should be completed according to the plan before the rainy season.

58. Maintenance system: (a) cleaning of aquatic plan and other debris, (b) regular cleaning of khal and weeding, and cleaning of silt.

7.2 Slide of side slope

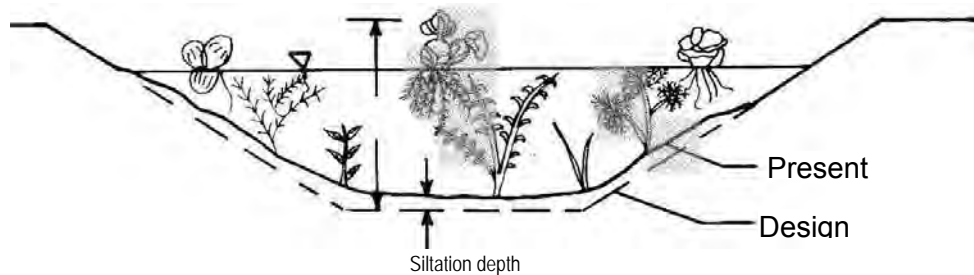


Fig.18: Aquatic plants and siltation

59. Description of the damage: Excessive erosion of khal slope and slide afterward (Figure 2).

60. Cause of the damage: Khal slide slope is not according to the soil type, actual slope is steep than the designed.

61. Inspection: Action should be taken for the maintenance of khal through regular visit and inspection. Maintenance works should be completed in two phases of regular and seasonal. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season.

62. Maintenance system: (a) re-excavation of khal with side slope, and, (b) rebuilding of banks by reducing side slope.

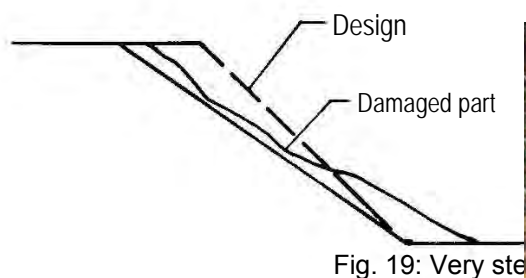


Fig. 19: Very steep



Figure-20 Settlement of Crest and side slope

8. Maintenance of flood control embankment

8.1 Excessive settlement of crest and side.

63. Description of the damage: In many cases there could be settlement of crest and side slope resulting in partial failure embankment to control flooding. Communication along the embankment is disrupted (Figure 20).

64. Cause of the damage: Inadequate compaction of soil during the construction of the embankment or weak soils used for the construction of the embankment.

65. Inspection: Actions should be taken for the maintenance of the embankment through regular inspection. Maintenance works should be carried out in two phases of regular and seasonal. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season.

66. Maintenance system: Embankment should be rehabilitated with the increase of height. During the rehabilitation works settlement of the existing embankment should be taken into account, and the following rehabilitation works should be undertaken:

- a) Uprooting of existing grasses to preserve for re-plantation (1).
- b) Benching of the side slopes in 30 cm height (2).
- c) Earth filling in 15 cm layers and compaction of each layer separately (3).
- d) Dressing of the top of the embankment and grass turfing. Bamboo stick should be used to fix the grass turf with the slope (4).
- e) Planting of new grass seedlings and nursing and watering until the grasses grow up to 10 cm high.

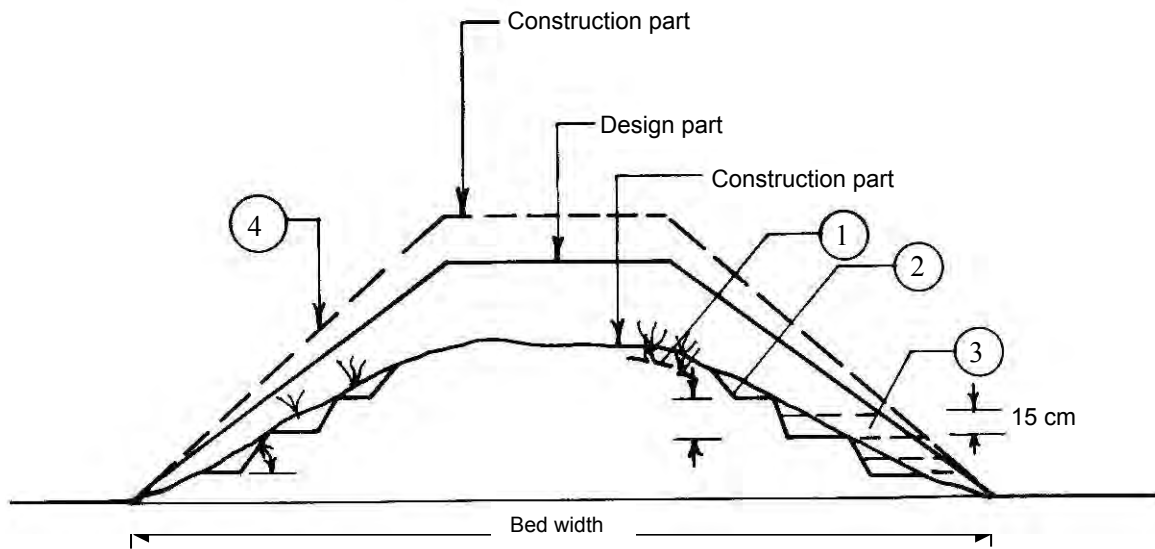


Fig. 21: Excessive subsidence of embankment crest and slope

8.2 Embankment's side slope cut

67. Description of the damage: In many cases cut at the adjacent of toe of the embankment's slope is observed. The extent of cut in many cases is found to be wide (Figure 22).

68. Cause of the damage: Embankment slope cut by farmer to increase size of the plot for dwelling or cultivation.

69. Inspection: Action should be taken for the maintenance of the embankment through regular inspection. Regular and seasonal maintenance works should be undertaken. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season starts.



Figure-22 Cutting of Toe of Embankment

70. Maintenance system: Plantation or installation of concrete pillars at the toe of the embankment, and discouraging of farmers in cutting slopes and undertaking of following rehabilitation works.

- a) Initially, cutting of the toe at an angle of 60° (1).

- b) Earth filling with 15 cm layer and compaction of each layer separately (2).
- c) Dressing and grass turfing on rehabilitated part of the embankment and use of bamboo stick to fix the grass turf with the slope to protect from dislocation (3).
- d) Planting of new grass seedlings and nursing and watering until the grasses grow up to 10 cm high (4)

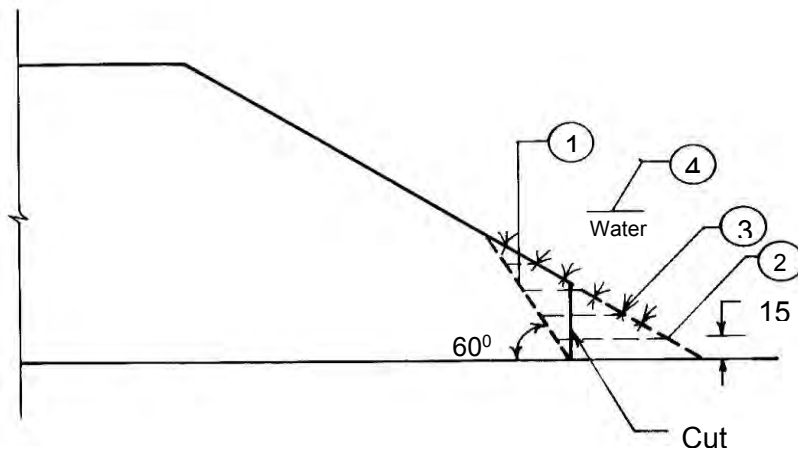


Fig.23: Cutting at side slope of embankment

8.3 Erosion of side slope by water flow

71. Description of the damage: In many cases erosion is observed on the side slopes of the embankment due to water flow (Figure 24).

72. Cause of damage: Water flow with high velocity.

73. Inspection: Appropriate measure should be taken for the maintenance of the embankment through regular inspection. Regular and seasonal maintenance works should be undertaken. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season starts.

74. Maintenance system: If flow is not high, embankment should be rehabilitated with bamboo mat pillars. Tree and weeds should be grown on embankment slopes. If flow is high, temporary protection measure can be taken with brick pitching and setting sand bags. Brick or CC blocks can be placed for long-term protection. The embankment rehabilitation activities include the following.

- a) Initially, the eroded vertical edge should be cut at an angle of 60° with the horizontal line (1).
- b) Bamboo mat fence (torja) should be constructed vertically along the horizontal line of the eroded embankments (2).
- c) Filling of eroded part with 15 cm earth layer and compaction of each layer separately (3).
- d) Dressing of the rehabilitated part of the embankment and grass turfing, use of bamboo stick to fix the grass turf with the slope (4).
- e) Regular nursing and watering until the grasses grow up to 10 cm high.

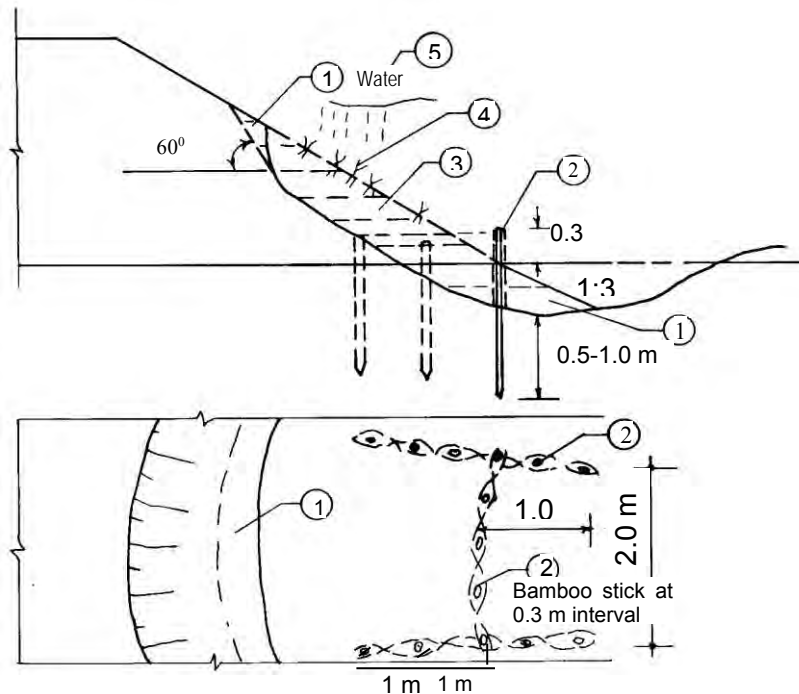


Fig. 24: Erosion of side slope for water flow

8.4 Erosion of side slope by wave action

75. Description of the damage: Flood control embankment can be eroded by wave action. This erosion ultimately damages the embankment (Figure 25).

76. Cause of damage: Generation of strong wave for wind.

77. Inspection: Appropriate measure should be taken for the maintenance of the embankment through regular inspection. Maintenance works should be undertaken in two phases: regular and seasonal. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season starts.

78. Maintenance system: Embankment should be rehabilitated. Brick or CC blocks should be placed to protect from strong wave action. The embankment rehabilitation activities include the following.

- a) Initially, the eroded steep should be cut at an angle of 60° with the horizontal line (1).
- b) Filling of eroded part with 15 cm earth layers and compaction of each layer separately (2).
- c) Dressing of the rehabilitated part of the embankment and grass turfing, use of bamboo stick to fix the grass turf with the slope (3).
- d) Construction of bamboo mat fencing (torja) along the toe (4).
- e) Development of 1 m wide cover planted with dhaincha (*Sesbania*) to reduce erosion of slope on the riverside.

Note: Generally, the sandy soils piled at the bottom of embankment are not suitable to reuse.

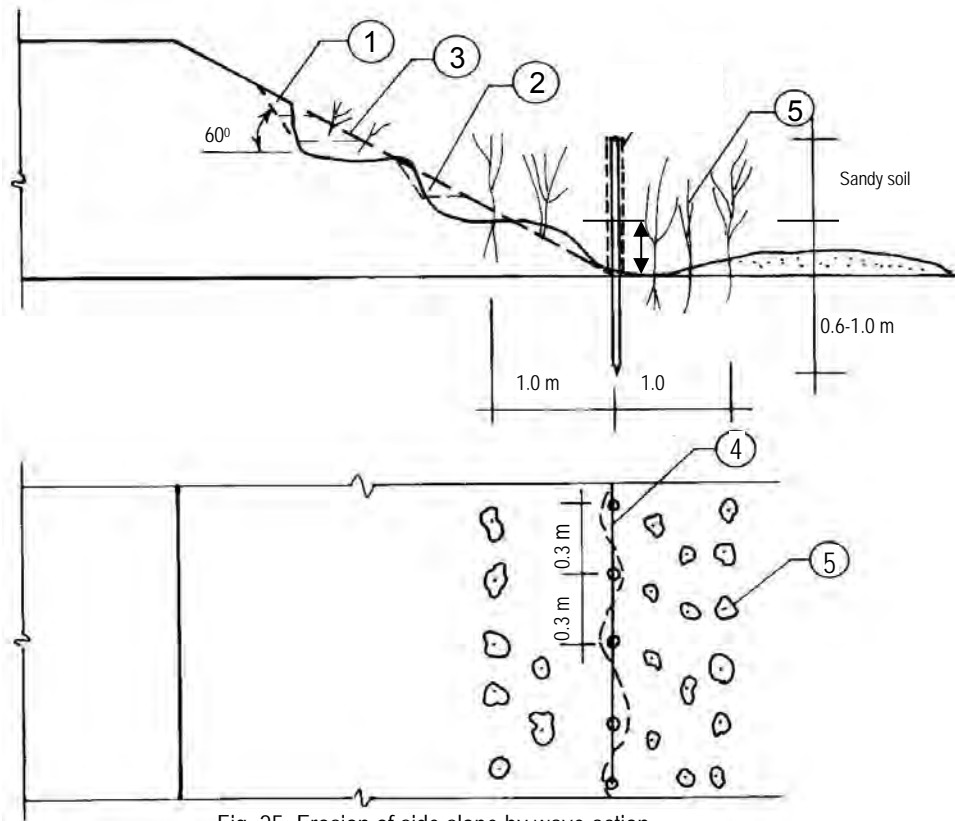


Fig. 25: Erosion of side slope by wave action

8.5 Slide of side slope

79. Description of the damage: Generally, slide of side slope of embankment is observed. Excessive rainfall or faulty construction is the root of subsidence which weakens embedment (Figure 26).

80. Cause of damage: Use of weak and wet soils in the construction of embankment. Improper compaction of soil can cause the subsidence during the rainy season. Too steep side slope can be also the cause of slide.

81. Inspection: Appropriate measure should be taken for the maintenance works through regular inspection. Maintenance works should be carried out in two phases: regular and seasonal. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season.

82. Maintenance system: Embankment should be rehabilitated with less steep slope. The roots of slope erosion should be identified. Care should be taken that sufficient time is allowed to dry wet soils before filling. The embankment rehabilitation activities are as follow.

- a) Eroded soil should be removed (1).
- b) Initially, the vertical part should be cut at an angle of 60° with the horizontal line (2).
- c) Reconstruction of eroded part based on the original design with 15 cm layer and compaction of each layer separately, i.e., recasting of side slope at proper height (3).
- d) Dressing of the new slope and grass turfing, use of bamboo stick to fix the grass turf with the slope (4 and 5).
- e) Regular nursing and watering until the grasses grow up to 10 cm high.

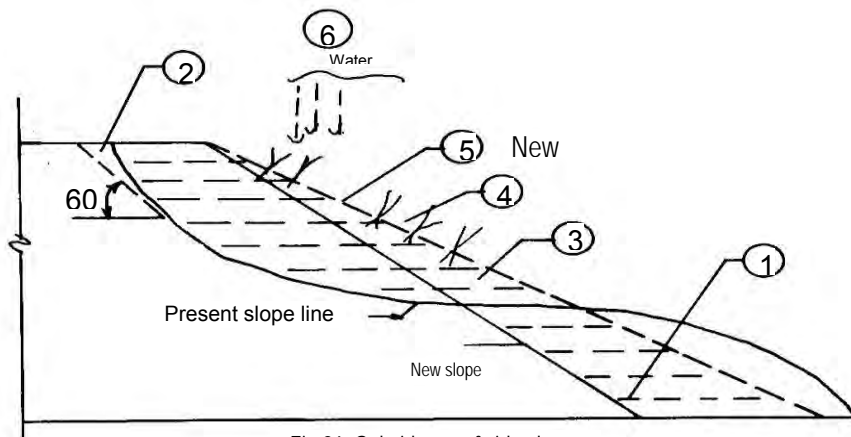


Fig.26: Subsidence of side slope

8.6 Rain cut

83. Description of the damage: In many cases soil at the slope of embankment could be displaced. This may weaken the embankment. The embankment can be damaged if it is not rehabilitated properly (Figure 27).

84. Cause of damage: Heavy rainfall or water flow with high velocity toward lowland can cause the cut

85. Inspection: Appropriate measure should be taken for the maintenance works through regular inspection of the embankment. Maintenance works should be undertaken in two phases: regular and seasonal. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season.



Figure-27 Rain cut

86. Maintenance system: Embankment rehabilitation activities are as follow.

- a) Benching of the damaged part of the embankment and removal of total loose and sandy soils (1).
- b) Reconstruction of eroded part based on the original design with 15 cm layer and compaction of each layer separately.
- c) Dressing of the rehabilitated slope and grass turfing, use of bamboo stick to fix the grass turf with the slope (3).
- d) Regular nursing and watering until the grasses grow up to 10 cm high (4).

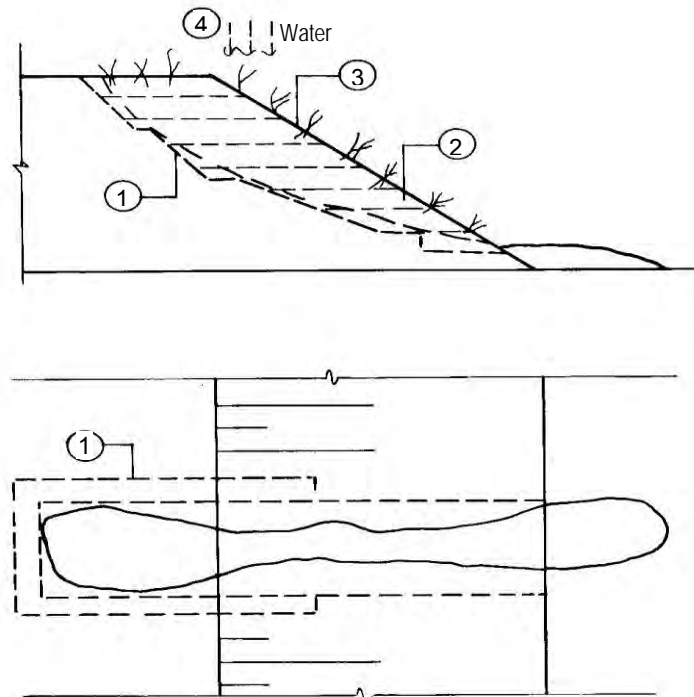


Fig. 28: Rain cut on embankment

8.7 Rutting and hole due to soil displacement

87. Description of the damage: Creation of whole for rutting on embankment, soil displacement or for any other reasons. Water accumulates in the hole and the hole expands due to the traffic damaging the embankment (Figure 29).

88. Cause of damage: Motor vehicle or any animal can create hole on the embankment or its slope if the compaction works are not done properly.



Figure-29 Rut Holes

89. Inspection: Appropriate measure should be taken to carry out the maintenance works through regular inspection of the embankment. Maintenance works should be carried out in two phases: regular and seasonal. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season.

90. Maintenance system: The embankment rehabilitation activities are as follow.

- a) Displacement of loose soils completely (1)
- b) Regular nursing and watering until the grasses grow up to 10 cm high
- c) Filling of the holes with 15 cm layer with required soils and compaction of each layer separately, watering if required (2 and 3)
- d) Dressing and grass turfing.

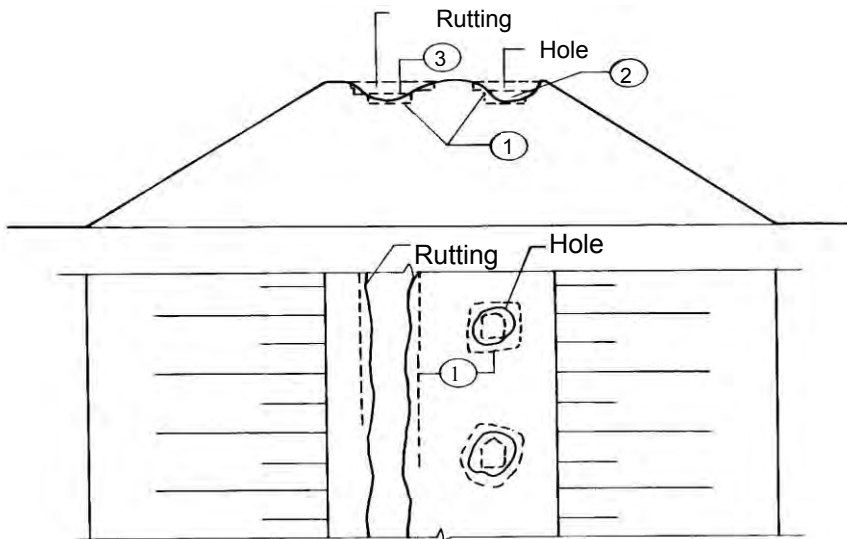


Fig. 30: Rutting and hole

8.8 Ghogs (hole through the embankment)

91. Description of the damage: Rats or any other animal can make hole into the slope extending from the subproject side to the riverside. If ghogs are not repaired timely embankment could be breached due to seepage through it (Figure 31).

92. Cause of damage: Rat or any other animal or inadequate compaction is responsible for it. Moreover, if soil clods are not broken during the construction of embankment may also make ghogs.

93. Inspection: Appropriate measure should be taken to carry out the maintenance works through regular inspection of the embankment. Maintenance works should be carried out in two phases: regular and seasonal. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season.



Figure-31 Ghogs

94. **Maintenance system:** The embankment rehabilitation activities are as follow.

- a) Re-excavation of the ghogs towards river side at a depth of 1m (1).
- b) Filling of the ghogs with mud soils at a depth as much as possible (if possible on both source sides) (2).
- c) Filling of the re-excavated part with appropriate soils with compaction by 15 cm layers (3).
- d) Dressing of the rehabilitated part of the embankment and grass turfing, bamboo sticks should be used to fix the grass turf with the slope.
- e) Regular nursing and watering until the grasses grow up to 10 cm high.

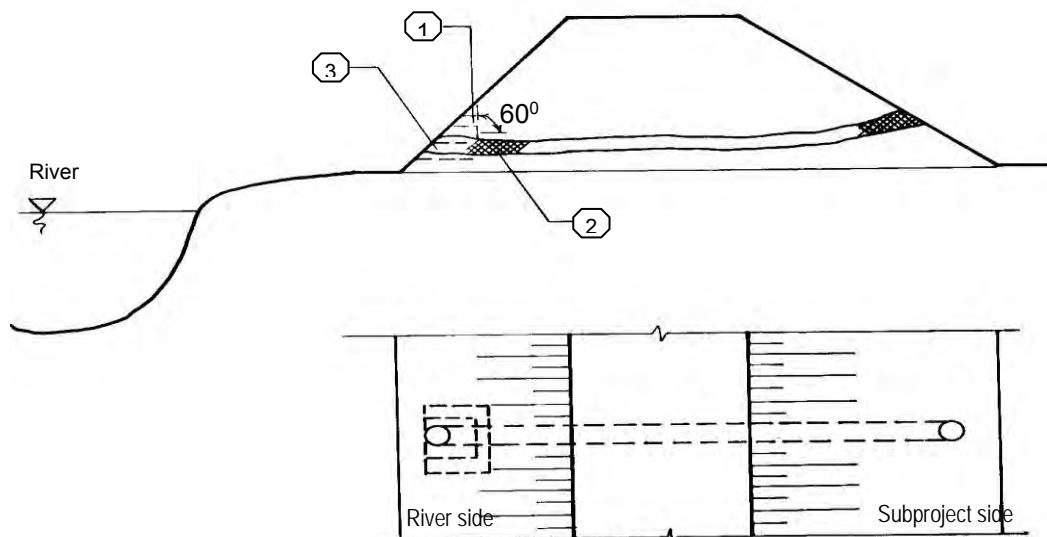


Fig. 32: Ghogs on embankment

8.9 Embankment breaching

95. Description of the damage: Flood control embankment can be breached suddenly for high water pressure or if ghogs are not repaired timely. The size of the breaching gradually enlarges from smaller to bigger. The breaching can cause serious damage to the embankment if it is not repaired immediately (Figure 33).



Figure-33 Embankment Breaching

96. Cause of damage: Sudden floods, flow of floodwater with high velocity, rainfall-runoff, flash floods, rapid rise in flood levels or if embankment is not rehabilitated for long time can cause the breaching.

97. Inspection: Appropriate measure should be taken for the maintenance works through regular inspection of the embankment. If the embankment is repaired during the flow of water, the level of water (high or low) should be determined and accordingly necessary step should be taken. Regular and seasonal maintenance works can reduce the risk of breaching.

98. Maintenance system: Maintenance work of the breached embankment can be three types- (a) repair in dry condition, (b) repair during low flow condition, and (c) repair during high flow condition. The embankment rehabilitation activities are as follow.

- a) Repair in dry condition (Figure 34).
 - Benching at 30 cm depth and at an angle of 60° at the breaching part of the embankment (1).
 - Re-sectioned part should be filled with appropriate type of soils with 15 layers and compaction of each layer separately (2).
 - Leveling of slope on the river side with additional soils (3).
 - Dressing of the upper part and grass turfing on the slope, bamboo sticks should be used to fix the grass turf with the slope.
 - Regular nursing and watering until the new seedlings grow up to 10 cm high.

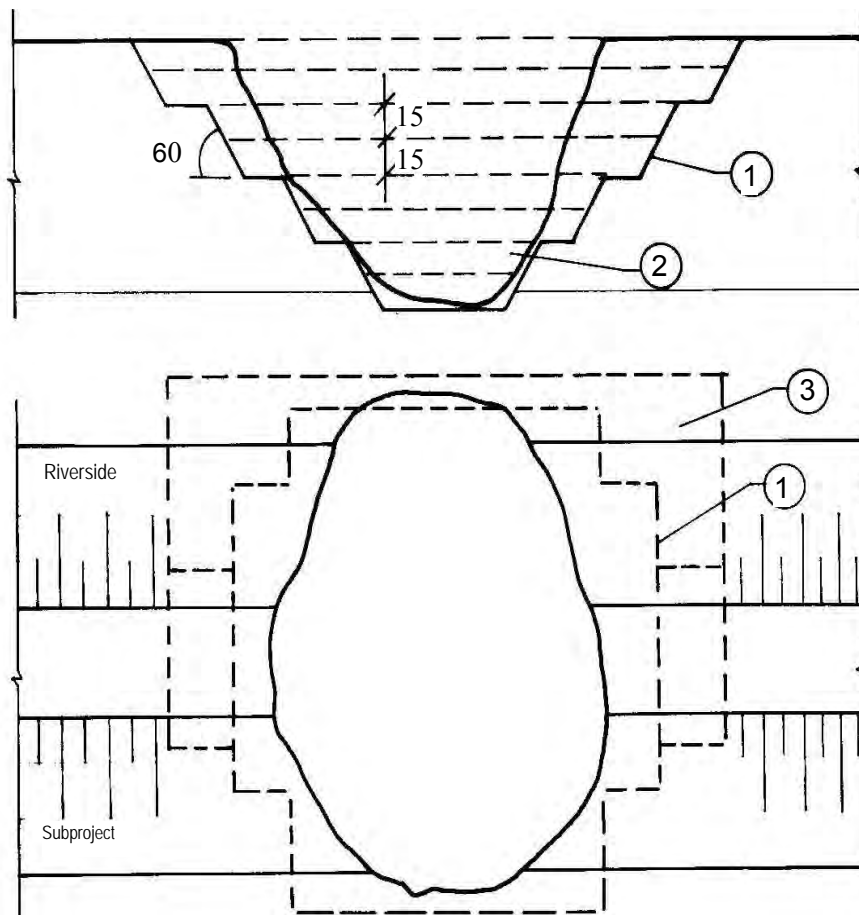


Fig.34: Breaching of embankment: repair in dry condition

b) Repair during water low flow condition (water level difference of < 10 cm) (Figure 35).

- Ring embankment at the breached part with bamboo and torja (1).
- Two rows of bamboo pillars 1 m apart at a height lower than the embankment crest level tied with bamboo mat (torja) (2).
- Water flow should be stopped placing sacks filled with soil and plant residues inside the chamber (3).
- Construction of embankment reducing the side slopes on the river side (4).

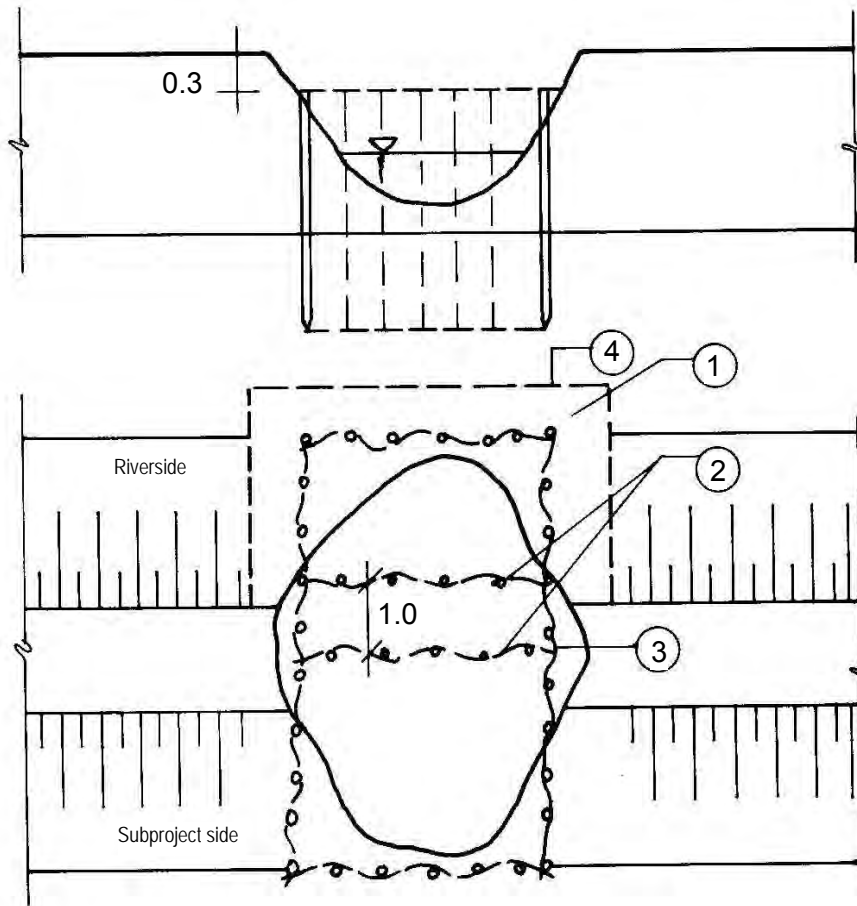


Fig. 35: Repair during low flow condition (water level differences of < 10 cm)

- c) Repair during high flow condition (water level difference of > 10 cm) (Figure 36).
- 2-3 rows of ring embankments on the subproject side with bamboo and bamboo mat (torja) (1).
 - Dumping of sacks filled with soil and brush wood (2).
 - Re-construction of new embankment on dry condition (3).
 - Filling with 15 cm layer and compaction of each layer separately.
 - Dressing of the upper part and grass turving on the slope, fixing of the grass turf with the slope using bamboo sticks.

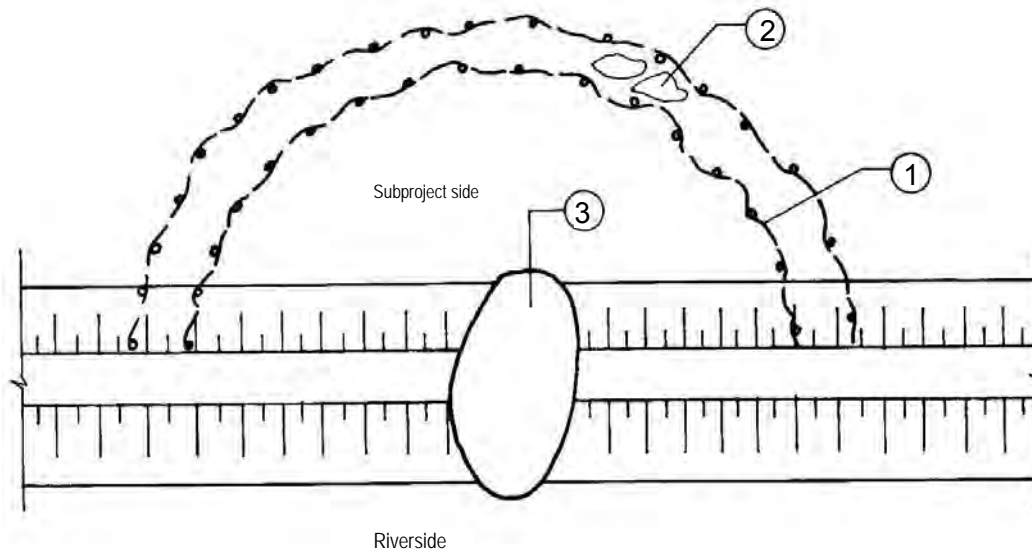


Fig. 36: Breaching of embankment: temporary protection during water flow condition and repair after the rainy season

9. Maintenance of water control structures & Rubber Dams

9.1 Poor drainage for the aquatic weeds

99. Description of the damage: Usually, drainage is impeded for the aquatic plants. Inadequate drainage of rainwater causes adverse impacts in the subproject area.

100. Cause of the damage: Growth of aquatic plants, particularly hyacinth at the gate downstream. Thickness and density increase for not eradicating in time. Water flow is impeded during the operation of the gate and drainage period prolongs. Consequently, depth of water increases on subproject side.



Figure-37 Water Weeds d/S of Structure

101. Inspection: Appropriate measure should be taken for the maintenance works through regular inspection of the embankment. Maintenance works should be carried out in two phases: regular and seasonal. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season.

102. Maintenance system: (a) Preventive and seasonal maintenance works should be undertaken so that aquatic plants cannot grow at the downstream of the gate, (b) Weeds and other residues should be removed in the rainy season.

9.2 Leakage through the gate

103. Description of the damage: Leakage of water through the gate is commonly observed. If the leakage increases volume of conserved water decreases.

104. Cause of the damage: Alignment of the gate is not correct. Partial close of gate for debris at gate groove and breaking of rubber seal.

105. Inspection: Appropriate measure should be taken for the maintenance works through regular inspection of structure. Maintenance works should be carried out in two phases: preventive and seasonal. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season.

106. Maintenance system: Repairing and greasing of gate hoisting system, (b) replacement of rubber season, and (c) cleaning of gate groove.

9.3 Partial damage of protective works at the downstream of structure.

107. Description of the damage: Protective blocks at downstream of structure can be displaced, which ultimately may cause adverse impacts on structure.

108. Cause of the damage: There can be many reasons. For example, size of the structure is smaller than the requirement, for which velocity of water flow is higher and blocks can be dislocated. In addition, if invert level is kept at higher level than that required, gate is not operated properly and opening of gate rapidly during the period when water level is high can also cause damage of protective blocks.



Figure-38 Damage of Protective Works in River Side

109. Inspection: Appropriate measure should be taken for the maintenance works through regular inspection of structure. Maintenance works should be carried out in two phases: routine and seasonal. According to the check list prepared during the inspection after the rainy season, a work plan and budget for maintenance should be prepared and implemented before the rainy season.

110. Maintenance system: (a) no rehabilitation will require when only launching apron is dislocated; (b) compaction with soil and re-construct of the slope will be required when protective blocks are dislocated. Thereafter filter should be placed and put back the blocks on it; (c) if protective blocks are dislocated, concrete apron is under threat and quick erosion is observed in downstream of khal. Then causes should immediately be identified to take rectification measure and arrangement should be made for implementation.

9.4 Displacement of soil at the wing wall and return wall of structure

111. Description of the damage: In many cases soil from the wing wall and return wall of structure is displaced. Excess displacement can cause damage of structure.

112. Cause of the damage: Inadequate compaction of soil at the back of wall and subsidence due to leakage of water during flooding.

113. Inspection: Appropriate measure should be taken for the maintenance works through regular inspection of structure. Maintenance works should be carried out in two phases: routine and seasonal. Particularly, with the inspection after the rainy season a work plan and budget should be prepared for the maintenance work according to the checklist before the rainy season.

114. Maintenance system: Compaction at the back of wall with 15 thick layer using required soil, and (b) placement of filter at the connecting point of wing and return walls.

10. Preparation and implementation of maintenance plan

10.1 Preparation of Priority List

115. To consider annual maintenance program, a priority list of subprojects to be prepared based on importance. A priority list of district to be prepared following prescribed Grading Formats (Exhibit G8-1, Format A, B & C) and based on the marks scored. For getting maximum utilization of the Fund the list should be finalized. Executive Engineer will prepare priority list in his district and will send to regional SE by 30, June. Regional SE after getting the priority list will review the list in monthly meeting and prepare a priority list under his jurisdiction and will send to IWRM by 15, July with recommendation. IWRM will review the priority lists from all the Zonal SE's and will prepare a tentative list of maintenance works for execution and preliminary allotment of fund and will send to Zonal SE and Executive Engineer by 10, August. It is to be noted that maintenance of structure to be given priority but for earthwork clear justification for its implementation should be given.

10.2 Grading

116. Grading can be considered as success of implementation and indicator of future investment. As request for government fund is much higher than fund available, the selection should be done based on grading. Those subprojects will secure Excellent (A) and Good (B) will get priority for the fund. Grade consideration will secure the distribution of fund to achieve optimum benefit.

117. Decision for allotment of fund for subprojects will be taken based on the results of Grading. Those subprojects which will receive 'Excellent' and 'Good' grading will be considered eligible to receive GoB fund. Those subprojects which will receive 'Medium' or 'Bad' Grading will try to rectify their defects and involve themselves in O&M activities. Less priority will be given to weak subprojects as application for fund will increase if fund is provided to weak WMCA's. Grading criteria are given below:

Table 10-1: Subproject Grading and allotment of GoB Fund

Grade	Score	Activities
A	Excellent 80-100	WMCA is performing well and taking responsibility for routine maintenance and any operation. Subproject is likely to be demonstrating sustainable benefits and GoB Funds for maintenance are likely to be well used
B	Good 60-79	WMCA is performing quite well and undertaking (some) routine maintenance. Subproject is likely to be demonstrating sustainable benefits and Gob funds for maintenance are likely to be well used.
C	Medium 40-59	WMCA is performing and may be eligible for GoB financial support but would be advised to address shortcomings first and reapply the following year. Priority in allocating Gob funds for maintenance should be given to A and b grade subprojects.
D	Bad <40	Fundamental problems with WMCA and attitudes to routine O&M need to be addressed before any funding support from GoB

118. After receiving of subprojects list targeted for implementation from IWRM steps for implementation to be taken.

119. For maintenance work first step is to be taken to estimate the quantity of work and prepare budget. To estimate the quantity of works following steps are to be taken:

- After monsoon the O&M sub-committee will visit khal, embankment and structure. This committee will identify the damages in infrastructures during monsoon.
- Following the Exhibit G8-2, Format A, Format B, Format C, Format D, Format E and Format F the committee will assess the damage and prepare possible estimate for rectification of damages as identified (Appendix 18.3)
- Following Exhibit G8-2 the committee will estimate quantity of works and prepare budget
- After preparing budget they will prepare time frame (Exhibit G8-4) of implementation of works.

11. Field level joint inspection of infrastructure

120. Field level inspection is important to know the overall condition of the subproject for the preparation of subproject maintenance plan. LGED officials and WMCA operation and maintenance committee members jointly conduct this inspection twice annually, before and after the rainy season. LGED Assistant Engineer, SSWRDSP-2 and Sub-Assistant Engineer, SSWRDSP, or two Sub-Assistant Engineers from Upazila LGED office and four WMCA O&M sub-committee members will participate in the joint inspection.

11.1 Inspection of infrastructure after the rainy season

121. Objectives – (a) Identification of the damages of various infrastructure and maintenance activities, (b) preparation of estimate and budget, (c) arrangement for fund collection, and (d) preparation of implementation schedule.

11.2 Inspection of structure before the rainy season

122. Objective – (a) Check that the maintenance works which were identified according to the plan are implemented, (b) identification of faults which can make the subproject vulnerable in the rainy season and take appropriate measure for repairing immediately if necessary, and (c) check that gate of the structure function properly and repairing of the gate if there is any fault.

12. Operation & maintenance subcommittee

123. A sub-committee should be formed under WMCA for the implementation of operation and maintenance works in time and properly. This sub-committee will be known as the operation and maintenance committee. The committee should be formed before the completion of infrastructure completes. This committee will be accountable to the WMCA for the operation and maintenance of subproject infrastructure. The sub-committee shall be formed consisting of 9 to 12 members including president, general secretary, treasurer and 6 to 9 members. This committee should include three members from the WMCA management committee and three members among the women. The other members should be among the subproject beneficiary members particularly from the landowners and fishers. However, priority should be given to the personnel who are experienced and interested on supervision and construction works. Priority should be given to include members from "monitoring of construction committee" because they have already gained some experience during the subproject construction. The remaining members should be selected according to the guidelines provided in this chapter. This committee will use the WMCA operation and maintenance fund as require with the approval by the management committee and submit detailed report to the management committee at the end of the year. Matters related the sub-committee formation for the operation and maintenance and fund collection should be included in the bye-laws of every WMCA. If there is any change in WMCA management committee through the election, the operation and maintenance committee can also be

reorganized. However, new operation and maintenance committee should include three members including treasurer among the members of the old committee. The treasurer will be able to provide information about the fund. WMCA will carefully form the operation and maintenance committee according to the following considerations.

- Water users from the major villages should be represented;
- Priority should be given to those who are interested in operation and maintenance works and experienced in motivating.
- Representation of all types of farmers and occupational;
- Maximum number of members should be 12 and should include three members among the WMCA management committee and three members among the women.
- Members of supervision and construction committee can be included in the committee as convenient.

124. WMCA will take initiative for the formation of operation and maintenance committee. The WMCA shall call a general meeting to form the committee according to the considerations as described above. The WMCA Chairman will chair the meeting. The steps involved in the process of committee formation are as follow.

- WMCA will inform chairman/members of the relevant union parishad (council) about the formation of the committee;
- At least two weeks before the place, date and time of the meeting should be decided according to discussion with the local people. The meeting should be held at a convenient place within the subproject area.
- Facilitator and Community Organizer will support WMCA in organizing the meeting.
- WMCA will inform Upazila Engineer about this and Socio-economist and Assistant Engineer at district level will present in the meeting.
- WMCA will distribute a leaflet containing brief description of the subproject and operation and maintenance needs in the meeting supported by the Facilitator and Socio-economist.
- WMCA will arrange to publicize place, date and time of the meeting at a nearest market/bazaar by beating tom-tom or if possible by miking.
- The committee should be formed before the construction of structure completes.
- At least 70 percent of the subproject beneficiaries should be present at the meeting to be organized for the formation of the operation and maintenance committee. If the attendance is found to be less than 70 percent the second meeting should be organized and committee can be formed whatever the attendance is.
- The duration of the sub-committee shall be two years and new committee should be formed when the tenure ends.

125. The committee should be formed with common understanding, unanimously and based on democratic principles. The following discussion should be held at the meeting.

- Subproject infrastructure and function
- Importance of operation and maintenance.
- Responsibility of the committee related to operation and maintenance.

- Role of Government/LGED/WMCA on operation and maintenance.
- Government/LGED/Project's guideline on the collection of fund for operation and maintenance.
- Detailed clarification about the transfer of users' ownership of the infrastructure to the WMCA and matters related to handover.

126. The operation and maintenance sub-committee should be formed according the rules as specified above. Community Organizer, Facilitator and Socio-economist will fully support the WMCA in the whole process. The committee will be announced formally at the meeting. Signature of the participants of the meeting should be collected. The proceeding of the meeting including the list of the elected members should be sent to the Upazila in the following format.

Subproject name and number	Upazila	Date of O&M sub-committee formation	Name of O&M sub-committee members	Occupation (agriculture, fisheries, teaching, etc.)	Designation (President/ secretary/ treasure/ member)

127. Sub-committee activities: The sub-committee will implement all the activities related to the operation and maintenance through the WMCA. The specific responsibilities and functions of the committee will be as follow.

- Updating of beneficiaries list;
- Preparation of beneficiary map;
- Regular inspection of subproject infrastructure and identification of problem;
- Assessment of the volume of the required maintenance works before and after the rainy season and accordingly preparation of budget every year;
- Involvement with all works related to operation and maintenance including planning, implementation and supervision of infrastructure;
- Preparation of work plan for the collection of operation and maintenance fund and support to WMCA for its implementation;
- Implementation of plantation program on the subproject embankment;
- Recommendation for the appointment of operator for the operation of structure;
- Regular submission of report on all activities (progress/problem/proposal) related to subproject operation and maintenance to the WMCA and at the general meeting or at special meeting;
- Communication with WMCA or relevant supporting organization (Project/LGED/NGO/Union parishad/upazila parishad) for technical or any other support;
- Support WMCA in organizing special meeting on maintenance with the inspection of subproject after the rainy season every year and related matter;
- Inform WMCA and Union Parishad for the resolution of conflict if there arises in case of operation.

13. Subproject beneficiary map

128. Preparation of subproject beneficiary map and listing of beneficiaries are interrelated. Beneficiary map is the first step of the process to determine appropriate number of beneficiaries of the area and size of lands according to the types. This map will be useful to easily determine the number of plots owned by beneficiaries and area of the plots. This will help to clearly determine the number of beneficiaries and ownership of land per household. As a result, fund for operation and maintenance can be collected accurately and timely. The map will be new addition of the mauza map of that area (subproject) showing new homesteads and other infrastructure. The map will provide a clear perception about subproject lands and other infrastructure through this type of technical and educational activities.

129. At the beginning all the mauzas in the area should be identified. The subproject may cover one or more mauzas or part of the mauzas. Again, there can more than one sheet for each mauza. This indicates all the sheets of identified mauzas will be required to collect. The collected sheets should be put together. The size of the map will be bigger. Now the subproject index map (showing subproject boundary and other infrastructure) should be placed on this new map. After that, boundary and important infrastructure from the subproject map including main road, khal, water bodies (which are not shown in the new map) should be shown in the new map. Now, the additional or unnecessary part (beyond the subproject boundary) of the map can be ripped. The size of this map will depend on the subproject size. However, by any means the size of the mauza map should not be reduced. Because, the plots shown on the map are small in size and any reduction will make the plots further smaller. Accordingly, it will be difficult to work with the reduced map.

14. Subproject beneficiary list

130. Each subproject should have separate beneficiary list so that beneficiaries can be involved with the operation and maintenance works along with other activities. This will help to collect operation and maintenance fund easily on the basis of the size of the land owned by the individual beneficiaries. Without the accurate beneficiaries' list land ownership can not be determined. This may originate conflict among the beneficiaries and obstruct collection of contribution. Therefore, beneficiary list should be prepared according to the specific procedures.

131. The subproject beneficiary's map can be divided as convenient into several parts. Beneficiaries list should be prepared for each part with visit and in consultation with the local people. The local people should be informed before the visit so that they can be present and express their opinions. The preparation of the list should be started from a particular plot and information from the owner of the adjacent plot should be recorded in the attached format (Exhibit G8-5). Date and time should be fixed for each part of the map. Generally, rural people are acquainted about the area of their neighboring plots. Thus, the attending landowners will provide the information about his plots as well about the plots of his neighbors if they fail to be there. When preparation of list of a part will be complete, next plot will be selected for it following the same procedure. Project's Facilitator, Community Organizer, WMCA and operation and maintenance subcommittee members will participate in the preparation of the list. Two types of list can be prepared from the information to be collected from the beneficiaries. For example:

- Direct beneficiaries.
- Indirect beneficiaries.

132. Direct beneficiaries: The owners of land within the subproject area will only be considered as the direct beneficiaries. The list will again include men and women beneficiaries. If any household is headed by woman in this case her name should be listed. However, in some cases fishers can be the main beneficiaries. Accordingly, the list should be finalized with precise identification of landowners, farmers and fishers.

133. Indirect beneficiaries: There could be many households without owning any agricultural land within the subproject boundary. However, they can be benefitted in one form or another for the subproject implementation. For example, employment generation, increase in crop production, opportunity for marketing, improvement of communication, and so on which may provide more employment opportunity and increase incomes. Indirect beneficiaries may include landless, small businessmen, fishing community (fishers), boatmen and other communities and occupational people. These occupational people should be listed and they can be members of WMCA. However, they are not obligated to provide fees for the operation and maintenance activities excepting fishers in especial case. It can be mentioned that other procedure can be used if this list can not be prepared from the beneficiaries map.

15. Collection of operation and maintenance fund

134. The main objective of the formation of Water Management Cooperative Association (WMCA) in this project is to ensure proper operation and maintenance of infrastructure. Each member has participation or share in WMCA. Moreover, every member contributes monthly to the WMCA saving fund. Again, the members also share the WMCA expenditures through the contribution of fees to miscellaneous funds. The WMCA capital fund is formed through the shares and saving by the members. WMCA makes profit with the investment of this capital and distribute the profits among the members. In this way all the existing cooperative associations in the country operate various activities to create the capital and make profits. In addition to current activities the Water Management Cooperative Association has the responsibility of operation and maintenance of water management infrastructure such as khal, embankment, sluice gate, and regulator and so on. Accordingly, there are some differences in the procedures for fund collection to carry out these activities. Maintenance works can not be undertaken utilizing the fund which will be collected through share and savings.

135. It should be noted that the primary responsibility for the maintenance related works rests with WMCA. Excepting the regular (routine) maintenance, WMCA will undertake minor type of urgent maintenance work from its own fund. However, it can receive support from the government revenue fund for major type of urgent maintenance works. A guideline should be followed to get support for this type of fund. The availability of fund will depend on the WMCA organizational capability and maintenance skill.

136. In general, this fund will be developed primarily with the contribution from among the subproject beneficiaries. Land owners or cultivators within the subproject area and landowners who directly benefit for the subproject infrastructure, or increased income for the fisheries within subproject structure, even he is not a member of the association, is identified as main or direct beneficiaries of subproject in accordance with the Project concept. The operation and maintenance committee to be formed comprising beneficiaries and management committee members will prepare operation and maintenance budget and develop a fund with the fixation of beneficiaries' contribution rate to implement the plan according to the budget.

137. The operation and maintenance fund will be collected from the following sources:

- a) The contribution collected from the beneficiaries before the implementation of the subproject;
- b) Monthly collection of fees to be fixed at certain figure (in addition to share-savings) from beneficiaries members;
- c) Collection of produce at certain rate during the harvest period;
- d) Fixation of rate according to the size of land benefits for flood control and drainage system;
- e) Profit made by the association for the investment on various economic or income generation projects, for example some associations invest on micro-credit, duck-poultry farming and other sector, part of profit margins from this type of investment;
- f) Part of income from fisheries if there is any opportunity for fisheries in the subproject area;
- g) Contribution from any local organization, local government institution;
- h) Income from plantation within the subproject area;
- i) Collection of fees at a fixed rate from the beneficiary if he irrigates water from the khal within the subproject area; and
- j) Fund allocated by the government.

138. The beneficiaries should deposit the total fund on account of “contribution” before the small scale water resources subproject work starts. However, this contribution fund will be not be used directly for the implementation of structure. A reserved fund will be created using this fund for the purpose of operation and maintenance according to the following procedures:

- a) Fixed-deposit of the beneficiary contribution to a schedule bank account opened by Executive Engineer and WMCA President/Secretary. The name of the account should be “Operation and Maintenance Fund”. The receipt of this account will be retained by the Executive Engineer until the handover of the subproject.
- b) This fund will not be required to use in the first three years, therefore fixed-deposit at the primary stage will be useful.
- c) At the end of the construction works, an account in the name of “Operation and Maintenance Fund (Operating account)” should be opened for the maintenance in a schedule bank with joint signatures of WMCA President and Secretary. Fund from beneficiaries should be collected and deposited to this account for the maintenance. In this saving account cumulative amount of interest obtained during handover and later on annual interest from fixed deposit should be directly placed. Instruction should be given regarding issue during opening of fixed deposit account with Upazila Engineer and WMCA.
- d) In the subproject handover meeting, the receipt of the fixed-deposit should be handed over to transfer the fund excluding the total profit in the saving account operated in the name of “operation and maintenance fund” jointly by Upazila Engineer and WMCA President/Secretary.
- e) Operation and maintenance sub-committee will collect fund every year from the beneficiaries after the preparation of annual maintenance budget. However, effort should be made to raise the fund collection equal to the contribution money as the maintenance cost can increase later compared to that at the beginning.

139. Generally, the annual operation and maintenance fund is collected at a rate of 3% of the total cost for earthworks and 1.5% of the total cost for the construction of structure. Although volume of maintenance works will not be bigger in 1 to 2 years in the completed subproject, equal amount of contribution should be collected from the beneficiaries. The fund should be collected on the basis of the proportion of land owned by the individual

beneficiaries. Specially, step should be taken particularly during the harvest season as an appropriate time for the fund collection.

140. The rate of contribution or fees should be decided from the beneficiaries list in the general meeting. Fees can be better decided on the basis of per acre of land benefits. Later, subproject can be divided into several small parts. One member from each of WMCA management committee and operation and maintenance committee can be given responsibility of each part of the subproject area for the collection of fund. They should discuss about the fund collection with the beneficiary farmers in a meeting. Produce for the maintenance fund can be collected corresponding with the crop season, at least twice in the year (mid April to mid May and mid December to mid January).

16. Management of operation and maintenance fund

141. An account should be opened in the name of "Operation and Maintenance Fund (Operating Account)" in a schedule bank with joint signatures of WMCA President/ General Secretary. Fund can be withdrawn from the account operated in the name of "operation and maintenance fund" over the joint signature by WMCA President and General Secretary. This fund can be used for the operation and maintenance of subproject infrastructure and on account of remuneration for gate operator. The fund should be used according to the following guidelines:

- a) The total contribution by the beneficiaries should be fixed-deposited in joint account opened by Executive Engineer and WMCA before work starts (1st fixed account).
- b) During the handing-over the total amount of 1st fixed account excluding profit should be deposited in another joint account opened by the Upazila Engineer and WMCA. This fixed account will be considered as reserved O&M fund (2nd fixed account).
- c) After the completion of the subproject, beneficiaries list should be updated by the WMCA during the period of joint operation and maintenance (before the handing over) to collect contribution from the beneficiaries for the operation and maintenance. This can be discussed in a general meeting before the collection of contribution.
- d) A joint savings account (Operating Account) is to be opened jointly by WMCA, President and Secretary to deposit the collected fund. Accumulated interest obtained from 1st fixed deposit account during handover and subsequent annual interest to be directly placed in this account. This fund can be used for routine maintenance and remuneration for gate operator etc can be paid. Instruction should be given during opening of 2nd fixed deposit account.
- e) To bring the existing WMCAs under the same system following steps to be taken. For those subprojects showing maturity and capability in O&M and institutional activities, Upazila Engineer can send recommendation to Executive Engineer to transfer the reserved fund account to existing O&M account (Operating Account). Executive Engineer will thoroughly review and examine the case. If the recommendation from UZ Engineer is found justified Executive Engineer will give instruction to transfer the total reserved fund of the WMCA to O&M Account (Operating Account). Gradually all the O&M Account (Operating) will come under same type fund management.

17. Guidelines for the use of government fund

142. The responsibility for the regular activities related to maintenance of subproject infrastructure rests with WMCA. However, additional fund may be required to repair the subproject infrastructure for the damage by natural disaster. This fund can be available from the government. The fund to be available from the government should be used according to the following guidelines:

- a) This fund can be used for the repair of infrastructure which have been properly operated and regularly maintained through the beneficiaries' contribution in the subprojects constructed under small scale water resources project, rubber dam and other water resources infrastructure/scheme implemented by LGED.
- b) This fund can be used only for the major type of seasonal and emergency maintenance works.
- c) Priority will be given to the subprojects in which WMCAs have been collecting operation and maintenance fund regularly and participating actively in operation and regular maintenance and minor type of emergency maintenance works.
- d) Priority will be given to the subprojects where the WMCAs spend a share of profits from the income generation activities for operation and maintenance of infrastructure.
- e) The fund can be available for the repair of the embankments which are on the brink of breaching for the proximity of river. However, the fund can not be used if there will any possibility of breaching of the embankment every year. Thus, the nature of river and possibility of breaching of the embankment should be checked before the utilization of fund.
- f) There should be a joint fixed account in the name of "operation and maintenance fund" by Upazila Engineer and WMCA.
- g) There should be a joint savings account opened in the name of "operation and maintenance fund (operating account)" by WMCA chairman and secretary.
- h) At the rate of 10 percent for up to Taka 100,000 and at the rate of 5% for the additional amount should be deposited in "operation and maintenance fund" account before the maintenance works start using the government fund. This could be later used for regular maintenance work.
- i) The fund will be available in the subprojects where the beneficiaries have received the ownership of subproject infrastructure for their use, but fund for silt removal can not be given within three years from handover.
- j) During silt removal a bed block should be constructed at every km of khal (see Exhibit G8-8A)

143. Before the maintenance work starts, operation and maintenance committee should discuss with the WMCA management committee for the allocation of budget and approval. Every year, the operation and maintenance committee should submit a report after the completion of maintenance work. The WMCA will call a general meeting to present the report to the beneficiaries. The operation and maintenance committee will be responsible jointly with WMCA management committee for the implementation of maintenance work.

17.1 Preparation of estimate for maintenance

144. The initial requirement for the preparation of maintenance plan and budget is the assessment of the volume of maintenance work and estimate. Primarily, LGED and WMCA shall jointly visit every khal, embankment after the rainy season and assess the extent of damage. An estimate and budget should be prepared with the determination of applicable rehabilitation system for the annual maintenance of flood control embankment, drainage khal and water control structure.

- a) **Regular (routine) maintenance:** Estimate of this type of maintenance work will jointly be prepared by Upazila Engineer office and WMCA and will be implemented by WMCA. Bill of implemented work will be paid from WMCA own fund.
- b) **Periodic and emergency work:** In this case Upazila Engineer Office and WMCA will jointly visit the infrastructure and prepared the estimate and will send to district Executive Engineer,

LGED. Executive Engineer considering the field condition will make a priority list and will send to Zonal Superintending Engineer with recommendation. Estimate sent by Executive Engineer will be scrutinized by Zonal SE office and estimated amount above 10 lac will be sent to IWRM Unit for approval. Estimate below Tk. 10 lac will be approved by Zonal SE.

- c) For allotment of GoB fund there should be O&M plan. Moreover, additional money should be deposited in O&M fund within January at the following rate every year depending on amount of allotment of fund.
- At the rate of 10 percent for up to Taka 100,000.
 - At the rate of 5 percent for the amount in addition to Taka 100,000.
- d) The cost for the removal of silt will be provided from the government fund. However, according to silt removing guidelines, the WMCA will identify the khal in O&M plan earlier for the removal of silt and complete the work with 50 percent of the total cost or volunteer labor. Fund will be available from the emergency fund to complete the remaining part.
- e) The portion of khal from where the WMCA needs to remove silt should be specified in the O&M plan and shown in map by chainage. Usually, it is observed that WMCA changes the decision on the removal of silt. As a result problem arises on the use of O&M fund. Thus, decision on the removal of silt should be taken with the discussion among the beneficiaries and finalized during the preparation of O&M plan.
- f) No cash will be available from the emergency fund for the procurement of gate or any of its part when stolen.
- g) The gate painting, greasing, hoist system servicing, smaller rain cult repairs, embankment grass turfing and minor emergency works should be completed as a routine responsibility of WMCA and to be done from WMCA own fund. The description of these works should be sent in the specific format.
- h) Emergency fund will be available once for change of rubber seal later on WMCA will use their own fund for changing rubber seal.
- i) Two copies of the maintenance work estimate using the fund from irrigation infrastructure should be sent for approval.

17.2 Fund allocation

145. Fund from the government revenue budget will be distributed to the district level by the IWRM Unit at LGED headquarters for the maintenance of subprojects constructed under the small scale water resources development sector according to the specific principles. It should be noted that the allocation against a district will depend on the actual requirement in the district, WMCA maintenance skill which will be decided reasonably in consideration with the actual situation. The following should be considered with importance for the allocation of this fund to the district levels:

- Priority list as per grading.
- To give priority to maintenance of structure. For maintenance of earthwork proper justification should be given.
- If earlier allotment is taken from GoB fund, a report on amount of fund received and statement of expenditure to be provided.
- Role of WMCA in maintenance work and fund collection.

17.3 Preparation of annual procurement plan

146. Annual procurement should be prepared by the Executive Engineer of the relevant district for the current financial year within two weeks after the availability of fund from

“irrigation infrastructure” account for the repair of small scale water resources infrastructure. The plan should be sent to the IWRM Unit.

147. For this O&M plan should be reached at IWRM Unit from the field within 30 November. This will be reviewed to provide fund within December. In continuity, annual procurement plan should be received by the IWRM Unit as latest as second week of January.

17.4 Implementation method

148. In course of activities related to water resources infrastructure operation and maintenance opportunity for the participation of local people or LCS should be identified in supporting the poverty reduction effort by the Project. The following works with a total cost of 500,000 or less can be carried out through the LCS.

- a) Block making, leveling, dressing and placement with filter material;
- b) Gate repair, replacement of rubber seal, increase of gate height, repairing of shaft and hoist system, changes of skin plate, and so on;
- c) Repairing of parts of regulator; and
- d) Gauge marking and painting on regulator.

149. The number of LCS member should be 10-25 for earthworks and 5-15 for pucca works. The pucca work with a cost of more than Taka 500,000 can not be divided to distribute among the LCSs. In accordance of this decision, water resources infrastructure operation and maintenance works should be carried out. District Executive Engineer should prepare annual procurement plan within 2 (two) weeks after the receiving fund in each financial year to send at LGED headquarters for approval. Step should be taken for implementation after the approval. LCS management guidelines should be followed for the LCS formation and payments.

150. Moreover, relating to the LCS formation the section number 69 in the LCS management guidelines will be considered as corrected according to the subsection 18.6.1 in the present guidelines.

151. WMCA and LGED jointly implement the subproject operation and maintenance works. The maintenance of structure has to be implemented following the Public Procurement Regulations 2008 through contractor and LCS. The total earthworks have to be carried out by LCS. However, the structure maintenance can be implemented by LCS if the cost limits within Taka 500,000 as mentioned in subsection 18.6.1. For works costing above Taka 500,000 should be implemented through contractor as in the past following public procurement rule 2008.

152. Upazila Engineer will discuss concerned WMCA members for the preparation of a realistic estimate to implement the work as described in 18.6.1 above through LCS. The estimate has to be sent to district Executive Engineer. The Executive Engineer will thoroughly review the estimate for approval and will send to zonal Superintending Engineer for approval.

153. The general maintenance works have to be completed within May. Only turfing work can be carried out between May end to mid June so that grass can grow well from the rainfall. WMCA O&M committee will oversee the maintenance works and on behalf of LGED Upazila Engineer, Upazila Assistant Engineer, Upazila Sub-Assistant Engineer/CS and technical person engaged in Small Scale Water Resources Project will directly be involved in this activity. District Socio-economist and those involved in institutional development work in district and upazila (CPO, Socio-economist, CA/ Facilitator) be involved for the monitoring of this work.

154. It can be mentioned here that after handing-over, WMCA will carry out the joint inspection with LGED twice in a year (before and after the rainy season). Later WMCA with its own initiative will inspect structure twice in a year and send a report on it to the IWRM.

The specified format for this inspection has to be sent to every WMCA from IWRM Unit. WMCA can take help from LGED field level officials for this work.

155. Progress report: The report on the progress this work should be sent within fifth day of each month.

156. Upazila Engineer shall be fully responsible for the satisfactory progress of work maintaining the quality of all works at upazila level. Executive Engineer will regularly supervise the maintenance activities in the district and ensure proper implementation of this program. LGED zonal Superintending Engineer will review the progress and implementation quality. He will provide necessary instruction at the field level.

157. Completion of work: The entire work should be completed before 30 April. In consideration with this a work plan should be sent to IWRM Unit with operation and maintenance plan for the implementation of this work.

17.5 Quality control of maintenance work

158. Especial attention should be given to the quality control of maintenance work. If there is any negligence in maintaining quality the concerned officer/staff will be responsible for it. Use of hammer for the compaction of earth works on embankment and in the rehabilitation of embankment with 15 mm layers should be observed at the field level and the result should be known with laboratory test. Bill should not be paid if the work is found to be unsatisfactory. O&M committee will supervise the work on behalf of WMCA for quality control and complain to LGED if necessary. In this regard, the booklet on "Role of subproject construction monitoring committee" (2010), published by Integrated Water Management Unit should be followed.

17.6 Bill preparation and payment

a) Incase of regular Maintenance:

159. The offices at Upazila level will record the work implemented under WMCA in MB (measurement book) specified by the government and accordingly prepare bill and submit to the Upazila Engineer's office with the signature by WMCA chairman/ secretary and operation and maintenance committee chairman/secretary for the payment of bill. Upazila Engineer will check the bill according to the rules and pay it. The bill should be paid through bank check jointly signed by WMCA chairman and secretary from the bank account operated in the name of "Operation and Maintenance Fund". All records regarding quantity of works and bill will be preserved by WMCA for audit.

b) Incase of emergency and periodic maintenance:

160. Bill for periodic and emergency maintenance to be prepared after joint inspection by WMCA and official in-charge in Upazila level, will entered in Govt. measurement book (MB), will prepared the bill in bill form and will send to Upazila Engineer with recommendation. Upazila Engineer/Assistant Upazila Engineer will review and examine the bill as per rules and regulation and will send to Executive Engineer with recommendation who after scrutiny and review will arrange for payment.

18. Subproject handover process

18.1 Handover process of subprojects implemented under SSWRD Projects

161. It can be mentioned that participation of beneficiary people is the characteristic of the Small Scale Water Resources Development Project. Because the ownership for the use of completed subprojects is handed over to the beneficiaries and beneficiary people take the responsibility for subproject maintenance. Thus, on principle the matter of subproject handover process should be undertaken on the basis of participation (Exhibit G8-9). The

process which to be followed to handover the subprojects implemented under the Small Scale Water Resources Development Project is described below.

A. Completion of subproject construction works and joint inspection

162. As soon as Contractor completes construction of all works of the subproject, Executive Engineer will undertake a joint inspection of the subproject with Upazila Engineer, Project Consultants, Management Committee of WMCA including Construction Monitoring Committee and O&M Subcommittee and the Contractor. The joint inspection will particularly focus on construction of hydraulic structures and their gates – their easy and flawless lifting and closing and leak-proof water sealing and appropriate painting, greasing, etc. For hydraulic structures, if defects/outstanding works are such that the structures cannot be put to immediate use due to those, the defects/outstanding works shall be grouped as “immediate rectification works” and must be rectified by the Contractor immediately making the structures fully fit-for-use. Dates for completion of these rectifications will be agreed and recorded in the inspection report. Any other defects/ outstanding works to be rectified in the maintenance (defects liability) period shall also be identified and their committed dates of rectification, decided based on functioning of the structures, shall be mentioned in the joint inspection report.

163. The Contractor will undertake the required “immediate rectification works” first and complete them within the specified dates. These works will again be inspected and if found properly done, the works can be considered substantially complete and the handover process will be undertaken.

B. Handover ceremony

164. The subproject handover process should be completed in a public-function. WMCA will be the organizer of this function. LGED will provide all support to the WMCA. The Deputy Commissioner / Zonal Superintending Engineer, LGED/ /Upazila Chairman/ Upazila Nirbahi Officer or any other respected elite person can be invited as chief guest in this function. In addition, the district and upazila officers of agriculture, cooperative, fisheries, land administration, Water Development Board and other government agencies should be invited. WMCA will ensure all arrangement so that the WMCA general members can participate in the public-function spontaneously. The program of the function as usual should be informed to the project headquarter.

165. Purpose of SSWRD projects in general, description and objectives of the subproject, procedure of O&M and purpose of the handover agreement will be disseminated in the meeting and the handover deed will be signed in the meeting in public..

C. Joint O&M

166. The 1-year LGED-WMCA joint O&M of the subproject will commence from the date of hand over of the subproject to the WMCA. For this, Executive Engineer will circulate a notification about the joint operation and maintenance. In this notification he will clearly describe the specific responsibilities of Upazila Engineer and WMCA operation and maintenance sub-committee and mention when the tenure of joint operation and maintenance will end. The Upazila Engineer’s responsibilities will include arranging training for the operation and maintenance sub-committee, preparation of operation and maintenance budget and fund collection.

167. The main activities of the joint O&M period are as follow:

- Training of O&M sub-committee on operation and maintenance by LGED.
- Inspect infrastructure jointly and prepared operation and maintenance plan.
- Start joint operation and maintenance and rectify all the infrastructure faults.

- Opening of joint operation and maintenance account (Operating Account) and collection of fund from various sources.
- O&M Subcommittee prepare for undertaking O&M responsibilities by themselves
- Contractor performs all defects liability maintenance during this period.

19. Responsibilities of different local governments in subproject O&M

168. Different bodies are involved in the implementation of operation and maintenance activities of subproject infrastructure in various ways. Although the main responsibilities with the beneficiaries. Still many individuals/groups/organizations have numerous responsibilities to provide technical, financial, management and related supports. In fact it is not that other works will not be implemented by the concerned individual/bodies beyond those described here. The responsibilities of the concerns' are separately described below.

19.1 LGED

169. LGED will provide all the technical supports and guidance in subproject operation and maintenance. The extent of responsibilities of the officer and staff at district and upazila levels involved in subproject operation and maintenance are given below.

170. Superintending Engineer (Region): By optimum utilization of water resource to increase agriculture and fish production and thereby with an aim to socio-economic development O&M aspect of SSWRDP, duties of Superintending Engineer is as follows:

- Monitoring of O&M of Small Scale Water Resources Subproject and activities of WMCA.
- Review the priority list as received from district and prepare a priority list for onward transmission to IWRMU
- Each year from list of subprojects finally selected by IWRMU for O&M, approval of estimate and implementation to be awarded costing less than Tk. 10 lac.
- Estimates which cost over Tk. 10 lac to be send to IWRMU for approval.
- To review the O&M activities in monthly meeting and provide proper guidance to Executive Engineer and Upazila Engineer in this regard.
- To monitor that in O&M activities environment, gender development, climate change, national water policy and guidelines of participatory water management are followed.
- Provide guidance and collect information whether handed over of SPs and O&M activities of handed over subprojects being monitored properly by district and upazila officials.
- To ensure that annual O&M activities are being completed as per plan and report of progress and other related issues to IWRMU unit.
- To ensure the quality of works and inspects at least 10% of works and submit the report to IWRMU
- To resolve the conflicts in O&M activities.

171. **Executive Engineer:** According to the Project arrangements overall responsibilities related to operation and maintenance rest with Executive Engineer. The responsibilities of Executive Engineer for the operation and maintenance activities in general will be as follow:

- Each year to prepare a priority list for maintenance works from Grading list and other related information sent by Upazila offices and will ensure to send list to Zonal Superintending Engineer office with recommendation.
- Ensure to send the maintenance plan and estimate prepares as per O&M Guidelines to Zonal Office.
- Ensure quality of maintenance works and examine measurement of at least 15% of works.
- To co-ordinate all works regarding O&M.
- To ensure that WMCA/O&M sub-committees to receive technical guideline from LGED.
- To provide advice to Upazila Engineer/Project Staff regarding O&M work.
- Monitor all works of O&M under his district and send monthly report to Head Quarter with overall evaluation of the work and provide necessary recommendation.
- Take initiative in Hand over of sub-projects. In this regard will give necessary advice to Upazila Engineer.
- To take step of cooperation from other agency in the field of operation and maintenance work.
- To ensure that all works are being done following the O&M Guidelines published from IWRMU

172. **Senior Assistant Engineer:** Planning implementation and operation and maintenance program is carried out with the technical mater of all subproject activities in consideration with socio-economic, agriculture, environment, fisheries and other matters. In the context of implementation of operation & maintenance activities duties and responsibilities of Senior Assistant Engineer are as follows:

- To assist Executive Engineer to prepare list of priority subproject as per plan of the district.
- To ensure quality of works examine at list 25 percent of works.
- To assist Executive Engineer to monitor O&M works of Upazila Engineers.
- To provide technical Assistance and advise WMCA/O&M Sub-committee.
- To take instigative and assist Upazila Engineer if required.
- To ensure use of O&M guideline in O&M activities.
- To co-ordinate each year after monsoon for measurement of the volume of subproject maintenance works, prepare estimate and co-ordinate implementation works as per plan.
- To give proper guidance for O&M works as per plan and carefully monitor quality of works.
- To monitor O&M works to take initiative for sending to head quarter.
- To ensure works in O&M works socio-economic, climate change, gender and development aspect are been followed.
- Arrange training for the person (operator) responsible for O&M and provide technical guidance and assists in this matter if any problems arise.

173. **Assistant Engineer:** For O&M activities for Small Scale Water Resources subproject duties of Assistant Engineer, in District Executive Engineer LGED is as follows:

- To assist in planning and O&M activities considering Socio-economic, Agriculture, Environment, Fishery and Climate Change aspects.
- Following O&M Guidelines to select Subprojects for maintenance activities.
- To co-ordinate in each year following monsoon measurement of the volume of subproject maintenance work, preparation of estimate and implementation works.
- To ensure quality of maintenance works of different schemes.
- To assist in handover process of subprojects.
- To assist in WMCA and other project officials for preparing monthly report and inform Executive Engineer in this regards.
- To attend in different meetings regarding O&M issues and provide advice in technical matters and assist in O&M activities.
- Arrange training for the person (operator) responsible for operation and maintenance and provide technical guidelines and assist in this matter.
- To ensure quality of works and examine at least 25% of works in field.
- Collection of data and information regarding O&M, prepare data base and management of the same.
- To provide technical guidelines to WMCA as and when required.

174. **Sociologist/Socio-economist:** The Project Socio-economist at district level is responsible for overall socio-economic activities in the subproject. His major responsibilities on subproject operation and maintenance in particular are described below:

- To Ensure that Socio-economic activities in consider in O&M works;
- Take overall initiative to assist beneficiaries about the formation of subproject WMCA/sub-committee/village committee;
- Arrange training for WMCA//sub-committee and participate as trainer;
- Integration of activities related to preparation of subproject beneficiary map and beneficiary list;
- Integration of activities related to fund collection from the beneficiaries for the operation and maintenance provide necessary guidance to the committee responsible for this activities;
- Integration of activities of the Facilitators responsible operation and maintenance works and accordingly provide necessary guidance/assistance;
- Take necessary step for strengthening of operation and maintenance activities as well as subproject socio-economic activities; and
- Preparation of monthly report regularly collecting information regarding O&M activities from Upazila levels.

175. **Upazila Engineer:** Upazila Engineer will involve himself in all activities related to O&M of subprojects. Duties of Upazila Engineer in brief will be:

- Ensure that for O&M the prescribed grading format field up with information will be sent to Executive Engineer office in due time.

- To coordinate in technical aspect in planning, design, implementation and O&M activities of Small Scale Water Resources subprojects.
- To assist technical aspect regarding O&M to concern WMCA/O&M sub-committee.
- To provide proper guidance to Sub-Assistant Engineer, Surveyor and Community Organizer regarding O&M activities.
- To Ensure quality of works and examine measurement of at least 50% of works.
- To take initiative in handing over of subproject in ceremonial manner and coordinate with XEN regarding the same.
- To implement the O&M works as per instruction from District Executive Engineer, Zonal Superintending Engineer and Head Office.
- To ensure that in O&M works socio-economic, climate change, Gender and Development aspects are followed:
- Provide necessary direction and assistance to the project's other officials/staff and integrate their works.

176. **Upazila Assistant Engineer:** In consideration with subproject operation and maintenance and other technical matters and assistance to the subproject works the responsibilities are as follow:

Measurement of the volume of maintenance works of subproject infrastructure after the rainy season each year, preparation of estimate and provide assistance in implementation;

to coordinate with Upazila Engineer for maintenance each year;

To maintain the quality control of works and check measurement of at least 50% of works.

Assist in quality control of subproject operation and maintenance works;

Guidance to the WMCA/sub-committee on the subproject operation and maintenance;

Assist WMCA and Project's other officials in preparing monthly report including other;

Assist Upazila engineer in taking initiative to handover the subproject;

Attend meeting at various level on matters related to operation and maintenance and provide guidance and assistance on technical and institutional matters;

Take initiative for the execution of necessary instructions as given by the Executive Engineer and headquarters;

Provide training to the person responsible for operation of regulator/slucie gate and necessary step to resolve any technical problem when arises; and

Provide necessary directions and assistance on this to the Project's other official/staff and integrate their works.

177. **Sub-Assistant Engineer:** The duties of the Sub-Assistant Engineer at Upazila Engineer office are as follow:

With the involvement of subproject activities supply of all types of engineering data and survey such as plane table, geodetic, and leveling information;

Attend sub-soil boring and supply underground water level and land elevation data;

Clear conception about structural design and to maintain quality of work, supervise implementation works. This supervision is also applicable for earthworks;

Involvement with technical matter of operation and maintenance and provide assistance to the WMCA in the implementation of such work;

Provide technical instruction in consultation with Upazila Engineer to the WMCA if any problem arises on the operation and maintenance;

Ensure soil compaction of flood control embankment in order to maintain 90% dry density;

Ensure dressing and turfing on the side slopes of the flood control embankment;

Assist Upazila Engineer according to his instruction in resolving any problem related to subproject.

Ensure quality control of the work ensure entering measurement book of works completed and prepare bill and submit to Upazila Engineer.

To collect all information regarding O&M in database.

178. **Community Organizer:** Community Organizer at Upazila level is responsible for providing support to socio-economic activities in various projects of LGED. To perform all activities regarding O&M, the Community Organizer will have following responsibilities:

- With Project's other official ensure formation of WMCA/sub-committee/village committee and provide necessary support according to the plan;
- Preparation of beneficiaries list and take initiative for the collection of operation and maintenance fund;
- Ensure communication between officer/staff at Upazila level and subproject WMCA and other committee to provide support on operation and maintenance activities;
- Initially as an observer attend the training courses on operation and maintenance for WMCA/sub-committee/village committee and later participate as a trainer;
- Assist Project's other officials in the preparation of monthly report and later participate to implement those activities on own initiative.
- Preparation of regular report on operation and maintenance;
- Motivation and inspiration of beneficiaries for the collection of operation and maintenance fund including providing of necessary suggestions;
- Assist in resolution of conflict among the WMCA/sub-committee/village committee;
- Preparation of regular (monthly) report on the operation and maintenance;
- Identification of problem/limitation and so on and preparation of necessary and potential recommendations; and
- Assist WMCA/committee in preparing subproject beneficiaries map and list.
- Assist in the preparation of household list in subproject area, preparation of list of beneficiaries and affected person and co-ordinate in arranging meeting in village or para for raising awareness on O&M.
- To help WMCA in all respect for signing implementation agreement.
- During implementation to help WMCA/LGED in forming LCS groups.

- After completion of infrastructure assist in capacity development of WMCA for O&M activities before & after handover.
- Monitoring of WMCA office and accounting activities.
- To assist increasing share & saving of WMCA.
- To ensure holding of weekly meeting and monthly meeting of Management committee.
- To monitor the micro-credit activities of WMCA and update the information.
- To assist WMCA in preparation of poverty reduction plan and implementation of the same.

19.2 Water Management Cooperative Association (WMCA)

179. WMCA is the authorized user right of all infrastructure constructed, re-constructed and rehabilitated by the Small Scale Water Resources Development Project. WMCA also contribute a small percentage for O&M before implementation of the subproject and play an important role in controlling quality of construction works. On the basis of implementation agreement before the beginning of project activities and ownership agreement after the completion of construction between LGED and WMCA, the latter will be responsible for the operation and maintenance of infrastructure.

180. The main objective of the WMCA is operation and maintenance and to complete it correctly. WMCA should give attention to the following for the proper operation and maintenance.

General:

- Formation of operation and maintenance sub-committee.
- Raise the O&M issue in monthly meeting as an agenda.
- Arrangement to deposit profit from micro-credit operation and the income generation activities to operation and maintenance fund.
- Responsible for sending expenditure for O&M by WMCA from its own fund and through volunteer labor.
- Contact to LGED for emergency maintenance.
- Collection of O&M fund for regular and minor emergency maintenance every year.
- Identification of sources for the collection of O&M fund.

Operation:

- Before the rainy season ensure that gate can be raised properly.
- Appointment of get operator.
- Preparation of operator calendar in water conservation subproject and operation of the gat according to the time of water requirements.
- Recording of water level during gate operation in register.
- Arrangement of meeting to resolve conflict if arises among the beneficiaries during the irrigation water supply.

Maintenance:

- Field inspection of infrastructure after and before the rainy season each year.
- Preparation of maintenance plan and budget on the basis of inspection after the rainy season.
- Identification routine and emergency works.
- Attention to the timely completion of maintenance works.
- Work as observer to check that emergency work with the use of government fund is carried out properly.
- Initiative for removing water weeds as routine activity and removal of silt with volunteer labor.
- Take initiative to arrange a special meeting on operation and maintenance.
- Presentation of details of maintenance works carried at a special meeting so that beneficiaries can be involved in operation and maintenance.
- Duties of gate operator employed by WMCA
- Ensure security of water control structure (sluice gate/regulator etc.);
- Operation of gate as decided by WMCA/ operation and maintenance sub-committee;
- Use of fallboard (where applicable) with care and store it on own responsibility;
- If structure found to be vulnerable for flooding or any other reason, inform WMCA/O&M sub-committee about it immediately and take necessary action; and
- Recording of water level.

19.3 Union Parishad

181. Union Parishad will be involved from the beginning of subproject proposal to operation and maintenance in any way. Concerned Union Parishad Chairman will play an important role on the subproject operation and maintenance activities. The major responsibilities are:

- Active participation in organizing of people for WMCA formation activities;
- Identification of conflict if arises any on structure operation and provide possible support to WMCA/sub-committee to resolve it;
- Support to the preparation of beneficiary map, beneficiaries list (collection of mauza map and all information);
- Support to collection of required contribution fund for the operation and maintenance;
- Participation in training organized by the Project;
- Allocation of fund by the Union Parishad for emergency repair;
- Communication to Upazila Development Committee and other organizations for emergency repairing and provide support about it.
- To include representative of WMCA as member of UDCC.

19.4 Upazila Parishad: Conflict resolution committee

182. If there arises any conflict between beneficiaries and affected persons on subproject operation and maintenance, the aggrieved party will first attempt to solve the matter with direct discussion between both parties. If it is not resolved through the discussion, then

resolve the dispute at the Upazila Parishad according to the notification (Exhibit G8-10) issued by the Local Government Division (No. Pro:Au:-2/Pani-5/2001/418 (2347), dated: 23-04-2002 Eng).

Table 19-1: Annual maintenance Activities, duties and time-table

Sl. No.	Activities	Duties	Time-table
	All information regarding Small Scale Water Development Sub-project (Filled-up Grading Format) to be sent to Executive Engineer of concerned district	Concerned Upazila Engineer, Assistant Upazila Engineer and Sub-Assistant Engineer	Each year within 31 May
	Preparation of priority list of schemes based on data as received from Upazila and send the same to Zonal Superintending Engineer	District Executive Engineer	Each year within 30 June
	From the priority list and information as received from district preparation of maintenance requirement and priority list for sending to Superintending Engineer, O&M	Zonal Superintending Engineer	Each year within 15 July
	Reviewing the priority list as received from Zonal Superintending Engineer, IWRMU will finalize the priority list with tentative allotment of fund and send to Zonal Superintending Engineer and district Executive Engineer offices	IWRM Unit	Each year within 10 April
	As per final list Upazila Engineer will visit the subprojects and send the estimates to District Executive Engineer	Upazila Engineer	Each year within 30 September
	To review the estimates as available from Upazila Engineer and send to Zonal Superintending Engineer	District Executive Engineer	Each year within 15 October
	To review and approved the estimates (for each subprojects up to cost of Tk. 10 lac by Superintending Engineer and above Tk. 10 lac the estimate to be sent to Superintending Engineer, IWRMU	Zonal Superintending Engineer	Each year within 31 October
	Review the estimates and approved estimates above Tk. 10 lac	Superintending Engineer (O&M), IWRM Unit	Each year within 10 November
	Formation of LCS Groups	Concerned Upazila Engineer and Sub-Assistant Engineer	Each year within 15 November
	Call Tender (Where required)	District Executive Engineer	Each year within 15 November
	Contract agreement with LCS/Selected contractor	District Executive Engineer	Each year within 15 December
	Start of Works	District Executive Engineer/Upazila Engineer	Each year within 1 January
	Closing of Works	Earth Work	District Executive Engineer/Upazila Engineer
		Pucca/Concrete Works	District Executive Engineer/Upazila Engineer
	To send monthly progress of work to LGED Headquarter and Zonal Superintending Engineer	Executive Engineer	monthly progress of work by 5 of next month
	Regular monitoring of implementation of maintenance work and for implementation of scheme with high quality to visit scheme and provide guidance to district and upazila level	Zonal Superintending Engineer/ Additional Chief Engineer (Division)	Regularly
	To send completion report to headquarter	Executive Engineer	Each year within 10 June

Note: To verify the estimate Sub-Assistant Engineer will check 100%, Upazila Engineer/Upzaila Assistant Engineer 50%, Senior Assistant Engineer/Assistant Engineer from Executive Engineer Office 25%, Executive Engineer 15% and Zonal Superintending Engineer will visit 10% of schemes.

20. Operation and Maintenance Plan

The format of Operation and Maintenance Plan is shown in the Exhibit G8-13.

EXHIBIT G8-1, FORMAT-A GRADING FOR ALLOTMENT FROM "GOB FUND FOR MAINTENANCE OF IRRIGATION STRUCTURES"

Type of Subproject: Uncontrolled water flow, grading indicators

Sl. No.	Indicators	Marks	Marks Obtain	Remarks
Institutional Grading= Total marks =30				
1.	Members of Subproject: (HH= 70% to 80%=4, 81-90%=5, above 90%=6	6		
2.	Meeting of WMCA Mangement Committee for last 12 months (If no meeting =0, 1 to 4 meetings=2, 5-8=3, 9 or above meeting =5)	5		
3.	Capital of WMCA (Share+ Savings +Others) total: (Capital/person below 150=2,150- 300=4 above 300=7	7		
4.	Type of Mangement committee? Adhoc committee (Date expired)=0, Ad-hock=3, Elected= 6	6		
5.	Women member percentage less than 33%=0, 33 to 40%=3, above 40%=6	6		
Total		30		
O&M Grading=Total No.=70				
6.	What is the percentage of last year collected O&M Fund with respect to O&M contribution collected before implementation. (Up to 15%= 2, 16- 30%=3, and 31 or above =5)	5		
7.	Last year O&M fund collected below tk100 /member=1, 101 -200=3, 201 and above	5		
8.	In the last year for routine maintenance how many man days works have been done on voluntary basis. (Up to 10 days=2, 10-20; and above 20 days=5)	5		
9.	In routine maintenance how many days work done? Up to 10 days work=1;10to 20 days=3; 21 or above working days	5		
10.	Participation in Joint walkthrough by members of O&M in monsoon or pre-monsoon periods (Only pre-monsoon=3, Both pre and post monsoon=6)	6		
11.	Whether there is monitoring of activities of O&M and reviewed in Mangement Committee's meeting ? No=0, Yes=4	4		
12.	Whether WMCA maintains in the Register all information of maintenance works done out of WMCA fund. (No=0, Irregularly=3 (no=0,irregularly=3, regular basis=5)	5		
13.	Whether in annual meeting there is discussion about O&M Fund? (No=0, Yes=5)	5		
14.	Whether there is annual O&M Plan prepared? No=0, Yes=5	5		
15.	If there is any entrepreneur activities by WMCA, no=0,cost effective=3 and worth followed=5	5		
16.	Involvent of WMCA in routine works: a) Is there is siltation in bed Major=2, Minor=5 b) Whether there are water weeds Major=2, Minor=1 c) Whether bank of canal is well maintained? No=2, yes=5 d).Whether there is reference lined section? No=0, Yes=5	20		
Total		70		

Signature :

Name :

Designation:

Signature :

Name :

Designation:

Signature :

Name :

Designation:

EXHIBIT G8-1, FORMAT-B GRADING FOR ALLOTMENT FROM "GOB FUND FOR MAINTENANCE OF IRRIGATION STRUCTURES"

Type of Subproject: Controlled water flow, grading indicators

Sl. No.	Indicators	Marks	Marks Obtain	Remarks
Institutional Grading= Total marks =30				
1.	Members of Subproject: (HH= 70% to 80%=4, 81-90%=5, above 90%=6	6		
2.	Meeting of WMCA Mangement committee for last 12 months (If no meeting =0, 1 to 4 meetings=2 , 5-8=3, 9 or above meeting =5)	5		
3.	Capital of WMCA (Share+ Savings +Others) total: (Capital/person below 150=2,150- 300=4 above 300=7	7		
4.	Type of Mangement committee? Adhoc committee (Date expired)=0, Ad-hock=3, Elected= 6	6		
5.	Women member percentage less than 33%=0, 33 to 40%=3, above 40%=6	6		
Total		30		
O&M Grading=Total No.=70				
6.	What is the percentage of last year collected O&M Fund with respect to O&M contribution collected before implementation. (Up to 15%= 2, 16- 30%=3, and 31 or above =5)	5		
7.	Last year O&M fund collected below tk100 /member=1, 101 -200=3, 201 and above	5		
8.	In the last year for routine maintenance how many man days works have been done on voluntary basis. (Up to 10 days=2, 10-20; and above 20 days=5)	5		
9.	In routine maintenance how many days work done? Up to 10 days work=1;10to 20 days=3; 21 or above working days	5		
10.	Participation in Joint walkthrough by members of O&M in monsoon or pre-monsoon periods (Only pre-monsoon=3, Both pre and post monsoon=6)	6		
11.	Whether there is monitoring of activities of O&M and reviewed in Management Committee's meeting ? No=0, Yes=4	4		
12.	Whether WMCA maintains in the Register all information of maintenance works done out of WMCA fund. (No=0, Irregularly=3 (no=0,irregularly=3, regular basis=5)	5		
13.	Whether in annual meeting there is discussion about O&M Fund? (No=0, Yes=5)	5		
14.	Whether there is annual O&M Plan prepared? No=0, Yes=5	5		
15.	If there is any entrepreneur activities by WMCA, no=0,cost effective=3 and worth followed=5	5		
16.	Involment of WMCA in routine works: a) Is there is siltation in bed Major=1, Minor=3 b) Whether there are water weedsMajor=1, Minor=3 c)Whether there is rain cuts embankment ? Yes=0., No=3, yes d).Whether weeds from embankment cleared? No=0, Yes=3 e).Is there reference lined section in bed : No=0, Yes=3 f). Whether hoist system is properly greased? NO=0, Yes=3 g). Whether water level gauges are painted? No=0, Yes=2.	20		
Total		70		

Signature :

Name :

Designation:

Signature :

Name :

Designation:

Signature :

Name :

Designation:

EXHIBIT G8-1, FORMAT-C GRADING FOR ALLOTMENT FROM "GOB FUND FOR MAINTENANCE OF IRRIGATION STRUCTURES"

Type of Subproject: Underground pipe irrigation supply, grading indicators

Sl. No.	Indicators	Marks	Marks Obtain	Remarks
Institutional Grading= Total marks =30				
1.	Members of Subproject: (HH= 70% to 80%=4, 81-90%=5, above 90%=6	6		
2.	Meeting of WMCA Management committee for last 12 months (If no meeting =0, 1 to 4 meetings=2 , 5-8=3, 9 or above meeting =5)	5		
3.	Capital of WMCA (Share+ Savings +Others) total: (Capital/person below 150=2,150- 300=4 above 300=7	7		
4.	Type of Mangement committee? Adhoc committee (Date expired)=0, Ad-hock=3, Elected= 6	6		
5.	Women member percentage less than 33%=0, 33 to 40%=3, above 40%=6	6		
Total		30		
O&M Grading=Total No.=70				
6.	What is the percentage of last year collected O&M Fund with respect to O&M contribution collected before implementation. (Up to 15%= 2, 16- 30%=3, and 31 or above =5)	5		
7.	Last year O&M fund collected below tk100 /member=1, 101 -200=3, 201 and above	5		
8.	In the last year for routine maintenance how many man days works have been done on voluntary basis. (Up to 10 days=2, 10-20; and above 20 days=5)	5		
9.	In routine maintenance how many days work done? Up to 10 days work=1;10to 20 days=3; 21 or above working days	5		
10.	Participation in Joint walkthrough by members of O&M in monsoon or pre-monsoon periods (Only pre-monsoon=3, Both pre and post monsoon=6)	6		
11.	Whether there is monitoring of activities of O&M and reviewed in Management Committee's meeting ? No=0, Yes=4	4		
12.	Whether WMCA maintains in the Register all information of maintenance works done out of WMCA fund. (No=0, Irregularly=3 (no=0,irregularly=3, regular basis=5)	5		
13.	Whether in annual meeting there is discussion about O&M Fund? (No=0, Yes=5)	5		
14.	Whether there is annual O&M Plan prepared? No=0, Yes=5	5		
15.	If there is any entrepreneur activities by WMCA, no=0,cost effective=3 and worth followed=5	5		
16.	Involvent of WMCA in routine works: a) Condition of Pumping Equipments: Medium=2, Good=4 b) Whether WMCA has own Pump No=0, Yes=4 c)Whether alternate arrangements for power; No=0, Yes=4 d) Is there is tempering of Alfalfa Valve? Yes=0, No=.2 e). Condition of field channel Bad=2. Good=6	20		
Total		70		

Signature :

Name :

Designation:

Signature :

Name :

Designation:

Signature :

Name :

Designation:

EXHIBIT G8-2, FORMAT-A WATER DRAINAGE/CONSERVATION KHAL MAINTENANCE FORMAT

Subproject name: _____ SP No.: _____ Name of khal: _____ Place: _____ Date: _____

Date of Inspection	Observed part StartEnd	Damaged part	Description of Damage	Description of maintenance works	Quantity of work (cubic meter/ square meter)	Rate	Cost (Tk) (6×7)	Date of maintenance work completion
1	2	3	4	5	6	7	8	9
Total								

For WMCA (Chairman/Secretary)

Signature :

Name :

Designation:

For LGED

1. Signature :

Name :

Designation: Sub-Assistant Engineer (Seal)

2. Signature :

Name :

Designation: Upazila Engineer (Seal)

EXHIBIT G8-2, FORMAT-B FLOOD EMBANKMENT MAINTENANCE FORMAT

Subproject name: _____ SP No.: _____ Name of khal: _____ Place: _____ Date: _____

Date of Inspection	Observed part StartEnd	Damaged part	Description of damage	Description of maintenance works	Quantity of work (cubic meter/ square meter)	Rate (cubic meter)	Grass plantation Turfing (square meter)	Rate (square meter)	Cost (Tk) (6 ×7+8×9)	Date of work completion
1	2	3	4	5	6	7	8	9	10	11
Total										

For WMCA (Chairman/Secretary)

Signature :

Name :

Designation:

For LGED

1. Signature :

Name :

Designation: Sub-Assistant Engineer (Seal)

2. Signature :

Name :

Designation: Upazila Engineer (Seal)

EXHIBIT G8-2, FORMAT-C WATER CONTROL STRUCTURE MAINTENANCE FORMAT

Subproject name:

SP No.:

Name of khal:

Place:

Date:

Date of Inspection	Name and size of observed structure	Description of damage	Description of maintenance works	Rate	Cost (Tk)	Date of completion of maintenance works
1	2	3	4	5	6	7
Total						

For WMCA (Chairman/Secretary)

Signature :

Name :

Designation:

For LGED

1. Signature :

Name :

Designation: Sub-Assistant Engineer (Seal)

2. Signature :

Name :

Designation: Upazila Engineer (Seal)

EXHIBIT G8-2, FORMAT-D**WATER DISTRIBUTION PIPE LINE AND PIPE SYSTEM STRUCTURE
MAINTENANCE FORMAT**(uPVC pipe line /Concrete pipe line / Header Tank / Riser / Escape / Washout

Subproject name:

SP No.:

Upazila:

District:

Date:

Item	Date of Inspection	Name of structure & size	Description of Damage	Description of maintenance works	Quantity of work (cubic meter/ square meter)	Rate	Cost (Tk) (6×7)	Date of maintenance work completion
1	2	3	4	5	6	7	8	9
uPVC pipe line								
Concrete pipe line								
Header Tank								
Riser								
Escape								
Washout								
Total								

For WMCA (Chairman/Secretary)

Signature :

Name :

Designation:

For LGED

1. Signature :

Name :

Designation: Sub-Assistant Engineer (Seal)

2. Signature :

Name :

Designation: Upazila Engineer (Seal)

EXHIBIT G8-2, FORMAT-E REFERENCE LINED SECTION MAINTENANCE FORMAT

Subproject name:

SP No.:

Upazila:

District:

Date:

Date of Inspection	Name of Khal & Location of Lined Section	Description of Damage	Description of maintenance works	Quantities of Works (cubic meter/sq meter)	Rate	Cost (Tk) (5x6) or LS	Date of completion of maintenance works
1	2	3	4	5	6	7	8
Total							

For WMCA (Chairman/Secretary)

Signature:

Name :

Designation:

For LGED

1. Signature:

Name :

Designation: Sub-Assistant Engineer (Seal)

2. Signature:

Name :

Designation: Upazila Engineer (Seal)

EXHIBIT G8-2, FORMAT-F WMCA OFFICE MAINTENANCE FORMAT

Subproject name: _____ SP No.: _____ Location: _____ Upazila: _____ District: _____

Date of Inspection	Description of damage	Description of maintenance works	Quantities of Works (cubic meter/sq meter)	Rate	Cost (Tk) (4x5) or LS	Date of completion of maintenance works
1	2	3	4	5	6	7
Total						

For WMCA (Chairman/Secretary)

Signature: _____

Name : _____

Designation: _____

For LGED

1. Signature: _____

Name : _____

Designation: Sub-Assistant Engineer (Seal)

2. Signature: _____

Name : _____

Designation: Upazila Engineer (Seal)

EXHIBIT G8-3 ESTIMATE OF MAINTENANCE WORKS AND BUDGET PREPARATION FORMAT

(Khal/Embankment/Structure/CAD)

Upazila:

District:

Date:

Subproject Name:

SP No.:

Sl. No.	Structure	Type of work	Unit	Quantity	Rate	Estimated cost	Routine	Periodic	Emergency
1	Khal	Cleaning of silt	M ³						
		Cleaning of aquatic plants	M ²						
		Other	-						
2	Embankment	Earth work	M ³						
		Turfing	M ²						
		Other	-						
3	Structure (Regulator, sluice, water conservation structure)	Gate painting	LS						
		Greasing	LS						
		Replacement of protective blocks	LS						
		Replacement of rubber seal							
4	CAD								
	Water supply pipe line	Earthwork	M ³						
		Repair of Leackage	LS						
	Header Tank	Cleaning	LS						
		Repair of Regulating Gates	LS						
	Riser	Repair of Alfafal Valve/Change	LS						
	Escape	Repair if needed	LS						
Washout	Repair if needed	LS							
5.	WMCA Office	Painting of Wall	LS						
		Repair of door, window & painting	LS						
6.	Reference Lined Section	Siltation							
		Replacement of side slope brick/settlement of bricks							
7.	Others								
Total									

For WMCA (Chairman/Secretary)

Signature:

Name :

Designation:

For LGED

1. Signature:

Name :

Designation: Sub-Assistant Engineer
(Seal)

2. Signature:

Name :

Designation: Upazila Engineer (Seal)

EXHIBIT G8-4 MAINTENANCE WORKS IMPLEMENTATION PROGRAM

Subproject Name:

SP No.:

Upazila:

District:

Date:

Time	November				December				January				February				March				April			
Infrastructure	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Khal																								
Embankment																								
Structure																								
Water Supply Pipe Line																								
Pipe System Structure																								
Pumping Plant & Control Panel																								
Riser																								
Escape																								
Wash Out																								
Lined Section																								
WMCA Office																								

Khal Maintenance	Riser Maintenance
Embankment Maintenance	Escape Maintenance
Structure Maintenance	Washout Maintenance
Water Supply Pipe Line Maintenance	Lined Section Maintenance
Pipe System Structure Maintenance	WMCA Office Maintenance
Pumping Plant & Control Panel Maintenance	

For (Chairman/Secretary) Signature: Name: Designation:	WMCA 1. Signature: Name: Designation: Sub-Assistant Engineer (Seal)	For LGED 2. Signature: Name: Designation: Sub-Assistant Engineer (Seal)
		Upazila

All maintenance works should be completed within 30 April.

EXHIBIT G8-5 BENEFICIARIES' LIST PREPARATION FORMAT

Subproject Name:

Upazila:

Subproject No.:

District:

SL. No.	Name of beneficiary	Father's & Mother's name	Village	Union	Area of land within subproject (acre)					Comment
					High	Medium	Low	Not cultivated (pond, forest, etc.)	Total	
Total										

For WMCA (Chairman/Secretary)

Signature:

Name :

Designation:

For LGED

1. Signature :

Name :

Designation: Sub-Assistant Engineer
(Seal)

2. Signature :

Name :

Designation: Upazila Engineer (Seal)

EXHIBIT G8-6 SUBPROJECT OPERATION CALENDAR

(Water Conservation and Drainage)

Subproject Name:

Subproject No.:

Name of structure:

Year:

Month		Cropping Pattern	Vertical Gate		Purpose	Water level (m)		Remarks
			Open	Close		SP side	River side	
Mid April- Mid May	Baishak		●		Drainage for harvesting			
Mid May- Mid June	Jaishta		↓			Entry of natural fish fingerlings		
Mid June- Mid July	Ashar	T Aman	●	●	Irrigation for Transplantation of Aman crops			
Mid July- Mid August	Shrabon		↓	↓		Drainage		
Mid August- Mid September	Bhadra		●	●	Water conservation for Supplementary Irrigation to T Aman Crops			
Mid September- Mid October	Ashwin		↓	↓		Water conservation for Boro cultivation		
Mid October- Mid November	Kartik		●	●				
Mid November- Mid December	Agrahayan		↓	↓		HYV Boro		
Mid December- Mid January	Poush							
Mid January- Mid February	Magh							
Mid February- Mid March	Falgun							
Mid March- Mid April	Chaitra			↓				

EXHIBIT G8-7 SUBPROJECT OPERATION CALENDAR

(Flood Management, Drainage and Water Conservation)

Subproject Name:

Subproject No.:

Name of structure:

Year:





Month		Major Cropping Pattern	Flap Gate		Vertical Gate		Purpose	Water level (m)		Remarks
			Normal/Lifted	Close	Open	Close		SP side	River side	
English	Bangla									
Mid April-Mid May	Baishak		↑		●		Drainage			Flap gate is normal Vertical gate is opened
Mid May-Mid June	Jaishta		↑		●			Entry of natural fish fingerlings		
Mid June-Mid July	Ashar		●		●		Flood control & Drainage			
Mid July-Mid August	Shrabon							Water conservation for Boro cultivation		
Mid August-Mid September	Bhadra	T Aman	↓		↓	●				
Mid September-Mid October	Ashwin		↑							
Mid October-Mid November	Kartik									
Mid November-Mid December	Agrahayan									
Mid December-Mid January	Poush									
Mid January-Mid February	Magh									
Mid February-Mid March	Falgun	Boro								
Mid March-Mid April	Chaitra		↓							

Exhibit G8-8 Fund collection with the own initiative by WMCA and Format of annual accounts of operation and maintenance expenditure

(1 July 30 June)

1. Fund collection

SI No.	Source	Rate	Total collection
(a)	Additional charge with monthly fees		
(b)	Collection of produce in crop season		
(c)	Collection from fisheries		
(d)	Profit earned micro credit		
(e)	Other sector		
Collection Taka			

Balance in last year

Total Collection=

2. Maintenance Works

A) Removal of Silt

SI No.	Name of khal and length	Expenditure form own fund	Volunteer (Tk)	Total expenditure
1.				
2.				
3.				
4.				

B) Cleaning of hyacinth

SI No.	Name of khal and length	Expenditure form own fund	Volunteer (Tk)	Total expenditure
1.				
2.				
3.				
4.				

C) Embankment rehabilitation

SI No.	Name of embankment and length	Expenditure form own fund	Volunteer (Tk)	Total expenditure
1.				
2.				
3.				
4.				

D) Grass plantation on embankment slopes

SI No.	Name of embankment and length	Expenditure form own fund	Volunteer (Tk)	Total expenditure
1.				

E) Gate painting

SI No.	Name of structure and number	Expenditure form own fund	Volunteer (Tk)	Total expenditure
1.				

F) Gate repairing

SI No.	Name of structure and number	Expenditure form own fund	Volunteer (Tk)	Total expenditure
1.				

G) Gate greasing

SI No.	Name of structure and number	Expenditure form own fund	Volunteer (Tk)	Total expenditure
1.				

H) Repairing or replacement of rubber seal

SI No.	Name of structure and number	Expenditure form own fund	Volunteer (Tk)	Total expenditure
1.				

I) Gauge marking and painting

SI No.	Name of structure and number	Expenditure form own fund	Volunteer (Tk)	Total expenditure
1.				

J) Block making and placement

SI No.	Name of structure and Volume of Works	Expenditure form own fund	Volunteer (Tk)	Total expenditure
1.				

For WMCA (Chairman/Secretary)

Signature :

Name :

Designation:

For LGED

1. Signature :

Name :

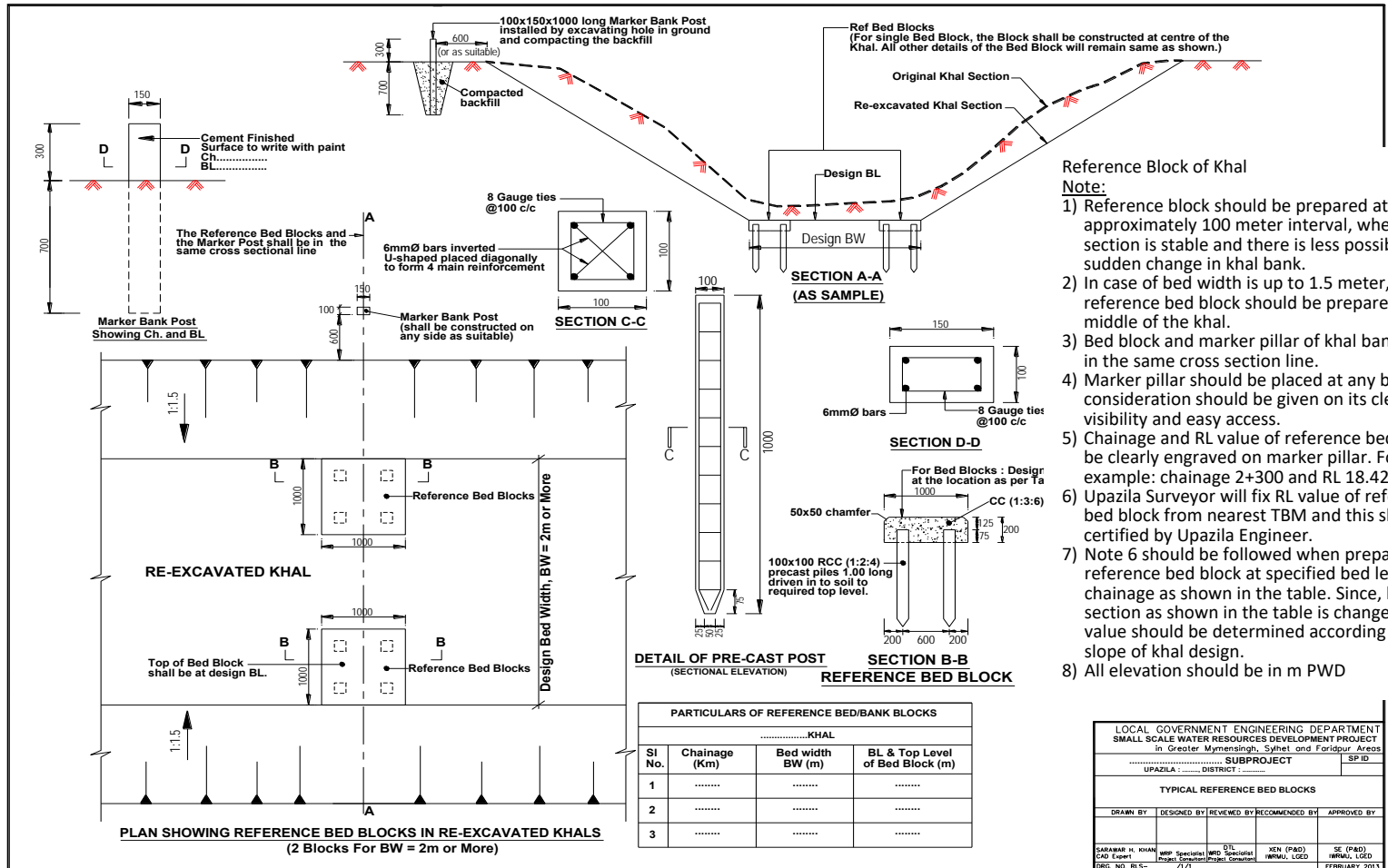
Designation: Sub-Assistant Engineer
(Seal)

2. Signature :

Name :

Designation: Upazila Engineer
(Seal)

EXHIBIT G8-8A REFERENCE LINED SECTION



- Reference Block of Khal Note:**
- 1) Reference block should be prepared at approximately 100 meter interval, where khal section is stable and there is less possibility of sudden change in khal bank.
 - 2) In case of bed width is up to 1.5 meter, a reference bed block should be prepared at the middle of the khal.
 - 3) Bed block and marker pillar of khal bank should in the same cross section line.
 - 4) Marker pillar should be placed at any bank, but consideration should be given on its clear visibility and easy access.
 - 5) Chainage and RL value of reference bed should be clearly engraved on marker pillar. For example: chainage 2+300 and RL 18.42
 - 6) Upazila Surveyor will fix RL value of reference bed block from nearest TBM and this should be certified by Upazila Engineer.
 - 7) Note 6 should be followed when preparing reference bed block at specified bed level of chainage as shown in the table. Since, location of section as shown in the table is changed, RL value should be determined according to long slope of khal design.
 - 8) All elevation should be in m PWD

LOCAL GOVERNMENT ENGINEERING DEPARTMENT				
SMALL SCALE WATER RESOURCES DEVELOPMENT PROJECT				
in Greater Mymensingh, Sylhet and Faridpur Areas				
..... SUBPROJECT				SP ID
UPAZILA :		DISTRICT :		
TYPICAL REFERENCE BED BLOCKS				
DRAWN BY	DESIGNED BY	REVIEWED BY	RECOMMENDED BY	APPROVED BY
SARWAR H. KHAN CAD Expert	MSP Specialist MSP Specialist	MWD Specialist MWD Specialist	YEN (P&D) WRMA, LGED	SE (P&D) WRMA, LGED
DRG. NO. BLS-.....				FEBRUARY 2014

EXHIBIT G8-9 HANDOVER AGREEMENT

HANDOVER AGREEMENT

This..... SUBPROJECT IMPLEMENTATION AGREEMENT is made on the day of 140..... Bengali/ 200.....AD between the following two parties.

Local Government Engineering Department (hereinafter referred to as "LGED") represented in this AGREEMENT by the Executive Engineer by virtue of his office (he himself or any other officer in his place or any entrusted person or whichever when applicable) hereinafter called the person to handover of the first party

-and-

.....Water Management Cooperative Association (WMCA) under the district ofUpazila.....Union.....represented in this AGREEMENT by the Chairman of WMCA Executive Committee by virtue of his office (he himself or any entrusted person or person in his position or whichever when applicable) hereinafter called the receiver of the second party

Whereas, LGED is responsible for the development and management of physical infrastructure through the Small Scale Water Resources Development Sector Project;

Whereas, LGED with its engineering skill and experiences has completed physical structures as described in schedule-2 in the subproject as described in schedule-1;

Whereas, local people as well as subproject beneficiaries organized under a WMCA and deposited Taka..... in bank account for the maintenance of infrastructure as constructed under the subproject and agreed for the management, operation and maintenance of the constructed infrastructure;

NOW, THEREFORE, for the handover of the physical infrastructure constructed under the subproject as stated mutually agree to sign the agreement in consideration of the clauses as follows:

Duties and responsibilities of LGED

- Article-1 The first party will handover all physical infrastructure of the subproject to the second party as included in this deed and according to the attached schedules 1, 2, and 3 for the use by WMCA members,
- Article- 2 The first party will organize training courses for the WMCA Management Committee members and later for the operation and maintenance sub-committee for the operation and maintenance of physical infrastructure.
- Article- 3 If major repair is required for flood, storm, surge and other reasons the first party will arrange the rehabilitation and repair of damaged physical infrastructure.
- Article- 4 The first party will provide technical guidance and support as required on annual inspection related to operation and maintenance, identification of

maintenance needs, preparation of maintenance plan and design, use of different machinery.

Duties and responsibilities of WMCA

- Article- 5 The second party will have the ownership right of the physical infrastructure as described in schedule 2 on behalf of their beneficiary members and according to the agreement will be fully responsible for the operation and maintenance of subproject infrastructure for the entire period.
- Article- 6 The second party will be responsible for the seasons and post-monsoon especial maintenance of physical infrastructure as described in schedule 2.
- Article- 7 For the implementation of entire maintenance works the second party will form an 'operation and maintenance sub-committee' including women members.
- Article- 8 Operation and maintenance sub-committee will plan implement and evaluate the following activities on behalf of the second party i.e., WMCA.
- a) Preparation of schedule for the regular inspection of infrastructure and taking of measure for preventive maintenance on the basis of inspection.
 - b) Preparation of operation and maintenance plan according to the guidelines for the operation and maintenance of infrastructure, arrangement of fund for the implementation of the plan and preparation of a budget for this purpose.
 - c) During the implementation of plan, control of water flow and height as required in critical times in different seasons and ensure that physical infrastructure are properly used and operated.
 - d) Assessment of repair needs of infrastructure after the rainy season every year.
 - e) Preparation of and implementation of detailed plan to mobilize resources for the implementation of maintenance plan with the collection of cash money and crop produces from the beneficiaries including volunteer labor and other arrangements as applicable and convenient.
- Article- 9 The second party will deposit the fund collected for the operation and maintenance to the account opened jointly by WMCA and Upazila Engineer and limit use of this fund only for operation and maintenance works.
- Article- 10 The second party will employ one or more operation and maintenance assistants for part time or fulltime for the implementation of operation and maintenance works and WMCA will provide the total expenses for the staff.
- Article- 11 The second party will ensure employment of poor and destitute women in the subproject area in earthworks and in all other preventive maintenance works and plantation activities.

TERMS

Article- 12 The unstipulated matters in this agreement including project's operation and maintenance guidelines and other documents and projects policies and rules will be considered as the party of this agreement and both first and second party will be obligated to comply those guidelines and policies and rules. No change will be made in the agreement for the changes in the second party i.e., in WMCA Management Committee or members of the committee or for the changes of Chairman/secretary. That is the agreement will be unchanged although if there are any changes of individual and its terms will be effective as before.

Article- 13 If any of the parties signed this agreement considers that the other party has violated and defied any particular term or terms then, affected or aggrieved party will initially take initiative to resolve the matter through direct dialogue and discussion among the both parties. If it is not resolved through the dialogue and discussion, then the Local Conflict Resolution Committee as formed according to the notification no. Pro: Au:-2/Pani-5/2001/418 (2347), date: 23-04-2002 issued by the Local Government division as provided in Annex-7, will resolve the dispute. The decision of the committee will be considered as final.

IN WITNESS WHEREOFF, the parties hereto have affixed their signatures on the date first written above.

For LGED

For WMCA

Executive Engineer

Chairman

Witness

Witness

Upazila Engineer

Secretary

Subproject Description

1. Subproject Name :
2. Subproject No :
3. Location : Union :
Upazila:
District:
4. Name of WMCA :
5. WMCA Registration No. :
6. Subproject Area : Total area (hectare) :
Benefit area (hectare):
7. Date when construction of subproject physical infrastructure started:
8. Date when construction of subproject physical infrastructure:

Detailed description of physical infrastructure

Serial No	Name of infrastructure	Location of infrastructure (name of mauza, plot number, etc.)
1.	Khal	
	Khal	
	Khal	
	Khal	
	Khal	
2.	Embankment	
	Embankment	
	Embankment	
	Embankment	
	Embankment	
3.	Sluice gate	
	Sluice gate	
	Sluice gate	
	Sluice gate	
	Sluice gate	
4.	Culvert	
	Culvert	
	Culvert	
	Culvert	
	Culvert	
5.	Water body	
	Water body	
6.	Other	
	Other	

Subproject map showing location of the infrastructure

EXHIBIT G8-10 NOTIFICATION

Government of the People's Republic of Bangladesh

Ministry of Local Government, Rural Development and Cooperatives

Local Government Division

Section- Pro:Au:-2

No. Pro:Au:-2/Pani-5/2001/418 (2347)

Date: 23-04-2002

Notification

The Government forms Local Conflict Resolution Committee at the upazila level consisting of the following members to resolve any conflict arises at the local level for the proper implementation of the Small Scale Water Resources Development Sector Project implemented by Local Government Engineering Department (LGED) under the Local Government Division.

Upazila Nirbahi Officer	-	Chairperson
Assistant Commissioner (Land)	-	Member
Upazila Cooperative Officer	-	Member
Upazila Fisheries Officer	-	Member
Subproject concerned Union Parishad Chairman	-	Member
Subproject concerned Union Parishad Woman Member	-	Member
Chairman of the concerned Water Management Cooperative Association-		Member
Representative of affected people of the concerned subproject area	-	Member
Upazila Engineer	-	Member Secretary

The responsibilities of this committee will be resolution of any conflict if created during the implementation and after the implementation of any subproject under the Project and consideration of other relevant matters. For this purpose the committee will assemble in meeting when required.

This order is circulated in the public interest and shall come into force with immediate effect.

Sd/

(M.Sultan Mahmud Khan)

Deputy Secretary

Local government division

Distribution:

1. Chief Engineer, Local Government Engineering Department, Agargaon, Dhaka.
2. Registrar, Department of Cooperatives, Motijheel, Dhaka.
3. Director General, Department of Fisheries, Matsya Bhaban, Dhaka.
4. District Commissioner, District.....
5. Upazila Nirbahi Officer, Upazila....., District.....
6. Assistant Commissioner (Land), Upazila....., District.....
7. Upazila Engineer, Upazila....., District.....
8. Upazila Cooperative Officer, Upazila....., District.....
9. Upazila Fisheries Officer, Upazila....., District.....

EXHIBIT G8-11 MONTHLY PROGRESS REPORT OF MAINTENANCE OF IRRIGATION STRUCTURE

Name of District:

Date:

Sl. No.	Upazila	SP Name	SP ID	Fund Allotment (Lac taka)				Fund Released (Lac taka)				Date of start of work	Date of completion of work	Physical Progress	Financial Progress	Remarks
				Embankment	Khal	Structure	Total	Embankment	Khal	Structure	Total					

Note: If there is any Problem in implementation of maintenance work, remarks should be given.

Signature of Senior Assistant Engineer
Official Seal

Signature of Executive Engineer
Official Seal

EXHIBIT G8-12 COMPLETION WORK FORMAT OF IRRIGATION STRUCTURE MAINTENANCE

(Financial Year.....)

Name of District:

Date of Report:

Sl. No.	Upazila	Name of Subproject & ID No.	Approved Work		Quantity of Implementation Work	Estimated Cost
			Type	Quantity		
1	2	3	4	5	6	7
			a) Embankment b) Khal c) CAD d) Infrastructure			

Contract Cost	Date of Start of Work	Date of Completion of Work	Fund Received	Implementation Cost	Remarks
8	9	10	11	12	13

Note: Quality of works, implemented works, unspent money (if there is), evaluation of works or if there is any problem that should be clarified in remarks Colum/

Signature:

Name:

Designation: Upazila Engineer
(with seal)

Signature:

Name:

Designation: Senior Assistant/Assistant
Engineer, Executive Engineer Office
(with seal)

Signature:

Name:

Designation: Executive Engineer,
LGED, District:.....
(with seal)

EXHIBIT G8-13 FORMAT OF OPERATION AND MAINTENANCE PLAN

I. Brief Description of Subproject and WMCA

A. Area of Subproject

B. Inventory of Subproject Infrastructure

C. Objective and Benefit

D. Profile of WMCA

1) Beneficiary Households

2) Total WMCA members

3) WMCA Capital: Share: Savings:

4) WMCA's O&M Fund:

Initial FDR Amount: O&M Fund (Operating Account):

E. Map of the Subproject

II. Operation Plan

A. Subproject Operation Calendar

(Follow the Format in Exhibit G8-6 & 7)

B. General Rules for Operation of Water Control Structures

(Refer to the description in 5.5 in the main text.)

C. Operation Cost

Area of Expense	Type of work	Name of Structure	Unit	No	Allowance per month (TK)	Total Amount (TK)
Gate Operator-1	Gate Operation	WRS-1	month	12		
Gate Operator-2	Gate Operation	WRS-1	month	12		
Gate Operator-3	Gate Operation	WRS-1	month	12		
Total						

III. Maintenance Plan

A. Categorization of Maintenance Work

Sl. No.	Infrastructure	Types of Maintenance Work		
		Regular	Periodic	Emergency
1.				
2.				
3.				

B. Maintenance Work

(Follow the Format in Exhibit G8-2)

C. Maintenance Work Implementation Schedule

(Follow the Format in Exhibit G8-4)

D. Long Term Maintenance Plan

Sl. No.	Name of Infrastructure	Type of work	2018	2019	2020	2021	2022	2023	2024	2025	2026
1.	Channel	Silt removal				_____				_____	
2.	WRS-1	Repairing					_____				
3.	WRS-2	Repairing					_____				
4.	WMCA Office	Repairing									_____

E. Estimation of Maintenance Cost

(Follow the Format in Exhibit G8-3)

IV. Fund Management Plan

1. Revenue	
Sources	Amount (TK)
a. Annual Profit from FDR	
b. Annual subscription from the Beneficiaries	
c. Monthly subscription	
d. A portion of profit from micro-credit	
e. A portion of profit from fish culture	
f. Contribution from Concerned Parties	
g. GOB fund allotment	
h. Others (mention)	
Total	
2. Expenditure	
Area of Expenditure	Amount (TK)
a. Operation Cost (as estimated in II. C.)	
b. Maintenance Cost (as estimated in III. E.)	
c. Others	
Total	
Balance (2018)	

Annexes

Annex-1 Beneficiaries' List (Follow the Format in Exhibit G8-5)

APPENDIX G8-A

OPERATION AND MAINTENANCE OF BURIED PIPE IRRIGATION (CAD) SUBPROJECTS

*This forms a part of the Documentation of Guidelines that inform
Small Scale Water Resources Development in Bangladesh*

APPENDIX G8-A O&M OF BURIED PIPE IRRIGATION (CAD) SUBPROJECTS

A. INTRODUCTION

To achieve sustainable benefits from the investment in engineering infrastructure effective management, operation and maintenance is vital. Previous guidelines¹ do not cover the specific management, operation and maintenance needs of CAD irrigation subprojects. To some extent this lack is addressed by this Chapter which describes the operational challenges facing farmers of CAD subprojects, and their operation and maintenance features and requirements.

Challenges facing the farmer operators are considerable and usually stem from:

- i. Variation in irrigation demands within a season and from year to year due to weather variations, particularly rainfall and plant stages of growth.
- ii. The variation in land types (and also possibly soils) in the command area. Low lying areas may be wetter than high lying areas requiring less and / or delayed irrigation supply.
- iii. A range of different crops being cultivated requiring differing irrigation intervals and application depths.
- iv. Fluctuation in electric power supply (unless farmers have diesel pumps) restricting pumping times.
- v. Time taken to fill the pipe distribution system whenever irrigation is resumed after an interval and to attain usual operation flows and pressures in the system.
- vi. Sedimentation.
- vii. Wash out / failure of part of the pipe delivery system.
- viii. Tampering of alfalfa valves and/ or theft of water.

To help farmers meet these challenges is good design and provision of appropriate or “*enabling*” engineering infrastructure, including:

- i. A control structure at the head of each rotation unit enabling: (i) adjustment and measurement of irrigation flows; and (ii) pipeline isolation and maintenance without closing down the whole system. Note: this function is often carried out by the header tank.
- ii. Standpipes constructed to correct height (ie 0.3 m freeboard for escapes and 0.6 m freeboard for air vents) and supplied with small clear plastic piezometric tubes attached to the standpipes to monitor pressures within the distribution pipe system.
- iii. Alfalfa valves in outlets which may be protected from tampering by a lockable grill.
- iv. Selection of pump sets to maximize efficiencies and minimize power requirements and operating costs.
- v. Washouts to allow periodic flushing / drainage of the pipe system.

The relatively large capital investment for CAD subprojects (with uPVC pipelines) justifies preparation of subproject specific O&M strategies and intensive training of farmers to ensure good performance. Exchange visits to successful CAD subproject are recommended.

¹ LGED “*Water Resources Infrastructure O&M Guidelines*” 2007 and the “*Small Scale Water Resources Support Strategy and O&M Manual*” 2009

B. OPERATION

1. Operation Objectives

Suggested operation objectives are:

- i. To supply sufficient irrigation water to meet crop water requirements with reasonable flexibility to meet fluctuating demand.
- ii. To supply water while minimising pumping (energy) costs.
- iii. To meet all farmers demands with reliable, transparent and equitable water distribution.
- iv. Beneficiaries (farmers) meeting O&M costs.

Meeting these objectives requires:

- i. Clarity and consensus to operating procedures among WMCA members and farmers.
- ii. Formation of appropriate farmer institutions, specifically: (a) the O&M subcommittee; (b) Rotation Unit beneficiary groups; and (c) Irrigator beneficiary groups.
- iii. Appointment of system operators for O&M of the pumps and distribution of water by controlling flows (and pressures) in the pipelines – these may be directly appointed or through an outsourcing agreement with a third party.
- iv. Adoption of agreed charges for irrigation water and procedures for collection, use and accounting for O&M funds.

2. Water Distribution below the Pipe Outlet

The buried pipe and field channel (or plastic hose) distribution system is designed to meet the peak crop demand.

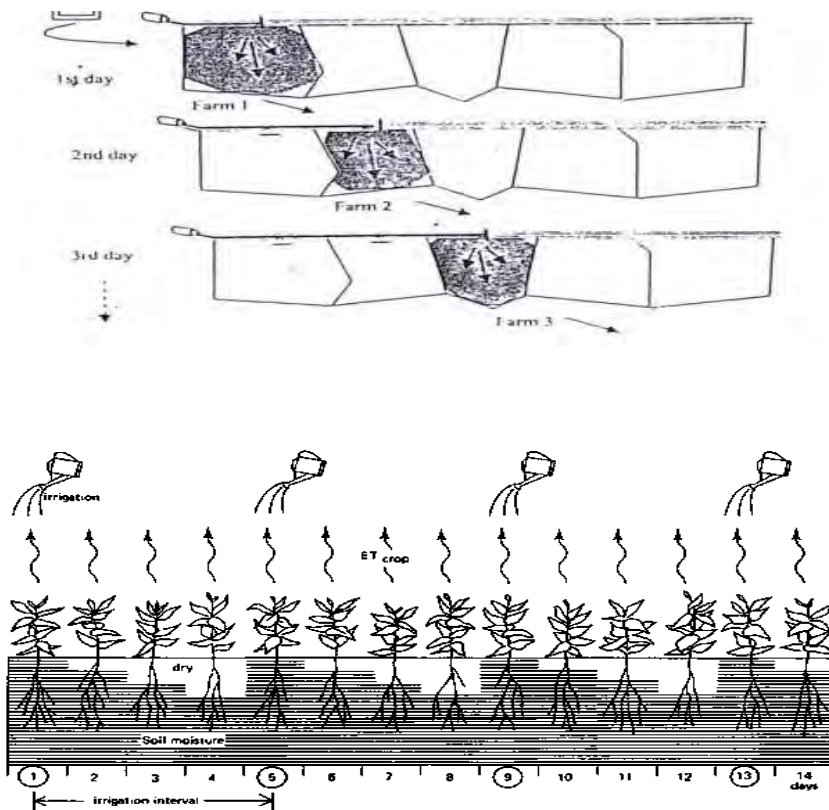
Flows from the outlets along each field channel (or by hose) to farmers' fields will be managed by Irrigator Groups. The field channels will be constructed and / or hose purchased by farmers themselves.

Particularly for non-rice crops, plastic hose / tubing may be used to convey water from the outlets to the fields. In this case the sequence of irrigation may be more flexible and based solely on farmer demand / need as losses will be minimal as water supply is switched between farmers.

For field channel conveyance the delivery pattern should arrange the sequence in which each farmer receives his turn in the irrigation cycle. Ideally the movement of water along a field canal will be systematic, going from head to tail, or the reverse, but not haphazard. This reduces water losses due to prism storage and perimeter wetting. However it is recognised that other factors influencing the irrigation sequence may be more important. For example, has the farmer paid for the water, or is water needed urgently by one farmer to prevent crop loss.

For field channels rotational distribution to farmers by turn according to a predetermined time schedule specifying the day, time and duration of supply is suggested. However farmers are free to adopt any method they wish and a more flexible system may be appropriate.

Figure-1: Irrigation Interval and Irrigation Sequence



Ideal delivery pattern along field channels is in sequence to minimise operational & conveyance losses. However other factors influencing irrigation sequence may be more important. For example, has the farmer paid for water? Is water needed urgently to prevent crop loss.

Irrigation of crops occurs at intervals depending on crop, soil and land type, etc. For example, 6 to 10 days for Boro, and 7 to 14 days for Onion is likely to be appropriate.

Irrigation depths, intervals and total (gross) water requirements for a range of crops are given below. These figures are indicative as they depend on the conveyance / operating efficiency of the conveyance system, as well as the District climate and soil type. In general the irrigation amounts decrease from east to west across the country, refer Chapter.

Table-1: Indicative irrigation amounts and intervals for range of crops

Name of crop	Per application (mm)*		Interval (day)		No. of Irrigation		Total Requirement (mm)*
	Low-land	High-land	Low-land	High-land	Low-land	High-land	
HYV Boro	50	75	10	6	12	18	600- 1200
Aman	50	75	20	10	2	3	100 - 225
Wheat	40	50	21	14	3	6	120 – 300
Potato	25	40	14	7	5	10	125 – 400
Maize	50	75	21	14	4	6	200 – 450
Mustard	30	40	20	14	2	4	60- 160
Brinjal	20	40	14	7	8	11	160- 440
Tomato	30	40	7	5	6	10	180- 400
Onion	25	40	14	7	6	7	150- 280
Chili	25	40	14	7	8	13	200- 520
Jute	30	40	10	5	3	6	90- 250
Sugarcane	50	75	20	14	10	14	500- 1050

The duration and amount of water received by each farmer would be set by the Irrigator Group taking into account the crop(s) grown and irrigation flow. However indicative durations have been calculated below for Boro cropping adopting a design (gross duty) of 0.65 l/s/ha (5.6 mm/day) at the field level; 0.81 l/s/ha (7.0 mm/day) from the pipe riser outlet. These are based on a 7-day rotation period with continuous (day and night) irrigation.

Table-2: Rotational Water Distribution Downstream of Outlet

Nr	Item	Units	Quantities
Step 1: Irrigator Group Design Flow			
1	Design duty at field level	l/s/ha	0.65
2	Watercourse efficiency	%	80%
3	Design duty for pipe system	l/s/ha	0.81
4	Net irrigation area	ha	313
5	Nr of outlets	Nr	31
6	Area supplied by Outlet	ha	10.1
7	Design flow provided from Outlet	l/s	8.2
Step 2: Rotation of supply to irrigator group members			
1	Rotation period	days	7
2	Number of hours of group supply each day	hrs	24
3	Number of hours of group supply in rotation period	hrs	168
4	Nr of group farmers to receive water at same time	Nr	1
5	Flow provided to each farmer (irrigator flow)	l/s	8.2
6	Time available per ha with design irrigator flow	hrs/ha	16.6
7	Time for typical marginal farmer with 0.1 ha	hrs	1.7
8	Time for typical small farmer with 0.6 ha	hrs	10.0
10	Time for typical medium farmer with 2.0 ha	hrs	33.3
Step 3: Volume of water supplied to farmers fields			
1	Volume supplied to group farmers in rotation period	m ³ /ha	490
2	Watercourse efficiency	%	80%
3	Depth supplied to fields in rotation period	mm	39
Puddling / Land Preparation			
1	Puddling Requirement	mm	180
2	Puddling volume (no losses)	m ³	1,800
3	Puddling volume (with 20% losses)	m ³	2,250
4	Design flow for irrigation unit	l/s	8.2
5	Time to satisfy puddling requirement	hrs / ha	76
		days / ha	3.2
	(for irrigator unit & whole scheme)	days	32.2

The following may be concluded from this exercise:

- i. The typical outlet flow of 8.2 l/s should be used to irrigate 1 field at a time – splitting this flow to two farmer fields will increase water losses.
- ii. For one field irrigated at a time the duration of irrigation would be about 16.6 hours per ha. For smaller / larger fields the duration would be decreased / increased according to their areas;
- iii. In the 7-day irrigation period a depth of 39 mm would be applied with this flow to each field in the Irrigation Unit.
- iv. Assuming that land preparation / puddling requires 180 mm of water then land preparation will take about 32 days.

3. Pipe Flows and Pumping to meet Irrigation Requirements

Water demand varies from month to month depending on rainfall, crops cultivated and planting dates. Peak water demands occur early in the Rabi season for land preparation and puddling of soils (for Boro), and again in March to meet peak crop evapotranspiration.

The height of the header tank and standpipes should be sufficient to meet the *peak* (1-month) water requirement. In addition a small free board may be provided. However the more usual operating scenario is for lower discharges and operators must therefore adjust

the pumped flow to match demand from day to day / week to week. Very simply, as the alfalfa valves at riser outlets are opened or closed the number of pumps operational is adjusted to match supply to demand and prevent overtopping of the standpipe escapes / air-vents.

As the pipe distribution system is capable of carrying meeting *peak* requirements, whenever water requirements are less, the lower discharges and pipe friction losses will result in lower pressures and water levels in the header tank. As energy requirements are directly proportion to the pumping head costs also reduce if high pipeline flows are avoided.

To minimise operating costs the following is recommended:

- Irrigate both day and night.
- Provide flows to all three pipelines, providing that flows are not so small that irrigation becomes inefficient or sedimentation occurs. If high flows are maintained in pipelines by rotating supply to rotation units then pumping head and costs will remain high and this is therefore not recommended.
- In periods of medium irrigation demand, rotate flows along each pipeline to different outlets. For example flow may be supplied to odd outlets and then even outlets in turn, or alternatively to the upstream and then downstream outlets along of the pipeline. This will prevent outlet (irrigator) flows becoming too small.
- In period of low demand flows may be rotated between Rotation Units (pipelines) to avoid very low pipe flow velocities which may result in pipe sedimentation.

Options for pipe system operations are tabulated below, エラー! 参照元が見つかりません。 . The pressure head at the header tank has been calculated for a 2,000 m long pipeline supplying 100 ha, and with a design flow of 81 l/s. Four similar pumps are provided to meet *peak* flows.

During periods of peak water demand all 4 pumps are required and pumping (energy) costs will be high – *Option A*. As water demand reduces, the number of pumps reduces. For 3 pumps operating it is suggested that flows to each irrigation unit (outlet) are reduced by adjustment of the alfalfa valves – *Option B*. In case any irrigator unit is short of water the 4th pump would have to started-up. For just 2 pumps operating, rotations to outlets along each pipeline are proposed as this is easier than adjusting the flows from each outlet, and also this avoids very low irrigation flows which are not efficient – *Option C*. If the same depth of water was supplied to each field, farmers would receive water every 2-weeks rather than each week. For very low demand periods, just one pump would be operated or the system closed - *Option D*. This is likely following rainfall in the command area.

On resuming irrigation supply, the time taken to fill the pipe distribution system and / or return to normal (design) operating pressures may be minimised by initially closing the control valves / outlets and only opening them when operating pressures are reached.

Table-3: Suggested Pipe System Operation

Option	Description	Suggested Supply / Rotations along Pipeline	Pressure at Header Tank (m)	Remarks
A	Design flow in pipeline ($\pm 10\%$) to meet peak water requirements	No rotations practiced during land preparation and peak crop ET periods	Design (maximum) head of about 4.5 m	All 4 pumps operating. High flow and high head means that pumping costs are high.
B	75% of design flow in pipeline ($\pm 10\%$) as crop water requirements reduce.	No rotations practiced during these reasonably high demand periods. However it is expected that on average irrigation flows will be reduced to 75% of design flow.	Reduced head of about 3.2 m	3 pumps operating. Reduced flow and lower head means that pumping costs are reduced
C	50% of design flow in pipeline ($\pm 10\%$) as crop water requirements reduce. Farmers receive water every second week (or other agreed irrigation interval)	1 by 2 rotation practiced along each pipeline as follows: Period 1: Upper half receives water Period 2: Lower half receives water Irrigation design flows provided.	Head varies: (i) about 2.4 m for head end supply; and (ii) 3.3 m for tail end supply	2 of 4 pumps operating. Reduced flow and lower head means that pumping costs are reduced
D	Closure / Semi-closure	Supply to irrigator groups in need of water	Minimal	No / little pumping

Closure of the whole system is particularly sensible following rainfall in the command area. A rough rule of thumb for the period of system closure for various rainfall events is tabulated below.

Table-4: Rainfall and duration of Closure

Daily Rainfall (mm)	Days of Closure Suggested
20	2
20 – 25	3
25 – 30	4
30 – 35	5
35 – 45	6
45 – 55	7
55 – 70	8
70 - 80	9
80 and above	10

4. Farmer O&M Institutional Arrangement

To facilitate operation each scheme is divided into Rotation Units about 80-120 ha in area by consideration of topography /hydraulic boundaries, refer Chapter. Each Rotation Unit should be supplied with a regulated and measureable amount of irrigation water. In turn each Rotation Unit is divided into smaller Irrigator Units, each 5-15 ha in area and receiving irrigation water from a riser outlet.

A 9-12 person O&M sub-committee should be formed for the subproject and should comprise the following:

- 3 members from the WMCA Management Committee.
- At least 2-3 representatives from each Rotation Unit.
- 3-4 (25%) women members.

The O&M sub-committee has overall responsibility for scheme O&M under the WMCA Management Committee, including distribution of flows as far as the pipe outlet and funding arrangements. For day to day management of pump sets and water distribution well trained and paid (by the WMCA through farmer contributions) staff are required comprising: (i) 1-2 Pump Operators; and (ii) 1-2 Pipe System Managers per Rotation Unit.

Downstream of the pipe outlet farmers would be expected to organise themselves into Irrigator Groups to manage water distribution from the pipe outlet along field channels to their fields. If outlets for pipes (rather than for open channel) structures are provided then plastic hose / tubing directly fixed to the pipes may be used.

Depending on the crop(s) grown the duration each farmer receives irrigation water would be set by the irrigator group, and the group would manage rotation of irrigation supplies to farmers.

Suggested institutional O&M arrangements and staffing are tabulated below.

Table-5: Scheme Layout, Institutions and O&M Staff

Nr	Unit	Typical Area (ha)	Institution	Flow Control & Measurement	Typical Nr of Irrigator HHs assuming 0.15 ha/ HH*1	O&M Staff
1	Rotation Unit	80 - 120	O&M sub-committee with 1-2 representatives from each RU reporting to the WMCA	By adjusting valves and V-notch weirs in Header Tank	200-250	Paid Pump operator (1-2 Nr), Pipe System Managers (1-2 / rotation unit)
2	Irrigator Unit	5-15 ha	Irrigator Groups managing supply to farmers fields from each outlet	By adjusting (alfalfa) valves at each outlet. No accurate flow measurement.	15 – 25	Unpaid Irrigator Group Manager.

*1 Note: CAD irrigation subprojects typically are dominated by small and medium land holders with a proportion of landless. Average net irrigation land holding is likely to be about 0.4-0.5 ha.

Farmers in small scale water resources subprojects developed by LGED comprise the following land owning groups:

- Land less (LL)
- Marginal farmers (MRF): 0.01 to 0.49 ac
- Small farmers (SF): 0.50 to 2.49 ac
- Medium Farmers (MF): 2.5 to 7.49 ac
- Larger farmers (LF): > 7.5 ac

The overall average landholding is typically about 1-1.3 ac (0.40 to 0.53 ha)

C. MAINTENANCE

1. Categories of Maintenance

In any irrigation development which is either new, or substantially expanded or changed, farmers do not initially appreciate maintenance needs, activities and costs to keep the engineering infrastructure in good working order. If maintenance is not carried out, or frequently deferred, the scheme will deteriorate resulting in its inability to perform as designed.

Considerable efforts are therefore required to build awareness of maintenance requirements, support development of a maintenance strategy that has the broad approval of farmers, and develop farmer (institutional) capacity to implement the strategy.

Maintenance requirements for engineering infrastructure fall into the following categories: (i) Preventative Maintenance; (ii) Routine Maintenance; (iii) Periodic maintenance; and Emergency repairs.

Routine maintenance is carried out as required and at least annually and includes for works identified by observations and inspections as well as those required to ensure smooth functioning of the system. Examples are lubrication / greasing of pump bearings and valve spindles, painting of metal work, sediment removal from the header tank, repair any of (pipe) joint leaks and covering of any exposed lengths of pipeline, and weed cutting and minor earthwork dressing for field irrigation channels.

Periodic maintenance addresses major repair works that are carried out every few (3-5) years. Works may include flushing of the pipeline, replacement of any failed lengths of pipeline, replacement of leaking / damaged alfalfa valves and pumping equipment, and repairs to structures.

Emergency repairs are those not foreseen and which must be undertaken immediately to avoid partial or complete system shutdown and subsequent loss of agricultural production. Examples include burnout of an electric motor, bursting of a pipe, etc.

2. Maintenance Requirements

a. Pumping Plant

Maintenance of the pumping plant, including the control panel, electrical connections & motors / diesel engines and the pumps themselves is essential to keep them operational and to retain high pumping efficiencies.

Moving mechanical parts need greasing, while operation of electric motors at low / high voltage should be avoided to reduce likelihood of motor and / or transformer burn-out. Procedures proscribed (by the supplier of the equipment) for start up and shut down must be followed.

Associated fixtures and fittings include the (steel) suction and pressure pipes, screen and foot valve, pump priming arrangement and control valves. Maintenance works include painting exposed steel work, greasing of bolts, removal of debris caught in screen, and replacement of seal in the foot valve.

Security of equipment and of the electric transmission line and transformer is always a concern, and is to be ensured by the WMCA and community.

b. Major Structures

Major structures include the header and any flow control tanks, and the pump house if provided. For these usual maintenance work comprises: (i) addressing any leakage due to pipe / structure differential settlement / movement – this may require removal and resetting of the connecting pipe; (ii) cement plaster work to reduce any seepage through tank walls; (iii) greasing of spindles / valves; (iv) painting of exposed steel work; (v) seasonal removal of sediment; (vi) periodic replacement of damaged / rusted steel work, for example access ladders.

c. Leaks from Concrete Pipelines

Leaking concrete pipe joints is a severe problem for many of the CAD subprojects constructed prior to 2012. These pipe joints were sealed by: (i) filling gaps with hessian cloth soaked with bitumen; and (ii) placement of a mortar / concrete surround.

Leaks often tend to be most acute in the upper part of the pipelines where water pressures are highest and / or where pipe settlement has occurred and the joints have opened up.

For localized, non-extensive leaks from joints, individual repair is recommended, using cement mortar and / or a fit-for-purpose joint sealant such as Bidco C56-Butyl Mastic. For more severe and extensive leaks the following strategy is recommended:

- For pipes 550 mm or larger, remove 1-2 pipes to allow internal inspection at intervals of about 50-75 m. If pipes have not badly settled then rake out joints and seal using fit-for-purpose joint sealants such as Bidco C56-Butyl Mastic or as appropriate. Sealing should be done from the inside of the pipes. For sections that have settled it is necessary to remove and relay the pipes, and then seal the joints. To avoid future settlement of the re-laid pipes they may be placed on a gravel or sand bed.
- For pipes, 500 mm or smaller, which are too small to be sealed from the inside, replacement with uPVC pipes may be considered, or “slip-lining” by introduction of a smaller carrier pipe or HDPE loose fit liner into the larger concrete pipe. Alternatively removal, relaying and jointing with gravel / sand bedding to prevent settlement may be considered. A proprietary joint sealant should be used in addition to / instead of a cement motor surround.

Note: unless working pressures are less than (about) 2 m then packing clay around the pipe is unlikely to be effective in sealing leaks.



Placement of concrete surround to joints with concrete mortar / bitumen in the joints



Sealing a pipe joint from the inside with activated oakum (jute fibers soaked with a resin)

d. Leaks from uPVC Pipelines

For uPVC pipes should be little leakage from the solvent cement joints providing they have been connected properly. However if leaks do occur then a “patch” may be effected from the outside.

e. Distribution System Structures

Distribution system structures include outlet boxes, air-vent standpipes, escapes and washouts.

Usual maintenance work comprises: (i) repair of any leakage – usually at joints due to pipe / structure differential settlement / movement; (ii) greasing of alfalfa valve spindles, and replacement as required; (iii) painting of exposed steel work; (iv) end of season flushing of the pipe system to remove sediment; (v) structural works such as plastering / pointing and repair of damaged masonry / concrete sections.

Any tampering of the outlet (alfalfa) valves will result in imbalance and inequitable water distribution, and for this reason all valves may be provided with a lockable cover. The alfalfa valves are robust but periodic replacement will be necessary.

Pipe crossings of low land areas including any drainage lines (streams, etc) are particular vulnerable points. During floods empty uPVC pipes have been known to “float” if not buried properly to sufficient depth. Also erosion can expose the pipeline to sunlight and physical damage. Immediate repair of such damage and re-covering of pipelines is essential.

Earthen field channels kept in good order, with seasonal prism shaping and cutting of grass and vegetation.

f. WMCA Office

The office will require both routine (eg painting) and periodic maintenance (eg replacement of galvanized iron roofing sheets).

3. Maintenance Process

a. Preparation of Maintenance Plan and Budget

Each year the WMCA and O&M Subcommittee should prepare a Maintenance Plan and Budget. In most years only minor (routine) maintenance will be planned and carried out, while in other years more major works will be required.



The O&M subcommittee will consult with their operating staff and carry out inspections to assess the condition of the infrastructure and determine maintenance requirements. The Maintenance Plan should differentiate between routine, periodic and emergency maintenance.

Table-6: Determination of Maintenance Works

Infrastructure	Description of Maintenance Works by Type		
	Routine (Annual)	Periodic (2-5 years)	Emergency
WMCA Office			
Pumps and accessories			
Pump House			
Header Tank			
Flow Control Structure			
Buried Pipe Line			
Standpipe Air vents			
Outlets (risers)			
Escapes			
Washouts			
Other			

Once the required works are identified the cost of the planned works will be estimated as indicated in エラー! 参照元が見つかりません。 . The rates (costs) for the work will be determined by the O&M committee following discussions with those who will carry out the works and / or after checking of costs for necessary materials.

Table-7: Cost of Planned Maintenance Works

Infrastructure	Description of Works	Units	Quantity	Rate	Cost
WMCA Office					
Pumping Equipment					
Header Tank					
Flow Control Structure					
Buried Pipe Line					
Standpipe Airvents					
Outlets (risers)					
Escapes					
Washouts					
Other					

Preparation of Estimate by:
 Name :
 Designation :
 Signature :
 Date :

Assisted by:
 Name :
 Designation :
 Signature :
 Date :

b. Joint Walk-Through

To assist the preparation of the maintenance plan and budget an annual “*Joint Walk-Through*” inspection by officials from LGED together with members of the WMCA and O&M sub-committee to jointly inspect engineering infrastructure is done in the early years following subproject handover.

The joint walkthrough will usually be done by the District Assistant Engineer (AE) together with the Upazila Sub-Assistant Engineer (SAE) and at least four members from the O&M sub-committee. Project retained staff may also attend.

c. Post and Pre Irrigation Season Inspections

Post and Pre irrigation season inspections by the O&M subcommittee are recommended, whether or not they are attended by anyone from LGED / Project.

The post-irrigation season inspection will: (i) assess condition of infrastructure and identify maintenance requirements; (ii) prepare the maintenance plan and budget; (iii) arrange funding / collection of funds; and (iv) plan / arrange for implementation of maintenance works.

The pre-irrigation season inspection will check that the system is in good working order and that maintenance has been properly carried out. This inspection will particularly focus on pumps, motors and accessories.

d. Public Meetings

Public meetings to discuss O&M arrangements and present the annual O&M plan and budget should be held at least once a year.

D. PUMP AND SYSTEM OPERATORS

To manage the pump sets, water distribution to each pipeline and outlet as well as routine maintenance, well trained and paid (by the WMCA) staff are required comprising: (i) 1-2 Pump Operators; and (ii) 1-2 Pipe System Mangers per Rotation Unit.

Options for procuring these operating staff / services for day to day subproject operations include:

- i. Direct appointment by the WMCA / O&M committee who will oversee their work and pay salaries / expenses for day to day subproject operations; or
- ii. Indirect appoint by outsourcing day to day subproject operations to a third party. The precise scope and payment made under any outsourcing arrangement should be decided by the WMCA / O&M subcommittee.

The tasks and duties of these Operators are summarised below.

Table-8: Tasks / Duties of Operators

Operator	Tasks / Duties
Pump Operator(s)	<ul style="list-style-type: none"> • Pump and motor operation and maintenance. • Measurement of water levels in header tank and flow over V-notch weirs as required to check pipe system is operating correctly – usually just at the start of each irrigation season. • Adjustment of flows into each pipeline and number of pumps working on a daily / weekly / monthly basis. • Maintaining records of pumping time, pump & motor maintenance carried out and any rotation of flows into each pipeline. • Keeping in close communication with System Operators (by mobile phone) • Reporting to the O&M Subcommittee / WMCA committee
System Operators	<ul style="list-style-type: none"> • Regulation / control of flows to each Irrigator Group by opening / closing / adjustment of outlet alfalfa valves. If a system of rotation has been adopted (in the bylaws) then implementation of the rotation would be managed by the System Operator. • Checking pressure in pipelines – in particular if any standpipe is spilling water. • Requesting the Pump Operator to increase / decrease supply to their Rotation Unit (ie adjust number of pumps operating) to match demand. • Checking for any unauthorised tampering of alfalfa valves or pipeline. • Resolving petty conflicts concerning flows. • Taking part in annual maintenance walkovers / inspections. • Collection of water fees (charges) from farmers as required by the bylaws. • Reporting to the O&M Subcommittee / WMCA committee.

a) O&M Costs and Funding Arrangements

i. Operation Costs

Operation costs include for energy (electric / diesel) for pumping, plus payments made to the operating staff.

Pumping costs are likely to be about: (i) BDT 6-7 / dc², US\$ 18-22 / ha for electric pumps; and (ii) BDT 30-40 / dc, US\$ 90-120 / ha for diesel pumps.

Operating staff costs assuming salaries of BDT 6,000 / month for a pump operator, and BDT 4,000 / month each for three linesmen, will be about BDT 1-2 / dc, US\$ 3-6/ha.

The major cost is therefore for energy. To minimize the pumping costs the following is recommended:

- Do not pump if water is not required.
- Consider growing wheat / maize / pulses / vegetables, etc in Rabi.
- Reduce pumping head: eg use 1 or 2 pumps, not all of them. Also split pumped flow between all off-taking pipelines (Rotation Units) - even when crop requirements are quite low - by rotating flows along a pipeline (eg 1 week to even numbered outlets and one week to odd numbered outlets).
- Select the right pump for the job so that it operates efficiently (eg at 70-80% rather than 40-50%).
- Convert to electric pumps if possible.

While diesel pumps increases costs significantly, they have the advantage of insulating farmers from erratic electric supply and load shedding. Also it may not be easy to secure an electrical connection from the Rural Electricity Board.

The cost to hire pumping equipment may have to be included. If pumps are hired from BADC the charge is about Tk 3,000 / cusec for the season (2013 rates) plus a deposit.

ii. Maintenance Costs

Little data are available, but maintenance yard sticks are suggested below allowing maintenance costs to be estimated for a 313 ha subproject³. These are likely to be about BDT 36,700 each year for routine maintenance, plus about BDT 230,000 every 4-5 years for periodic maintenance. This is for a subproject with uPVC pipes – maintenance for a subproject with concrete pipes are likely to be larger due to leakage problems.

Table-9: Indicative Maintenance Costs

Nr	Item	Unit	Quantity	Yardstick for Routine Maintenance (BDT)	Cost (BDT)	
					Routine	Periodic
1	WMCA Office	Nr	1.0	3,000	3,000	10,000
2	Pumping Equipment (& pump house)	sum			5,000	100,000
3	Pipe line					
	- uPVC Pipeline	m	8.335	2	16,670	50,010

² Note: 1 decimal = 1/100th of an acre, 1 acre = 0.4047 ha

³ Maintenance costs are determined for Mongalpur, SP33097

Nr	Item	Unit	Quantity	Yardstick for Routine Maintenance (BDT)	Cost (BDT)	
					Routine	Periodic
	- concrete pipeline	m	0	10	0	0
4	Pipe System Structures					
	Header Tank	Nr	1.0	1,000	1,000	3,000
	Flow Control Structure	Nr	1.0	600	600	1,800
	Standpipe Airvents	Nr	24	200	4,800	14,400
	Outlets	Nr	31	200	6,200	18,600
	Escapes	Nr	7	300	2,100	6,300
	Washouts	Nr	8	300	2,400	7,200
	Totals				41,770	211,310
	Cost per ha (BDT)				133	675
	Cost per decimal (BDT)				0.5	2.7
	Cost per ha (US\$)				1.7	8.4
	Percentage of capital cost				0.2%	0.9%

Note: capital cost from feasibility report (excl contingencies, etc) was BDT 24.0 million

iii. Total O&M Costs

Annual O&M Costs are tabulated below and are likely to average about BDT 9.2 / dc, US\$ 28/ha for electric pumping and about BDT 37.7/ dc, US\$ 116/ha for diesel pumping. The cost of energy for pumping is the major cost, particularly if diesel pumping is adopted without any subsidy.

Table-10: Annual O&M Costs

Nr	O&M Costs (BDT)	Annual O&M Costs (BDT/dc)	
		Electric Pumps	Diesel Pumps
1	Pump and System Operators	1.5	1.5
2	Pumping Energy costs – Electricity / Diesel	6.5	35.0
3	Routine (annual) maintenance costs	0.5	0.5
4	Periodic Maintenance Costs (assume every 4 years)	0.7	0.7
	Totals	9.2	37.7

iv. Funding Arrangements

It is suggested that water charges are levied on farmers according to the Rabi crop type and area irrigated. Annual irrigation charges should be roughly as follows:

- Electric pumping: (i) Tk 10 / decimal for rice; and (ii) Tk 7 / decimal for non-rice crops.
- Diesel pumping: (i) Tk 40 / decimal for rice; and (ii) Tk 28 / decimal for non-rice crops.

The water charges should be reviewed from time to time in light of actual operating costs.

To enable water charges to be collected from farmer users, a Beneficiary List by Irrigator Group should be compiled by the WMCA O&M committee and updated as required each season. Each beneficiary would be required to pay O&M costs according to crop type and land area irrigated.

LGED funding assistance may be available for emergency maintenance and for any new works needed to improve the system. LGED may also provide some matching funds for periodic maintenance on a cost sharing basis with the WMCA. The WMCA may request

funding assistance from LGED – IWRMU via the concerned staff at Upazila and District levels.

b) WMCA Bylaws, O&M Accounts and Record Keeping

Bylaws must be adopted by the WMCA to enable good functioning of the subproject and would cover the following:

- Meetings (annual & monthly) for discussion and setting of irrigation charges, planning of irrigation and planting dates, election of office bearers and O&M staff, etc.
- WMCA shares and share management.
- Duties of WMCA and O&M committee members, pump and system operators (linesmen), accountant, and remuneration (if any) to be paid to them.
- The Beneficiary list for the subproject, arranged by Irrigator and Rotation Unit to enable collection of irrigation charges.
- Book keeping and records of: (i) Irrigation Charges collected; (ii) Accounts of income and expenditure; (iii) Pumping hours; (iv) Maintenance planned / carried out; and (v) Records of meetings, etc.
- Annual Audit of WMCA Accounts by the DoC.
- Micro-credit activities (if any).

The WMCA is required to open an “Operating Account” to manage all funds collected and spent for operation and maintenance. This Account is usually separate from the O&M Reserve Fixed Deposit Account in which the up-front contribution was deposited, and also separate from the “Capital / Micro Credit Account”.

Attachment III-21
Operational Manual for
Gender Mainstreaming



FINAL DRAFT

**People Republic of Bangladesh
Ministry of Local Government, Rural Development & Cooperatives
Local Government Division**

Local Government Engineering Department (LGED)

Operational Manual for Gender Mainstreaming February-2018



**Small Scale Water Resources Development Project
Phase-2 (JICA-2)**

Assisted by:

Japan International Cooperation Agency



A III-21-1

Glossaries:

LGED	Local Government Engineering Department
IWRMU	Integrated Water Resources Monitoring Unit
SE	Superintended Engineer
PMU	Project Management Unit
PD	Project Director
PIU	Project Implementation Unit
XEN	Executive Engineer
UE	Upazila Engineer
AF	Agriculture Facilitator
FF	Fishery Facilitator
FS	Feasibility Study
DD	Detail Design
GDF	Gender Development Forum
GFP	Gender Focal Point
WG	Working Group
PC	Project Consultant
IDS/SIDS	Institution Development Specialist/ Senior Institution Development Specialist
GDS	Gender & Development Specialist
OC	Organizing Committee
FMC	First Management Committee
WMCA	Water Management Cooperative Association
MC	Management Committee
UZ	Upazila
UP	Union Parishad
SAAO	Sub Assistant Agriculture Officer
CO	Community Organizer
GF	General Facilitator
DWA	Department of Women Affairs
DAE	Department of Agriculture Extension
DoC	Department of Cooperative
DoF	Department of Fisheries
DLS	Department of Live Stock
O&M	Operation and Maintenance
P&D	Planning and Design
MIS	Monitoring Information System
RDA	Rural Development Association
BARD	Bangladesh Academy for Rural Development
RDRS	Rangpur-Dinajpur Rural Services
BFRI	Bangladesh Fisheries Research Institute
DYD	Department of Youth Development
SC	Sub Committee
SP	Sub-Project
MCSC	Micro Credit Sub Committee
GDSC	Gender & Development Sub Committee

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1. PURPOSE OF OPERATIONAL MANUAL

This Operational Guidelines prepared for implementation of gender activities addressing gender issues to achieve the target of gender action plan. The goal of this document is to provide concrete and operational guidelines on how to mainstream gender equality in specific areas of activities under the Project. These guidelines are aimed to provide an outline for implementers, decision-makers, beneficiaries and partners involved as well as stakeholders concerned in the implementation of Small Scale Water Resources Development Project, Phase-2 (JICA-2).

The guideline prepared based on the various project documents such as the final report on Small Scale Water Resources Development Data Collection Survey prepared by JICA, Detailed Project Proposal (DPP), the LGED's Gender Equity Strategy, Gender Action Plan of Water Sector Revised on December 2017, Sub-Project Development Process/Stages and implementation procedures of JICA-2 including the lessons learned from previous projects.

The Guidelines presents definitions and explanation of gender, International and National policies, strategies on Gender Equality and Women's Empowerment, Gender Activities under JICA-2, Gender Responsive Planning of the Project, Activity Flow Chart, and Implementation Procedures etc.

2. THE GOALS, OBJECTIVES OF SCALE WATER RESOURCES DEVELOPMENT PROJECT PHASE-II (JICA-2) IN THE CONTEXT OF GENDER

2.1 Goals and Objectives

A. Goals

To Decentralization of ruling system and establishment of institutions with administrative & economic power for the implementation of the project activities with the participation of the male and female.

B. Objectives

To establish the rights of the people of community population for the sake of community development, to be integrated with the national and international commitments for the proper implementation with the objective of eliminating discrimination among male and female;

Considering the commitments of the Government and Partners in preparation, implementation and monitoring of gender responsive plan and budget for all the activities under project.

The specific objectives are:

- To advance women's equitable participation with men as decision makers in subproject implementation process and WMCA activities;
- To mainstream a gender perspective in all activities under the project and WMCA through the formation of Gender Development Sub Committee; and
- To reduce gender inequalities in access to and control over the resources and benefits of development in the areas pertinent to the work of the subprojects.

3. GENDER, DEFINATION AND EXPLANATION:

Selected concepts central to Gender and Development thinking are explained here. These are intended to help explore some of the key ideas and issues in Gender and Development and their implications for policy and practice. The succinct explanations here are neither comprehensive nor definitive. Readers are recommended to consult for more detailed.

3.1 Gender and Sex

3.1.1 Gender

The term 'gender' means the different social orientation of the, male and female, in this regard it means the social relationship between them, and are generally used to explain the identity of the male and female developed through the socialization. Mainly the term 'gender' is used to explain the comparative/ different role of male and female in a society, their situation, position, responsibility and opportunity, relationship between male and female, discrimination in performing responsibilities.

Along with this, the heritage and historical causes are analyzed to specify and explain the different role of male and female in a society. In many sectors of existing ritual, the role of male and female are not specified only with the society and culture but also regulated by the economic and political activities.

3.1.2 Sex

The term of 'sex' is from an English word and generally used for universal identifications of male and female. Sex is explained as the biological gender. In Bengali grammar the term sex is use for explaining the difference of male, female, transgender and masculine gender. The natural/ biological/ physical distinction between men and women are specified by sex, which determines the person is male or female. This is universal and can never be changed.

What is Gender?

Sex refers to **biological** differences associated with being male or female.

Gender refers to the **socially** constructed stereotypes, roles, opportunities and relationships associated with being male or female.



**We are born as male or female;
We are socialized to become
boys and men or girls
and women,
In the process of socialization.**



The sex differences that are only a few are given undue importance and become accentuated. The innumerable similarities on the other hand are made invisible.

In applying a gender perspective, attention needs to be given to what has been called women's "special condition," *i.e.*, the social, economic and cultural factors and mechanisms which keep women in a situation of disadvantage and subordination with regard to men.

Table 1: Distinction between Sex and Gender

Distinction Between Sex and Gender	
Sex	Gender
Biological/ Physical	Social/ cultural/ physiological
Created naturally	Received from the culture
Universal	Different in different society, time, comparative situation and culture
Unchangeable	Changeable

3.2 Gender Mainstreaming

It is an organizational strategy to bring a gender perspective to all aspects of an institution’s policy and activities, through building gender capacity and accountability.

Any approach to mainstreaming requires sufficient resources, as well as high-level commitment and authority. A combined strategy can be particularly powerful. This involves the synergy of a catalytic central gender unit with a cross-sectoral policy oversight and monitoring role, combined with a web of gender specialists across the institution. The building of alliances both within the institution and with outside constituencies, such as women’s organisations, is crucial for success. Mainstreaming tools include gender training, introducing incentive structures which reward efforts on gender, and the development of gender-specific operational tools such as checklists and guidelines.

Gender Mainstreaming focuses on gender roles and relationships rather than on women only; it is designed to ensure that female and male have access to project resources and services, in relation to their actual responsibilities. Recognition of female’s constraints; responsibilities and know-how compared with those of male will be significant in terms of defining project/ programme activities: introduction of new technology; training; information-dissemination; extension strategies; credit and savings mechanisms; and marketing support.

“Beijing Platform for Action: ‘...governments and other actors should promote an active and visible policy of mainstreaming a gender perspective in all policies and programmes’ (cited in DAC, 1998:28”

3.3 Gender Analysis

Seeks to document and understand the roles of male and female systematically within a given context. Key issues include a) the division of labour for both productive and reproductive activities; b) access to, and control over, resources (land, labour, technology, services etc.) and benefits; c) social, economic and environmental factors which influence both of the above; d) decision-making capacity.

The systematic gathering and examination of information on gender differences and social relations in order to identify, understand and redress inequities based on gender. Gender analysis is a valuable descriptive and diagnostic tool for development planners and crucial to gender mainstreaming efforts. The methodology and components of gender analysis are shaped by how gender issues are understood in the institution concerned. There are a number of different approaches to gender analysis, including the Gender Roles or Harvard framework, and Social

Relations Analysis. The Gender Roles framework focuses on describing women's and men's roles and their relative access to and control over resources. The analysis aims to anticipate the impacts of projects on both productive and reproductive roles. It takes the household, rather than the breadth of institutions, as the unit of analysis and tends to assume that women are a homogeneous category.

'Gender analysis, once confined to the margins of development theory, has over the last ten years penetrated both the thinking and the operations of international development institutions' (Miller and Razavi, 1998: 4)

3.4 WID/GAD

3.4.1 Women in Development (WID)

In the field of international development assistance, the importance of women's participation in the development process and of advancement of women's status has been recognized since the 1960s. Especially after the 1970s, there has been growing emphasis on "Women in Development (WID)" as a development agenda. "WID" itself is a development issue to be addressed, but at the same time, it is also a cross-cutting issue with other development themes. It is even recognized as a development approach.

From the perspective of WID, it was generally considered that "the problems occur with women without ability, education, or income; therefore, it is women that have problems." It would often slide into "methodology," which advocates the idea that "in order to promote development efficiently, we should provide women with education and vocational training so that they can be effectively utilized." A passive approach to temporarily meet "practical gender needs" was adopted. Many development projects tend to focus exclusively on improving women's conditions without paying attention to factors surrounding them, such as their relations with family and relatives, social structures, and institutions. It remained difficult to transform gender stereotyped division of labor, and women rarely had any opportunity to try new roles or functions within families and communities. Consequently, there were not many improvements in women's economic and social status within households and communities that had been expected.

3.4.2 Gender and Development (GAD)

The Gender and development (GAD) addresses the specific roles, responsibilities and expectations of female and male in development efforts. The focus is on the relation between the different actors in the field. The Gender and development approach originated in the 1980's by socialist feminism. It served as a comprehensive overview of the social, economic and political realities of development. The diversity of this approach was open to the experiences and need of female in the developing world. Its two main goals were to prove that the unequal relationship between the sexes hinders development and female participation. The second, it sorts to change the structure of power into a long-term goal whereby all decision-making and benefits of development are distributed on equal basis of gender neutrality. The GAD approach is not just focused on the biological inequalities among sexes: male and female, however on how social roles, reproductive roles and economic roles are linked to Gender inequalities of: masculinity and femininity.

In contrast, the GAD (or Gender and Development) approach to development policy and practice focuses on the socially constructed basis of differences between male and female and

emphasises the need to challenge existing gender roles and relations GAD emerged from a frustration with the lack of progress of WID policy, in changing women's lives and in influencing the broader development agenda. GAD challenged the WID focus on women in isolation, seeing female's 'real' problem as the imbalance of power between male and female. There are different interpretations of GAD, some of which focus primarily on the gender division of labour and gender roles focus on gender as a relation of power embedded in institutions.

GAD approaches generally aim to meet both female's practical gender needs and more strategic gender needs (see Gender Needs 3.7), by challenging existing divisions of labour or power relations (see Gender Division of Labour in 3.7). Although WID and GAD perspectives are theoretically distinct, in practice it is less clear, with a programme possibly involving elements of both. Whilst many development agencies are now committed to a gender approach, in practice, the primary institutional perspective remains as WID and associated 'antipoverty' and 'efficiency' policies. There is often a slippage between GAD policy rhetoric and a WID reality where 'gender' is mistakenly interpreted as 'female'.

The basic philosophy of GAD is: to understand gender, social roles, and mutual relations of men and women in a target society, and to empower socially disadvantaged men and women to have their voices, to promote development that transforms economic and social structures and institutions. GAD intends to identify and address not only "practical gender needs" but also "strategic gender interests" to overcome gender biases and disadvantages that are not always recognized by women themselves.

3.5 Women's Multiple Roles

Both women and men have multiple work roles. These include production, essential household and community service, community management and political activities.

3.5.1 Productive Roles

Productive activities include all tasks that contribute to the income and economic welfare and advancement of the household and community. Women's productive roles include cash and subsistence farming, home-based industry/production and formal employment, both women and men have productive roles. Both women and men have these roles.

3.5.2 Reproductive Roles

Reproductive activities are those carried out to reproduce and care for the household. Women's reproductive roles include pregnancy, childbirth, breast-feeding and child rearing; only women have these roles. Only women have these roles.

3.5.3 Household and Community Services

Essential household and community services are those which must be carried out daily to meet the family's and community's basic needs, such as fuel and water collection, education, health care and food preparation. Mainly women play these roles.

3.5.4 Community Management and Political Activities

This refers to the management and conservation of resources for collective community consumption as well as participation in cultural and religious ceremonies, formal and informal

political activities and involvement in development organization, such as non-government organizations or women's groups. Both women and men play these roles.

3.6 Gender Division of Labour

The socially determined ideas and practices which define what roles and activities are deemed appropriate for male and female.

Whilst the gender division of labour tends to be seen as natural and immutable, in fact, these ideas and practices are socially constructed. This results in context-specific patterns of who does what by gender and how this is valued. Gender divisions of labour are not necessarily rigidly defined in terms of males and female's roles, as is sometimes assumed. They are characterised by co-operation in joint activities, as well as by separation. Often, the accepted norm regarding gender divisions varies from the actual practice. However, roles typically designated as female are almost invariably less valued than those designated as male.

Female are generally expected to fulfil the reproductive role of bearing and raising children, caring for other family members, and household management tasks, as well as home based production. Male tend to be more associated with productive roles, particularly paid work, and market production. In the labour market, although women's overall participation rates are rising, they tend to be confined to a relatively narrow range of occupations or concentrated in lower grades than men, usually earning less.

Female faces a double burden of paid work and reproductive work in the household. The gender division of labour within the household means that female bear the greatest burden of tasks. Unpaid work in the household and in society is not recognised as being of economic value and is not usually counted in systems of national accounts. Unpaid work in the household underpins much labour market inequality. Studies from around the world indicate that family care responsibilities and lack of childcare options severely constrain women's choices in employment. Public expenditure cuts in food subsidies, health, education, transport, infrastructure, childcare and social services affect women to a greater degree than men since it increases their household responsibilities and burdens.

Gender and development policies and programmes can challenge and change female's socially prescribed roles, in pursuit of gender equity. For example, female have been successfully trained and employed as water technicians or builders in communities where these were jobs previously a male domain. However, programmes aiming to increase women's participation in spheres beyond the household must ensure that they are properly remunerated. They should also be accompanied by consideration of how men, or public provision, can reduce women's responsibilities in the home.

'Female's labour is not infinitely elastic. It cannot stretch to cover all the deficiencies left by reduced public expenditure. It cannot absorb all the shocks of adjustment.' (Elson, 1995:15)

3.7 Gender Needs

Gender Needs is created due to inequitable division of labor, inequality in the field of opportunity, rights, dignity, power, decision making and choice between male and female. Shared and prioritized needs identified by female that arise from their common experiences as a gender

certain women's interests, of a political or practical nature, related to their experience as a gendered person. Such prioritized concerns have been translated into the concept of gender needs (Moser, 1989). This identifies the way in which female's gender interests, defined by female themselves, can be satisfied in the planning process. Although needs and interests are conceptually different (Molyneux, 1998), in practice, they are closely related in the planning process. Needs, as well as interests, result from a political process of contestation and interpretation and thus should not be externally defined or seen as fixed. 'Gender Need' are two types: Practical Gender Needs (PGNs) and Strategic gender needs (SGNs).

3.7.1 Practical Gender Needs (PGNs):

Practical Gender Needs (PGNs) according to Moser (1989) are the immediate needs identified by female to assist their survival in their socially accepted roles, within existing power structures. Policies to meet PGNs tend to focus on ensuring that female and their families have adequate living conditions, such as health care and food provision, access to safe water and sanitation, but also seek to ensure access to income-earning opportunities. PGNs do not directly challenge gender inequalities, even though these needs may be a direct result of female's subordinate position in the society.

Practical gender needs are the needs necessary for men/ women in the target society to execute their roles and responsibilities. For example, in a society where fetching water and cooking are considered to be women's roles, access to water, firewood, and food are necessary needs for women to execute their roles.

3.7.2 Strategic Gender Needs (SGNs):

Strategic gender needs (SGNs), are those needs identified by female that require strategies for challenging male dominance and privilege. These needs may relate to inequalities in the gender division of labour, in ownership and control of resources, in participation in decision-making, or to experiences of domestic and other sexual violence. These needs are often seen as feminist in nature as they seek to change female's status and position in society in relation to male. As such, they are more likely to be resisted than PGNs.

Strategic gender needs are the needs to transform unequal relations between men and women. When one sex is in a subordinate position to the other, achievement of equal rights is the strategic gender need. For example, protecting wives from domestic violence of husbands, providing them support for independence, and equal wages and rights for political participation.

In reality, it is difficult to distinguish so clearly between strategic and practical needs. Any policy or programme may meet both sets of needs. Through collective organizing around practical gender needs, female may achieve more strategic and transformational goals. This politicization of practical gender needs is a favoured entry point for NGOs and female's organizations.

However, female may not always recognize or prioritize their strategic gender needs, particularly if it could threaten their immediate practical needs. At any time, gender interests may not be prioritized over female's other interests which cut across these, such as those of class and race, so assumptions cannot be made of women's solidarity.

Table 2: Practical Gender Needs and Strategic Gender Needs Complement Each Other

Practical Gender Needs	Strategic Gender Needs
Helps in maintaining existing gender roles i.e. improving quality of life, minimize the burden of everyday's work.	Changes existing gender roles, establish of women's dignity, rights, control, power, choice etc.
Immediately needed, short-term, can be met promptly.	Long-term, cannot be met promptly or difficult to meet,
Based on the contextual perspective, it is different for different women.	Usually the same for all women.
Related to everyday needs, such as: food, nutrition, accommodation, fuel, drinking water, safe maternity etc.	Related to poor conditions or subordinate positions, such as: dignity, rights, control and powerless.
It is easy to identify for women.	Generally women cannot easily identify
Considering women as beneficiaries.	Women are considering as representatives of change or driving force
Changes the condition of women.	Develops the position of women
Does not change existing role (gender roles) of women or the subordinate conditions of women in the society.	Helps empowerment of women by changing their existing role (gender roles)
Does not develop relationships (gender) between men and women.	Improve relationships (gender) between men and women.
Possible to meet these needs by providing necessary products/goods or services, such as: food and nutrition help, providing tube well, establish sanitary latrine, supplying improved oven, health service etc.	Possible to meet these needs by adopting consistent efforts in the field of education, awareness raising, organization, motivation, involvement in politics, self-reliant etc.
The status of women will go back to the previous condition if the ways to meet these needs, the material or conditions are withdrawn.	Once the demand is met or achieved it cannot be withdrawn.

3.8 Gender Equality & Equity

The term 'gender equity' is often used interchangeably with 'gender equality'. Here, a distinction is drawn between these two concepts, reflecting divergent understandings of gender differences and of the appropriate strategies to address these. Gender equality denotes female having the same opportunities in life as men, including the ability to participate in the public sphere.

3.8.1 Gender Equality

Gender Equality is equal treatment of male and of female. For example, equal pay for equal work, equal numbers of male and female beneficiaries, equal representation of male and of female in staffing, equal allocation of budget and other resources for men and for female's activities.

Gender equality implies a society in which male and of female enjoys the same opportunities, outcomes, rights and obligations in all spheres of life. Equality between male and of female exists when both sexes are able to share equally in the distribution of power and influence; have equal opportunities for financial independence through work or through setting up businesses; enjoy equal access to education and the opportunity to develop personal ambitions. A critical aspect of promoting gender equality is the empowerment of women, with a focus on identifying and redressing power imbalances and giving female more autonomy to manage their own lives. Women's empowerment is vital to sustainable development and the realization of human rights for all. Empowering women is also an indispensable tool for advancing development and reducing poverty. Gender equality is, first and foremost, a human right. Women are entitled to live in dignity and in freedom from want and from fear. But equity means fair and impartial justice, both are equally.

3.8.2 Gender Equity

Gender Equity is appropriate and fair allocation of human, material and financial resources in function of the specific needs and problems of female and male in a given context. For example, women field staff cannot travel alone with a driver, but male can travel on a motor bike, an equitable allocation would be one bike per male field worker, and one car plus driver per two female field workers in order to achieve the same amount of extension work.

Gender equity denotes the equivalence in life outcomes for female and male, recognising their different needs and interests, and requiring a redistribution of power and resources.

The goal of gender equity, sometimes called substantive equality, moves beyond equality of opportunity by requiring transformative change. It recognises that female and male have different needs, preferences, and interests and that equality of outcomes may necessitate different treatment of men and women.

An equity approach implies that all development policies and interventions need to be scrutinised for their impact on gender relations. It necessitates a rethinking of policies and programmes to take account of male's and female's different realities and interests. So, for example, it implies rethinking existing legislation on employment, as well as development programmes, to take account of female's reproductive work and their concentration in unprotected, casual work in informal and home based enterprises.

It is worth examining the content of policies, not just the language, before deciding whether equity or an equality approach is being followed. Gender equity goals are seen as being more political than gender equality goals, and are hence are generally less accepted in mainstream development agencies.

3.9 Gender Demand

From the above discussion it is clear that the females are in backward in condition and position in our society and country. To reach the equilibrium condition, it requires some special initiatives

for the backward population which are female. This demand is called gender demand. If these demands are fulfilled, it will play role to overcome the backwardness. As the female are backward in both condition and position. So, gender demand is also two types. Realistic and strategically gender demand. The realistic gender demand assists the female to overcome the conditional backwardness. Many of the steps are planned under project considering gender demand such as; different training for the development female leadership, empowerment, employment, scope of participation in decision making process etc.

3.10 Gender Planning

The purpose of gender planning is to ensure gender-sensitive policy outcomes through a systematic and inclusive process. If gender policy has transformatory goals, then gender planning as a process will necessarily be a political one, involving consultation with and participation of different stakeholders.

Whilst gender transformatory policies are increasingly being generated, concerns are focusing on the 'misbehaviour' of such policies, i.e. a tendency to slip in implementation from transformatory objectives to outcomes that fail to challenge existing gender relations. It has been recognised that GAD approaches are constrained by resistance and subversion, from within both implementing organisations and targeted communities. Gender planning needs therefore to be part of an on-going process of gender mainstreaming, backed up by sufficient resources, commitment and authority. Gender planning procedures need to involve the participation of stakeholders and clear lines of accountability.

At the project level, a variety of planning tools are used to operationalize gender policy, including general and sector-specific checklists and guidelines. Gender Action Plan a planning tool which, if used in a gender-sensitive manner, can help to ensure accountability, participation of various stakeholders, and that relevant monitoring and evaluation procedures are implemented.

3.11 Women's Human Rights

The recognition, that women's rights are human rights and that women experience injustices solely because of their gender. The UN Universal Declaration of Human Rights (1948) laid out the idea of the universality of rights, but failed to take into account women's needs and interests as women. Its focus was on formal political and civil rights, hence conceiving rights to be relevant to the 'public' rather than the 'private' sphere. As such, violations of women's bodily integrity, which occurred in the private sphere were not part of the human rights discourse. The Convention on the Elimination of all forms of Discrimination against Women (CEDAW) established in 1979 marked an important step towards explicit prohibition of discrimination against women. During preparations for the World Conference on Human Rights in Vienna (1993), women's groups mobilised around the slogan of "Women's rights are human rights!" which signifies the indivisibility of women's rights from universal human rights. Participants in the UN Beijing Women's Conference (1995) continued with this call, attempting to broaden the conception of rights to include social, economic, and cultural rights, as well as reproductive and sexual rights put on the agenda at the 1994 Cairo population conference.

Whilst there has been progress in the recognition of women's human rights in international human rights instruments this has not been matched by progress in the implementation and enforcement of these rights by state bodies. Many countries have failed to ratify CEDAW, and some that have

ratified it have failed to uphold it. Even when international and national laws recognise women's human rights, they may be undermined by patriarchal customary laws or social practices. Furthermore, human rights advocates, including those promoting women's rights, face challenges from those who regard human rights discourse as a western, imperialist imposition on other cultures. Mobilisation of women to claim their rights is essential in order to press for reforms, and for the implementation and enforcement of human rights and national legal instruments. This requires strategies of capacity-building in terms of literacy, legal knowledge, and political participation. Gender-awareness training for the judiciary and the police, in addition to strengthening women's participation in these fields, is also crucial.

3.12 Women Empowerment

A 'bottom-up' process of transforming gender power relations, through individuals or groups developing awareness of women's subordination and building their capacity to challenge it. The term 'empowerment' is now widely used in development agency policy and programme documents, in general, but also specifically in relation to women. However, the concept is highly political, and its meaning contested. Thus, there are dangers in the uncritical overuse of the term in agency rhetoric, particularly where it becomes associated with specific activities, or used in simplistic ways.

Empowerment cannot be 'done to' women, appropriate external support can be important to foster and support the process of empowerment. A facilitative rather than directive role is needed, such as funding women's organisations that work locally to address the causes of gender subordination and promoting dialogue between such organisations and those in positions of power. Recently, interest has grown among development professionals in approaches to measuring women's empowerment, particularly in relation to microcredit programmes. A number of 'indicators of empowerment' have been developed in different contexts. Again, caution must be exercised in assuming that empowerment can be externally defined and objectively assessed, or that such indicators can be easily transferred.

The process in which women can be established as in the same position of the male is called women empowerment. The objective of the empowerment process is to bring change to the source and structure of power which creates and maintain the backwardness and uniqueness of the women in the society and create opportunity to materialistic and information. The empowerment of the women is not only an issue for the female, this is a social issue. As because, the empowerment of the women also brings materialistic and physiological freedom to the male, and makes the male free from traditional dominating role.

The main two issues as the cause of discrimination between male and female universally are- regular daily works of male and female, distinction of role and responsibility and limited rights of women that the men. Such as-

- In case of resources- finance, loan, employment, leisure, and recreation, etc.
- In case of choice- control, freedom, marriage, conceive and carrying and caretaking the children, etc.
- In case of decision making- power and policy making, etc.

Beijing Declaration: ‘Women’s empowerment and their full participation on the basis of equality in all sphere of society, including participation in the decision-making process and access to power, are fundamental for the achievement of equality, development and peace (paragraph 13).’ (cited in DAC, 1998: 10)

Table 3: Quick Definitions

Culture	The distinctive patterns of ideas, beliefs, and norms which characterize the way of life and relations of a society or group within a society
Gender Analysis	The systematic gathering and examination of information on gender differences and social relations in order to identify, understand and redress inequities based on gender
Gender Discrimination	The systematic, unfavorable treatment of individuals on the basis of their gender, which denies them rights, opportunities or resources
Gender Division of Labour	The socially determined ideas and practices which define what roles and activities are deemed appropriate for female and male
Gender Equality and Equity	Gender equality denotes female having the same opportunities in life as male, including the ability to participate in the public sphere Gender equity denotes the equivalence in life outcomes for women and men, recognizing their different needs and interests, and requiring a redistribution of power and resources
Gender Mainstreaming	An organizational strategy to bring a gender perspective to all aspects of an institution’s policy and activities, through building gender capacity and accountability
Gender Needs	Shared and prioritized needs identified by female that arise from their common experiences as a gender
Gender Planning	The technical and political processes and procedures necessary to implement gender-sensitive policy
Gender Relations	Hierarchical relations of power between female and male that tend to disadvantage women
Gender Training	A facilitated process of developing awareness and capacity on gender issues, to bring about personal or organizational change for gender equality
Gender Violence	Any act or threat by male or male-dominated institutions, that inflicts physical, sexual, or psychological harm on a woman or girl because of their gender 3 Intra-household
Resource Distribution	The dynamics of how different resources that are generated within or which come into the household, are accessed and controlled by its members
National Machineries for Women	Agencies with a mandate for the advancement of female established within and by governments for integrating gender concerns in development policy and planning
Patriarchy	Systemic societal structures that institutionalize male physical, social and economic power over female

Sex and Gender	Sex refers to the biological characteristics that categorise someone as either female or male; whereas gender refers to the socially determined ideas and practices of what it is to be female or male
Social Justice	Fairness and equity as a right for all in the outcomes of development, through processes of social transformation
WID	The WID (or Women in Development) approach calls for greater attention to women in development policy and practice, and emphasizes the need to integrate them into the development process In contrast,
GAD	GAD (or Gender and Development) approach focuses on the socially constructed basis of differences between male and female and emphasizes the need to challenge existing gender roles and relations
Women's Empowerment	A 'bottom-up' process of transforming gender power relations, through individuals or groups developing awareness of female's subordination and building their capacity to challenge it
Women's Human Rights	The recognition that women's rights are human rights and that women experience injustices solely because of their gender

4. CAUSES OF GENDER DISCRIMINATION

The systematic, unfavourable treatment of individuals on the basis of their gender, which denies them rights, opportunities or resources Across the world, women are treated unequally and less value is placed on their lives because of their gender. Women's differential access to power and control of resources is central to this discrimination in all institutional spheres, i.e. the household, community, market, and state.

Within the household, female and girls can face discrimination in the sharing out of household resources including food, sometimes leading to higher malnutrition and mortality indicators for female. (See Intra-household Resource Distribution). At its most extreme, gender discrimination can lead to son preference, expressed in sex selective abortion or female feticide. In the labour market, unequal pay, occupational exclusion or segregation into low skill and low paid work limit women's earnings in comparison to those of men of similar education levels. Women's lack of representation and voice in decision making bodies in the community and the state perpetuates discrimination, in terms of access to public services, such as schooling and health care or discriminatory laws. Various causes of gender discrimination are described below:

4.1 Cultural and Ideological

- Existing socialization process of creating traditional views and concepts regarding men and women;
- Cultural explanation of the existing role of male and female;
- Existing ideology of expressing male vanity and ownership mentality over the female and the children;
- Considering the family as the personal periphery of the male dominating issue.

4.2 Economic

- Economic dependency of female on the male;

- Limited opportunity of the women to get financing and loan;
- Creates obstacles regarding Inheritance, ownership of land, utilization of demesne land, divorce, maintenance of resources after being widow;
- Considering the male as the income generating factor of the society.

4.3 Legal

- Laws and regulations discriminating for the female in divorce, maintenance of children, and inheritance;
- Limitation of explanation and definition of rape and domestic violence against women;
- Lack of knowledge of the female regarding law and regulations;
- Insensitive and injudicious behavior of the police and judicial system towards the women and children;
- Though there are laws and regulations in favor of the women but are not getting proper importance in application.

4.4 Political

- The representation of the women in power, politics, mass media, legal and medical profession is very limited;
- Considering the family as a personal institute beyond the state control;
- Limitation of the women organization as a political force;
- Limited participation of the women in organized political system;
- Existing concept that, women are weak in leadership.

“Not all women are poor, and not all poor people are women, but all women suffer from discrimination” (Kabeer, 1996:20)

5. CONDITION AND POSITION OF MEN AND WOMEN IN THE SOCIETY

A. Condition

This term is mainly used for explaining the material condition and facilities of any person, and this term 'condition' is used in social science to discuss the issues connected with the living standard of male and female in the society. The civil/ materialistic component usually considered to explain 'condition', are- food, nutrition, clothing, pure drinking water, sanitation system, fuel, income, etc. which are closely connected with life.

Table 4: Present Condition of Female in the Family, Society and State

Sector	Female	Male
Family	<ul style="list-style-type: none"> • Carry out the household responsibilities in the family; • Get less facilities in food and nutrition, education and other sectors; • Get less opportunity to income comparatively with the labor they put in their works; • Dilemma with long labor days 	<ul style="list-style-type: none"> • Mainly involved in income generating activities out of households; • Enjoys more facilities in education, food and nutrition, health and other services; • Get more scope of income comparatively with the labor they put in their works;

Sector	Female	Male
	<ul style="list-style-type: none"> Gets less opportunity of leisure and rest; Neglected and submissive When there are plenty of civil/ materialist facilities available in the family, even than the female do not get chance to use their necessary parts; 	<ul style="list-style-type: none"> Gets more opportunity of leisure and rest; Mostly Independent Usually male uses the civil and materialistic facilities more than the female in the family;
Society	<ul style="list-style-type: none"> Less opportunity of participating in the social activities and to enjoy the social facilities; Generally dependent 	<ul style="list-style-type: none"> More opportunity than female of participating in the social activities and to enjoy the social facilities; Self-reliant
State	<ul style="list-style-type: none"> Limited participation in politics; Though voting rights is recognized by the state, but they faces different obstacles in exercising this rights practically; Limited access to the manpower sector and their contribution is not properly reflected in the national economy. 	<ul style="list-style-type: none"> Free access and participation in politics including options to involved in everything more than the female; Can freely cast their votes; More access to the manpower sector, and proper reflection in the national economy.

B. Position

In the discussion of social science, this term is generally used to explain the honor or status of any person in the society. And obviously control and rights over the assets are closely connected with status. Power, freedom and opportunity of expression, power of decision making, choice, opportunity, etc. also connected with status of the person. The position of a person in the family, society and state defines the status of that person. Sometimes, the term condition and position are in the same meaning. But there are specific distinctions between the terms. Further it can be mention that, 'condition' means the civil/ materialistic components, and 'position; defines the status of a person.

Table 5: Present Position of Female and Male in the Family, Society and State

Sector	Female	Male
Family	<ul style="list-style-type: none"> There are not such rights, command and control over assets; Lack of opportunity to express own opinion on decision making, choice and dislikes, wills and dis-wills, and opinion; Deprived and dominated from different facilities in the family; Do not have priority of using orientation and designation in the family; No authority and controlling role; Usually do not get the ownership of family property. 	<ul style="list-style-type: none"> Over all rights, command and control over assets; Prime opportunity to express own opinion on decision making, choice and dislikes, wills and dis-wills, and opinion; Gets more and over all facilities in the family; Males usually have the priority of using orientation and designation in the family, free and possess the status; They have the authority and controlling role in the family; Usually get the ownership of family property.

Society	<ul style="list-style-type: none"> • Absent in participating in social activities, policy making and leadership; • Face random discrimination for religious backward thinking; • The dependency and sufferings of the women are controlled and defined by the long social rituals and cultural heritage; • Most of the female have to be dependent on others; • Females are deprived, ignored and vulnerable here. 	<ul style="list-style-type: none"> • Plays the pioneer role in participating in social activities, policy making and leadership; • Do not faces discrimination for religious backward thinking; • Male are the main income generating person of the society so they are not controlled by the social rituals and cultural heritage; • The male do not need to depend on any other in the family; • Male in the society poses the strong position as they are not dependent to any other.
State	<ul style="list-style-type: none"> • Get less opportunity to participate in economic and political activities; • Have to face professional and legal discrimination. 	<ul style="list-style-type: none"> • Get over all opportunity to participate in economic and political activities; • The males are in most favorable position in professional and legal issues.

6. GENDER PERCEPTION

6.1 International Perception:

At international level, there is a marked commitment towards achieving gender equality at all levels of the society. In the background of this commitment, bilateral and multilateral agencies are engaged in the processes that seek to mainstream gender equality in all areas of their work, such as, poverty, health and environmentally sustainable development. A number of international processes on human rights also make clear commitments to gender equality. A series of international conferences has addressed the rights of women and girls. The Human Rights Conference in Vienna (1993) affirmed the interconnectedness of rights from a gender perspective. This was reiterated at the Fourth World Conference on Women held in Beijing in 1995.

Participants identified twelve areas of concern and developed a Platform for Action for the world community. The areas include removal of poverty, participation in economy and environment, health, education, prevention of violence, human rights, right to property, image in media, development of government machinery and discrimination against girl children. The Committee on the Elimination of Discrimination against Women of 1997 explicitly makes a commitment to address uneven social conditions in order to eliminate discrimination against women in all spheres of life including state, economy, family and society.

6.1.1 The Beijing Platform for Action: Inspiration Then and Now:

An unprecedented 17,000 participants and 30,000 activists streamed into Beijing for the opening of the Fourth World Conference on Women in September 1995. They were remarkably diverse, coming from around the globe, but they had a single purpose in mind: gender equality and the empowerment of all women, everywhere.

Two weeks of political debate followed, heated at times, as representatives of 189 governments hammered out commitments that were historic in scope. Thirty thousand non-governmental

activists attended a parallel Forum and kept the pressure on, networking, lobbying and training a global media spotlight. By the time the conference closed, it had produced the Beijing Declaration and Platform for Action, the most progressive blueprint ever for advancing women's rights.

As a defining framework for change, the Platform for Action made comprehensive commitments under 12 critical areas of concern. Even 20 years later, it remains a powerful source of guidance and inspiration. Critical areas of concern:

1. Women and Poverty
2. Education and Training of Women
3. Women and Health
4. Violence against Women
5. Women and Armed Conflict
6. Women and the Economy
7. Women in Power and Decision-making
8. Institutional Mechanism for the Advancement of Women
9. Human Rights of Women
10. Women and the Media
11. Women and the Environment
12. The Girl-child

6.1.2 Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW):

The Committee on the Elimination of Discrimination against Women of 1997 explicitly makes a commitment to address uneven social conditions in order to eliminate discrimination against women in all spheres of life including state, economy, family and society.

“Convention on the Elimination of All Forms of Discrimination Against Women” have been accepted through general consent of all the members of general assembly of the United Nations in December 18, 1979 to establish equal rights eliminating all the existing discriminations among male and female. In English this is expressed as Convention on the Elimination of All Forms of Discrimination Against Women and in brief “CEDAW”.

Signatures as assent to this convention have started on March 1, 1980, and it activated from March 3, 1981. 165 countries among the world have signed expressing their approval since December 31, 1999.

As of 2008 more than 185 countries have signed the CEDAW and of them 151 countries have ratified it and agreed to implement CEDAW through their constitutional and legal frameworks.

Bangladesh has signed this convention on November 6, 1984. Though the country has ratified CEDAW with reservations on Articles 2, 13(a), 16.1(c), and (f) while signing. Up next, Bangladesh has withdrawn its reservation on article 13(a) and 16.1 (f) on July 24, 1997 according to the recommendation of the national level review committee formed to withdraw the restrictions. The process of withdrawing reservation on article 2 and 16.1 9 (c) is under process yet.

The main essence of the CEDAW convention is, to recognize women according to their important role in advancement of the society and the civilization from the beginning, ensuring establishment of equality among male and female in all fields of human endeavour, and take all appropriate measures to ensure the development and advancement of women as human being.

All the signatory countries are committed to establish equality among the male and female in social, economic, political, cultural and overall civil aspect. With this objectives states will revise and will introduce new laws if necessary to change the existing laws, social and cultural norms or system which creates discrimination. Along with this, states will take all the necessary initiatives for proper implementation of acts.

Article 1: Definition of ‘Discrimination Against Women’

Article 2: Obligation to Eliminate Discrimination

Article 3: Guarantee of Basic Human Rights and Development of Women

Article 4: Temporary Special Measures

Article 5: Elimination of Sex Role Stereotyping

Article 6: Suppression of Trafficking and Exploitation of Women

Article-7: Elimination of Discrimination against Women in Political and Public life

Article 8: Equal Opportunity for International Representation and Participation

Article 9: Equal rights with regard to Nationality

Article 10: Equal Rights in the Field of Education

Article 11: Equal Employment and Training Opportunities

Article 12: Equality of Access to Health-care

Article 13: Equal Rights with Regard to Economic and Social Benefits

Article 14: Eliminate Discrimination against Women in Rural Areas

Article 15: Equality before the Law and Civil Matters

Article 16: Equality in Marriage and Family Law

6.1.3 JICA Strategies and Actions Gender Equality and Women’s Empowerment

Being the largest development partner of Bangladesh JICA has been implementing its projects focusing the gender equality and women empowerment. Promoting gender equality and women’s empowerment is a key to achieving sustainable and equitable development. Gender equality is a matter of fundamental human rights. In addition, gender equality and women’s empowerment are crucial drivers of development progress. Evidence vigorously suggests that gender equality and women’s empowerment are vital for improving economic, social, and political conditions and fostering poverty reduction and economic development.

Decades-long efforts of the international community, including towards the Millennium Development Goals (MDGS) have remarkably reduced gender disparities in health, education, employment and political participation. However, substantial gender inequality persists and women remain disadvantaged and vulnerable in many ways around the world. These include gender disparities in girls’ secondary education enrolment and completion; high maternal mortality rates; women’s unequal access to economic resources; disproportionate burdens of unpaid work; legal and social discrimination against women and girls; and widespread gender-based violence. In settings affected by conflict, natural disasters and other crises, gender inequalities are often magnified and their negative impacts on development are exacerbated.

The international community now has strongly committed to promoting gender equality and women’s empowerment, using the UN Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and the Beijing Declaration and Platform for Action, adopted at the Fourth World Conference on Women in 1995, as a guide. The UN Millennium Declaration and the Millennium Development Goals (MDGs), adopted in 2000, have clearly outlined the promotion of gender equality and women’s empowerment as an important goal to be achieved by 2015. The UN resolution 1325 adopted in 2000 also calls for strengthening women’s

participation as peacemakers and peace builders. This includes activities in conflict prevention and recovery, governance and peace operations.

JICA has strengthened its efforts for gender equality and women's empowerment based on both global and national mandates. JICA promotes "gender mainstreaming" as a comprehensive approach to achieve gender equality in all fields of society and incorporate the perspective of gender in all policies, programs and projects. JICA is committed to gender equality and women's empowerment in all areas in developing countries.

A. Visions and Strategies

JICA envisions "Inclusive and Dynamic Development" in its efforts for promoting human security, poverty reduction, sustainable economic growth and improving governance in its partner countries. Gender equality and women's empowerment are essential for achieving Inclusive and Dynamic Development. JICA has been adopting gender mainstreaming as the key strategy for promoting gender equality and women's empowerment across the work of its operations. JICA recognizes women as a key agent of change for development, and ensures that women have an equal voice and leadership in decision-making in all its interventions.

B. Priority targets

JICA will focus on the following targets:

- End all forms of discrimination against all women and girls everywhere
- Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
- Recognize and value unpaid care and domestic work through the provision of public services, infrastructure, and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate
- Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life
- Ensure universal access to sexual and reproductive health and rights.

C. Priority Areas of Interventions

JICA will make strategic investments in its gender mainstreaming efforts to promote gender equality and women's empowerment by focusing on five priority areas as follows:

- I. Promote Women's Economic Empowerment,
- II. Ensure Women's Rights and Security, (protection from conflict, natural disasters, and trafficking in persons),
- III. Promote women's education and lifetime health,
- IV. Promote Gender Responsive Governance,
- V. Promote Gender Responsive Infrastructure, especially for the improvement of women's lives.

JICA continues to focus on these five priority areas. JICA also places importance on discussions with developing countries as to how to promote gender equality and the empowerment of women effectively based on each country's social and economic structure.

Operational Approach:

1. Diversity and socio-culturally sensitive approach:

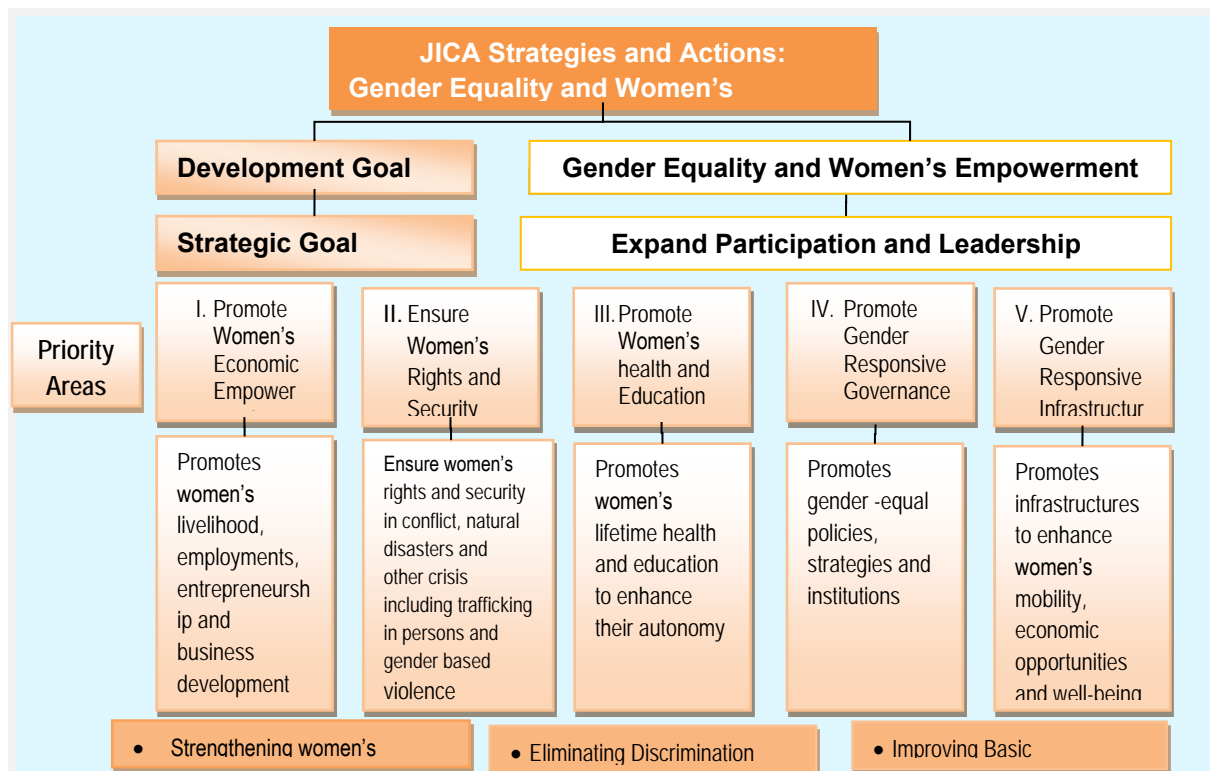
Gender equality and women's empowerment cannot be achieved without considering the socio-cultural contexts in which men and women live. JICA will adopt inclusive approaches to development, paying due attention to the diversity of people, including gender, ethnicity, age, education, and other socio-economic attributes.

2. Harness schemes for impact :

JICA will strengthen its efforts to address gender equality and women's empowerment by combining the three schemes of Technical Cooperation, Loan Assistance, and Grant Aid, as appropriate.

3. Partnership :

JICA will further enhance partnerships with civil society, national and international NGOs and international development organizations.



6.2 National Perception:

The government of Bangladesh has clearly expressed its commitment for actions leading to women's empowerment and realization of their human rights. The principles of gender equality are embedded in the Constitution of the People's Republic of Bangladesh. Women's rights to equality and affirmative action in support of equality are guaranteed in the Constitution. The constitution of Bangladesh ensures the human rights and basic freedom of women. Keeping the view in mind, the government of Bangladesh developed National Women Development Policy in

1997 for the first time. It was subsequently updated in 2011 to ensure development and empowerment of women. The government of Bangladesh has firm commitment in favour of women development and gender equity. Like other countries of the world, Bangladesh also recognized women advancement and gender equity for attaining human rights, poverty reduction and sustainable economic & social development.

6.2.1 Gradual development of the condition of women in the local Government and present situation

There were no voting powers of the women before 1947 in this country. In the post liberation period the women get first voting rights in 1956 on the basis of universal voting rights. Before that the males have their rights to cast votes on the election of the local Government. Though there is no information regarding the participation of women in the election of the local Government before independence of Bangladesh. Can be imagined that, only one female candidate was been elected as the chairman in the union partisan in the year 1973 for the first time in the history of this soil. Practically the beginning of the direct participation of the women in local Government was through that election. But the issue of the backwardness of the women was not a matter of thought yet.

The government preserved only two seats in the election of the union parishad for the first time in the year 1976 and this number was improved to three in the year 1983. In the year 1993 there was an arrangement of election through the parishad instead of selection. After that, in the year 1997 there were arrangement of direct election for the women in three preserved seats. After that, one third of the total number of wards been preserved for the women through the pourashava ordinance in the year 1998. In city corporations one third of the wards were been preserved for the women from the beginning. Seats for the women have been preserved for the women in upazila parishad act- 1998. At present the female are participating in general seat along with the reserved seats in all the election of local Government. But the features of the number of elected female in the general seats along with the preserved seat are not satisfactory.

6.2.2 Rights of the Male and Female in the Constitution of Bangladesh

To establish the rights of the women through eliminating the discrimination and violence against women during the period of different Government both within the house and outside the house, and different initiatives have been initiated for the development of the women. The principles of gender equality are embedded in the Constitution of the People's Republic of Bangladesh. Women's rights to equality and affirmative action in support of equality are guaranteed in the Constitution. The rights of the male and female according to the Constitution of the People's Republic of Bangladesh are as bellows-

Emancipation of peasants and workers

14. It shall be a fundamental responsibility of the State to emancipate the toiling masses the peasants and workers and backward sections of the people from all forms of exploitation.

15. (d) the right to social security, that is to say, to public assistance in cases of undeserved want arising from unemployment, illness or disablement, or suffered by widows or orphans or in old age, or in other such cases.

Equality of opportunity

19. (1) The State shall endeavor to ensure equality of opportunity to all citizens.

(2) The State shall adopt effective measures to remove social and economic inequality between man and man and to ensure the equitable distribution of wealth among citizens, and of opportunities in order to attain a uniform level of economic development throughout the Republic.

(3) The State Shall endeavor to ensure equality of opportunity and participation of women in all spheres of national life.

Equality before law

27. All citizens are equal before law and are entitled to equal protection of law.

Discrimination on grounds of religion, etc

28. (1) The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex or place of birth.

(2) Women shall have equal rights with men in all spheres of the State and of public life.

(3) No citizen shall, on grounds only of religion, race, caste, sex or place of birth be subjected to any disability, liability, restriction or condition with regard to access to any place of public entertainment or resort, or admission to any educational institution.

Equality of opportunity in public employment

(4) Nothing in this article shall prevent the State from making special provision in favour of women or children or for the advancement of any backward section of citizens.

Equality of opportunity in public employment

29. (1) There shall be equality of opportunity for all citizens in respect of employment or office in the service of the Republic.

(2) No citizen shall, on grounds only of religion, race, caste, sex or place of birth, be ineligible for, or discriminated against in respect of, any employment or office in the service of the Republic.

(3) Nothing in this article shall prevent the State from –

a) Making special provision in favour of any backward section of citizens for the purpose of securing their adequate representation in the service of the Republic;

c) Reserving for members of one sex any class of employment or office on the ground that it is considered by its nature to be unsuited to members of the opposite sex.

36. Subject to any reasonable restrictions imposed by law in the public interest, every citizen shall have the right to move freely throughout Bangladesh, to reside and settle in any place therein and to leave and re-enter Bangladesh.

38. Every citizen shall have the right to form associations or unions, subject to any reasonable restrictions imposed by law in the interests of morality or public order:

65. (3) Until the dissolution of Parliament occurring next after the expiration of the period of ten years beginning from the date of the first meeting of the Parliament next after the Parliament in existence at the time of the commencement of the Constitution (Fourteenth Amendment) Act, 2004, there shall be reserved fifty seats exclusively for women members and they will be elected by the aforesaid members in accordance with law on the basis of procedure of proportional representation in the Parliament through single transferable vote.

6.2.3 Objectives of Women Development in line with the Constitution

1. To eliminate the existing discrimination between men and women in every level of the society and the state.
2. Empowerment of women in national and international aspect.
3. Eliminations of poverty.
4. Empowerment of women through education and training.
5. Resist the violence against women.
6. To establish the human rights of the women.

6.2.4 Rights and facilities for the women in Bangladesh at Government level

The source of power in our country is our independent parliament, 30 seats among the total of 330 seats in the parliament is reserved for the women. Beside this, women can participate in the election of the general seats if they wish. There are 6 elected women in the present parliament, who have been elected through compilation with the men. There are 4 women in the ministry as minister at present in Bangladesh. The percentage of women in the parliament is 11.5, and 12.5 in the ministry. The women of Bangladesh are more advanced in decision making and leadership than other countries. From 1991 women are governing the country as chief of the Government and other women is in role of leader of the opposition.

Government has declared the women development policy on 2011. The goals of the women development policy are as bellows;

- To establish equality among the men and women in every aspect of the society and state;
- To ensure safety and security of women in every aspect of the state, society and family life;
- To ensure the political, social, administrative and economic empowerment of women;
- To establish the human rights of the women;
- To build up the women as educated and efficient human resources;
- To make the women community free from the cruel attack of poverty;
- To eliminate the existing discrimination between men and women;
- To ensure the proper recognition of the women in social and economic aspect;
- To eliminate the discrimination on women and girls;
- To innovate and import technology in favor of the women;
- To take proper initiatives to ensure the good health and nutrition of the women;
- To ensure priority of women in sheltering project and ensure the shelter for women;
- To initiate rehabilitation project for the victim women by natural disasters and armed clashes;
- Take proper initiatives to satisfy the demand of the extremely poor women;
- Take initiatives to ensure safety of the widow, parents less, divorced, women;
- To represent the positive impression of the women and girls, and gender issues in mass media;
- To cooperate the brilliant and prosperous women to improve their creative merit;
- To provide necessary assistance in women development.

6.2.5 Women Development Programs at Government level

The ministries of women welfare have been established in the year 1978 for the overall development of the women. Women division has started in 1984. There are offices of the division

in every district and in 136 police stations. The association for the women is working for the welfare of the women under ministry of women welfare.

The following programs are under implementation by the Government for the welfare of the women:

1. Loan providing program for the women,
2. Poverty eliminating program for the women,
3. Women assistance center,
4. Develop awareness for the development of women,
5. Scholarship training for the women on population activities,
6. Development program for the rural women,
7. Urban based women development project,
8. VGD program, to make the poor women independent through foods for works.

Table 6: National and international commitments of the Government

Name	Date of preparation and acceptance	Date of the approval of the Bangladesh Government
Universal declaration of the human rights	The council of the united Nations received and issued the universal declaration of the human rights as the general criteria of progress of all the nation and people of the world in December 10, 1948.	The Government of the people's republic of Bangladesh have committed to follow all the thirties article from that date as being a member of the general member of the united Nations.
Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)	The convention have been accepted in the general council of the United Nations on December 18, 1979.	The Government of the people's republic of Bangladesh have approved that documents on December- 6, 1984.
Beijing platform for action (PFA)	In the documents of the fourth international women conference held on 1995 in Beijing, 12 issues for the development of women was accepted as to do for the Government, international community and NGO's.	The Government of the people's republic of Bangladesh have been agreed in that conference.
Millennium Development Goals (MDGs)	The chief of 189 states were gathered in the millennium summit on the September of 2000. After the completion of the summit the declaration of the chiefs of states is known as historical millennium goals declaration from which millennium development goals (MGD) have come.	The Government of the people's republic of Bangladesh have made commitments to fulfill 18 target and 48 indicators of the MDG within 2015.
Constitution of the people's republic of Bangladesh.	The Government of the people's republic of Bangladesh have declared the construction on 1972.	The year 1972

Name	Date of preparation and acceptance	Date of the approval of the Bangladesh Government
National women development policy 1997	The Government of the people's republic of Bangladesh have introduced the National Women development policy in 1997 for the first time in line with the Beijing PFA.	National women development policy was declared on 8 March 1997.
National women development policy 2011	National women development policy 2011 have been introduced for ensuring women empowerment, equal rights and opportunities.	The Government of the people's republic of Bangladesh have introduced the National Women development policy in 2011.

6.2.6 National Women Development Policy, 2011.

A large number of populations in Bangladesh are women. So, the development of women is one of the most important part and pre-condition of national development. To ensure equal rights and opportunities for the women in every aspect of the national life is mandatory for ensuring the national development. The Government of the people's republic of Bangladesh have introduced the National Women development policy for the first time in the year 1997, the main objectives of that policy was to improve the quality of the life of the women, who are in a very depriving condition for decades and decades. There were the reflections of the demands of the long movements of the women community in the national women development policy as that policy was introduced with the view exchange with the leaderships of the women community and all the concerns persons.

After that, during the ruling period of the four-party alliance they made omen changes to that policy and introduced national women development policy 2004. During the ruling of the care taker Government, they introduced the National Women development policy 2008 in a revised form. But the effective implementation of that policy was not possible. At present the National Women development policy 2011 have been introduced for the empowerment of women, and to ensure the equal rights and opportunities for the women. The main issues of this policy have been discussed below:

6.2.6.1 The main issues of the national women development policy 2011:

1. To establish equality among the men and women in every aspect of the society and state in line with the construction;
2. To ensure safety and security of women in every aspect of the state, society and family life;
3. To ensure the political, social, administrative and economic empowerment of women;
4. To establish the human rights of the women;
5. To ensure the equal and complete participation of the women in the mainstream of the national development;
6. To build up the women as educated and efficient human resources;
7. To make the women community free from the cruel attack of poverty;

8. To eliminate the existing discrimination between men and women;
9. To ensure the proper recognition of the women in social and economic aspect;
10. To eliminate the discrimination on women and girls;
11. To establish equal rights of both male and female in politics, administration and other field of works, in all aspects of education, cultural activities, sports, and family life;
12. To innovate and import technology in favor of the women, and to resist the use of technology against the women;
13. To take proper initiatives to ensure the good health and nutrition of the women;
14. To ensure priority of women in sheltering project and ensure the shelter for women;
15. To initiate rehabilitation project for the victim women by natural disasters and armed clashes;
16. Take proper initiatives to satisfy the demand of the extremely poor women, disabled, and ethnic community;
17. Take initiatives to ensure safety of the widow, parents less, divorced, women;
18. To represent the positive impression of the women and girls, and gender issues in mass media;
19. To cooperate the brilliant and prosperous women to improve their creative merit;
20. To provide necessary assistance in women development.

6.2.7 National Water Policy-1999

Objectives of National Water Policy

- b. To ensure the availability of water to all elements of the society including the poor and the underprivileged, and to take into account the particular needs of women and children;
- d. To bring institutional changes that will help decentralize the management of water resources and enhance the role of women in water management;
- f. To develop a state of knowledge and capability that will enable the country to design future water resources management plans by itself with economic efficiency, gender equity, social justice and environmental awareness to facilitate achievement of the water management objectives through broad public participation.

Public and Private Involvement

- h. Enabling environment will be created for women to play a key role in local community organizations for management of water resources.

Public Water Investment

The policy of the Government in this regard is to ensure that:

- e. Interests of low-income water users, and that of women, are adequately protected in water resource management.

Water Supply and Sanitation

The rural areas of Bangladesh suffer from lack of quality drinking water. Surface water supplies are generally polluted and groundwater, which till now had been the best source of safe drinking water, is contaminated with arsenic in many parts of the country. Heavy withdrawals of groundwater for irrigation have also lowered the water table in many areas below the effective reach of hand tube-wells. Seepage of agro chemicals into shallow aquifers may also pollute water for human and animal consumption. Salinity intrusions from seawater deep into the land in the southwest are rendering groundwater unfit for consumption. Cities and urban areas too are facing the problem of receding water table due to heavy groundwater extraction. These water supply

and sanitation problems have obvious implications for public health. Diarrheal diseases, arising largely from drinking unsafe water, are a leading cause of death in the rural areas. Lack of proper sanitation and drainage facilities, inadequate water supply, and insufficient health and hygiene education are the primary causes of diseases in the urban areas. Lack of access to safe water supply in the rural areas is a special hardship for women who have to carry water over long distance, with significant impact of their health and productivity.

To address these problems, it is the policy of the Government to:

a. Facilitate availability of safe and affordable drinking water supplies through various means, including rainwater harvesting and conservation.

Stakeholder Participation

Decisions regarding water resources management can affect nearly every sector of the economy and the public as a whole, and stakeholder participation should be established in a form that elicits direct input from people at all levels of engagement. Stakeholder involvement should be an integral part of water resources management, at all stages of the project cycle. Towards that objective there should be a complete reorientation of the institutions for increasing the role of stakeholders and the civil society in decision making and implementation of water projects. The Government has to be at the core of the effort to help build the local institutions and to impart a precise awareness of the issues and an unambiguous understanding of their role in water management. Similarly, Government must lead the effort to ensure greater participation of women in this endeavor.

6.2.8 Gender in National Water Management Plan (NWMP) 2004

I. Promotion of Women Participation:

Increased women's participation in water sector is a requirement of the NWP and will be explored in the fields of project preparation and planning; employment in water schemes; training in the management and operation of local water supply and sanitation schemes; and increased involvement in financial aspects of local water schemes (e.g. tariff billing and collection, book-keeping etc.). Changes in legislation will be introduced as required.

II. Towns and Rural Areas:

Significant sustainable improvements will be targeted in operational efficiency and service delivery with prime responsibility decentralized to local government with active community participation and consultation, and special emphasis given to the role of women. Both community and private sector participation in the provision of water supply and sanitation services are to be promoted with an overall intention that affordable and financially sustainable are offered to all level society, with particular emphasis on the poor and disadvantaged sections of the community.

6.2.9 Gender in the National Agriculture Policy 2013, Ministry of Agriculture

I. Women in Agriculture:

Almost half of human resources in the country are women. Consequently, involvement of more women is very important in government services & agriculture sector and as agricultural labor force. Because there are huge possibilities to contribute by women in agriculture expansion, thus to fruitful inclusion of women in agricultural income generating activities and to development human resources following measures will be taken by the government:

II. Women Empowerment:

- All necessary support will be provided to improve women skill for development of family food & nutrition security;
- Women will be encouraged for more involvement in decision making of agriculture management; and

- Efforts will be taken to ensure for equal rights for receipt and management agriculture equipment.

III. Participation in Production and Marketing:

Government will be encouraged women in agriculture production, specially: involve of rural destitute women in agriculture processing and agri-business activities, so that they can improve their economic conditions;

- Technological empowerment of women will attempt to encourage in agriculture;
- To receive agricultural technology for women's rights will be facilitated through the participation of women in agricultural development systems;
- Government will take steps to encourage women's participation in various activities of agricultural extension such as training, farmers meeting/ rally, workshops etc.

IV. Income Generation Opportunities:

- Government will provide loan support to the women in case of their participation in agriculture-related activities, homestead gardening, post harvesting activities, seed production and preservation, nursery, bee-keeping, food processing etc.;
- Government will provide micro credit to the women in small-scale agro-processing, storage and preservation etc.; and
- Measure will take to eliminate wage discrimination between women & men.

6.3 Role of Local Government:

There is enormous role of the local Government in women development. The local Government has initiated many special programs at grassroots level to connect the women community with the flow of social development. There are special opportunities for the women in the local Government of Bangladesh. The post of the commissioner in the union council, pourashava, and city corporations are reserved for the women.

One third of the total number of wards been preserved for the women through the pourashava ordinance in the year 1998. In city corporations one third of the wards were been preserved for the women from the beginning. Seats for the women have been preserved for the women in upazila parishad act- 1998. At present the female are participating in general seat along with the reserved seats in all the election of local Government. But the features of the number of elected female in the general seats along with the preserved seat are not satisfactory.

6.3.1 Effective Strategies of Implementing the Gender Issues in Local Government Institutions

- Ensuring the participations of the people of different community;
- Activation of the different committees of the union parishad;
- Making the service oriented organizations more gender sensitive/ responsive;
- Ensuring the participations through involving the non-elected representatives;
- Making the budget preparation process equity based;
- Incorporating the commitments of the Government with the plans;
- Making the development plan process equity based;
- Proper use of local resources;
- Making the monitoring and evaluation system gender sensitive and gender responsive;
- Demonstration and publicity of positive experiences.

6.3.2 Strategies for Incorporating Gender with the Mainstream of Local Government

Gender mainstreaming is the process of establishing qualitative and quantitative equality of male and female in the decision-making level. The meaning of incorporating gender in the local government is to create opportunity for the women to equally participate specially in politics, leadership, governance, economy, and social policy. Strategies for incorporating gender with the mainstream of local government are:

- Preparation of the gender sensitive policies;
- Gender sensitive decision-making structures;
- Gender sensitive human resource development (qualitative and quantitative);
- Gender sensitive culture and environment.

6.3.3 Preparation of the Gender Sensitive Policies:

1. The goals and objectives of the organization have been introduced considering the existing discriminating relationship between men and women;
2. The policy/ manifesto of the organization has been prepared in line with gender;
3. There is proper gender policy of the organization;
4. There is proper action plan for the implementation of the policy;
5. There is proper allocation of resources for the implementation of the policy;
6. There is policy for the human resources development of the organization and that is in line with gender;

6.3.4 Gender Sensitive Decision-Making Structures

1. There is prescribed and specific committees of the organization for decision making;
2. The workers are included in that committee;
3. There is active participation of the female workers;
4. There is importance of the opinion of the female workers in decision making.

6.3.5 Gender Sensitive Human Resource Development (Qualitative and Quantitative)

1. Quantitative and qualitative equality in human resources;
2. Clear concepts and commitment on gender;
3. Positive attitude and Outlook in establishing equality;
4. Open discussions on gender among the male and female workers;
5. The workers of the organization are in practice to change the existing rituals, customs, behavior regarding gender;
6. There is connection with other organizations working with gender issues.

6.3.6 Gender Sensitive Culture and Environment

7. The workers of the organization think that the organization is gender sensitive;
8. The workers and group members thinks that there is positive environment for the women in this organization;
9. The workers can freely discuss and communicate with the superior officers of the organization;
10. There is a working environment equal to all men and women, religion, and other ethnic groups.

6.4 Gender Strategy for the Seventh Plan FY 2016 – FY 2020:

6.4.1 Gender Equality

Women make up almost half of the population of Bangladesh; however, they remain one of the most at risk social groups of the country. Although strides have been taken to advance women's position in society, they continue to have lower economic, social and political opportunities. For instance, in 2008, women held less than 20% of parliament seats and in 2010 the female share of the labour force was less than 40%. This underprivileged position leads to a higher threat of poverty for women as a social group. It also subjects them to other risks such as physical and emotional violence, exploitation, and natural disasters.

It is recognized that women are heterogeneous groups such that their situations, deprivations, and needs vary according to their locations within various communities, religions, and regions. Thus, along with promoting rights and entitlements of women, Sixth Plan envisaged to cater to all these differential and specific requirements ensuring equal access of women to political, economic and social space.

Nevertheless, despite the progress of Sixth Plan, there is unfinished agenda. The main challenges are:

- The implementation of social laws remains a major challenge. The Government's monitoring capacity of domestic violence against women and domestic aid is a constraint.
- Progress in the area of economic equality is lagging behind. With regards to women accessing important factors of production such as land and credit, Bangladesh scores low in the GGR 2014. Despite progress during the Sixth Plan, the women's labour force participation rate still remains low by international norms. When included in the labour market, women still face different forms of discrimination. They are more prone to under-employment and wage and occupational gender gaps remain significant. According to GGR 2014, women receive only 57% of the male wages for equal work, and less than a third of professional and technical workers are women.
- Lack of gender responsive working environment including inadequate facilities of child care, transport, occupational health and safety discourage women from accessing the job market. Women workers in the informal sector have no legal protection against abuse, discrimination, irregular employment, low wages, and long work hours. Although policy measures are in place and the Government has granted women 6 months maternity leave, often this is not followed by the private sector or the NGOs.

6.4.2 Gender Strategy

The gender vision of the 7th Five Year Plan is that of establishing "a country where men and women will have equal opportunities and rights and women will be recognized as equal contributors in economic, social and political development". The mission is to ensure women's advancement as self-reliant human beings and reduce discriminatory barriers by taking both developmental and institutional measures. Gender equality and women's empowerment agenda for the 7th FYP is based on pursuing strategies and actions that not only enhance women's capabilities and access to resources and opportunities but also address the control over resources, decision making, reducing the barriers in structures and institutions and aim at

changing social norms and protecting their rights are critical to integrate within the plan. Establishing monitoring, oversight and accountability mechanisms is equally important.

The framework for women's empowerment and gender equality comprises of 4 areas of strategic objectives:

1. Improve Women's Human Capabilities,
2. Increase Women's Economic Benefits;
3. Enhance Women's Voice and Agency;
4. Create an Enabling Environment for Women's Advancement:

Improve women's human capabilities: This deals with women's and girls' access to health care, life expectancy, nutrition, reproductive health, education, information, training, and other services that enables women to achieve better health and educational outcomes. This also includes women's freedom from violence and coercion.

Increase women's economic benefits: This relates to women's access to or control over productive assets, resources, services, skills, property, employment, income, information, technology, financial services, and other economic opportunities including community resources like land, water, forest etc.

Enhance women's voice and agency: This pertains to women's role as decision makers in public and private spheres including politics and promotion of their leadership is considered here. Changed attitudes on women's and girls' rights, women's enhanced knowledge of their rights and increasing their bargaining power are reflected on.

Create an enabling environment for women's advancement: The socio-political environment, legal and policy support, and congenial social norms are the key in this area. Oversight, enforcement of laws, regular collection of sex-disaggregated data, gender and social analysis skills including the capacity to develop, implement, and monitor gender strategies, understanding of gender issues in the sector are the key areas.

To implement these strategic objectives, seven action areas have been identified that will contribute in achieving results in these four areas:

1. Increase access to human development opportunities
2. Enhance access to and control over productive resources
3. Increase participation and decision making
4. Establish conducive legal and regulatory environment
5. Improve institutional capacity, accountability and oversight
6. Increase protection and resilience from crisis and shocks
7. Promote positive social norms

Increase access to human development opportunities:

Building the human capital of women to foster equality of opportunity is essential. Early and continuous investments in human development for girls are necessary for equitable economic growth. Education, health, nutrition, freedom from violence and such others are considered enabling human development opportunities. To implement this strategic objective, the Seventh Plan will focus on the following areas.

Life cycle based disease prevention and curative healthcare services: Considering the current realities of women in Bangladesh, a lifecycle based healthcare system including tertiary care should be accessible to women within affordable cost. The health care system would be made more responsive to differential needs of women and men aiming at reducing discrimination

and ensuring equal benefits. One important initiative will be to undertake information and motivational campaigns to inform households, both women and men about the need and availability of preventive care and screening services. Coverage of the existing low cost health care services will be expanded to include the poor of the remote and vulnerable areas. The ongoing primary health care services would ensure equal immunization support for both girls and boys who are not covered yet. Similarly, immunization, maternal and ante-natal care for pregnant women and post-natal care for both mother and child would be ensured through increased facilities as well as information and motivation both in rural and urban areas. Reproductive and sexual health care services including counselling would be expanded. Expansion of women friendly hospitals in all districts by enhancing services in all *sadar* hospitals and medical college hospitals including outputs of reproductive health care will be done.

The system for registration and tracking of services for women and children at the community clinics and all hospitals would be made more effective. HIV testing and counselling would be scaled up among key populations and high risk groups and awareness amongst migrant labourers and their spouses need be promoted. Prevention of Mother to Child Transmission services will be scaled up for HIV infected women.

Equal access to nutrition: The high rate of malnutrition among children and women calls for a multidimensional approach to address the intergenerational health impact. It would include awareness on child/women nutrition, food value and food diversity. Together with this, the ongoing iron acid supplementation during pregnancy to cover iron-deficiency anaemia, postpartum vitamin A supplementation, treating intestinal parasites, distribution of *albendazole* tablets, and vitamin A campaign for children and separate deworming Programme would be strengthened and expanded. Campaign through media on obesity and overweight, and the importance of physical work and healthy food would be undertaken. Ensuring salt iodization through BSTI and compulsory physical exercise in schools are essential. Target specific food fortification for micronutrients would be promoted with local producers.

Food security and safety net programmes including the maternal health vouchers and allowance to cover women's/girls' nutritional deficiencies particularly in the calamity/poverty prone areas would be continued and expanded. Promotion and expansion of homestead gardening and poultry in the rural and remote areas particularly amongst the poor introducing climate tolerant varieties will be done to ensure protein and vitamin consumption.

Modern reproductive health and family planning services: Counselling on population control and reproductive health and behaviour would be continued and expanded in all health care centres. Community based family planning services would be continued and expanded to cover urban poor women and men. Motivational work in urban slums and remote areas for use of modern contraceptives and availability of modern contraceptives at a low cost especially in remote areas would be ensured.

Women's decision-making over reproductive health: Information and education is necessary to enhance women's control over their own reproductive health. Counselling services would be made available in all health care centres for men, women and couples.

Quality formal education: Education is key to empowerment and formal education is often a precondition for decisions making positions in both public and private sectors. Quality and gender sensitivity of primary and secondary education would be ensured for girls and boys through teachers' education and training, curriculum improvement (including subjects to promote equality and equity by gender, ethnicity, class, physical ability etc.), and introduction of extra-curriculum activities to build confidence and to overcome the limitations in learning outcomes. Transition from primary and completion of secondary education for both boys and girls would be ensured with continued support from poverty focused stipend, free education, books, and so on. Girls'

participation at the tertiary level and technical education would be increased through increased community motivation to change social norms on girls' education, providing scholarships, special quota provisions, infrastructure including accommodation, transport, hygienic sanitation for girls and such support. Other actions would include increasing the percentage of women teachers and teachers' training on inclusive education and making the education environment safe for girls.

Marketable technical and vocational education including ICT: One of the key requirements for employment of women equally with men is marketable education and skills. It is essential to reform the educational curriculum to cater to the needs of the country and the changing global requirements based on labour market analysis and future projections. It should also include measures for proficiency in ICT. Modernization of trade skills education; increasing different language proficiency; hands on training; standardization of courses in consistency with international needs; establishing globally acceptable certification system; and improved qualification of teaching staff are the needs of the day. This is also necessary for professional migration. Market need assessment and adjustment of curriculum should be a regular phenomenon.

Safe water and sanitation services: Easy access to safe water for drinking and household use facilitates women's empowerment by reducing time spent on searching for safe water and thereby allowing them to be engaged in productive endeavours. Access to water and sanitation services is also essential for household health care. It can save the family from additional expenses and women from care services. These services, both at home and in public places would be expanded to facilitate women's participation in economic and political activities. Arsenic and saline screening would be ensured and traditional filtering methods would be disseminated widely. Also water conservation Programme for the Northern region and coastal belt is important to ease water stress and protect from salinity. Arrangement of safe drinking water and accessible toilet facilities would be there for the women and people with disability in rail station, bus stand, and launch terminal.

Freedom from violence: One of the most prevalent human rights abuses, which has enormous impact on all aspects of women's lives, is violence at home and outside. Multipronged actions are essential to curb violence against women (VAW) including motivation of family, enhancing community support, enforcement of legal provisions, improving women's human capabilities, access to low cost prosecution services and economic self-reliance of women. The ongoing initiatives under the multi-sectoral Programme and institutional mechanisms would be expanded in more areas. It is necessary to take women's safety into account and promote various supports and services, i.e. one-stop crisis centre, forensic DNA laboratory, trauma counselling centre, women support centre, 24 hours toll free helpline (10921) for women and children victims of violence under multi-sectoral programmes. However, prevention would be emphasized and women's and community awareness of the economic, social and health impact of VAW would be enhanced. Information and support services for women in accessing legal support, shelter, and counselling would be expanded and support for women's economic self-reliance should continue. Private and public institutions would be instructed to formulate and enforce policies to protect women from sexual abuse at work places/ educational institutions and other public places. Accountability mechanism would be developed and implemented for the law enforcing agency members in addressing VAW.

Ending child marriage: Child marriage is prevalent and is a barrier to girls' ability to reach their potential, fulfil their aspirations and contribute to their communities. In Bangladesh 33% girls are already mothers by age 19, posing significant risks to their health as well as the increased probability of children becoming stunted. This will require action in multiple areas. The existing age at marriage for girls and boys would be strictly enforced. Compulsory registration after birth of a child will be ensured. The revised Child Marriage Restraint Act 2013 would include penal provisions for both guardians and registers. Civil society movements against child marriage would

be strengthened, community orientation improved and support for continuation of education at secondary levels will be ensured to eliminate child marriage.

Participation in sports and culture: Women's participation in sports and cultural activities would be ensured from school to build self-confidence amongst girls. Extra-curriculum activities would be encouraged and supported in educational institutions and outside.

Protection and development of differently abled women: As almost 10% population is differently abled, the upcoming disability survey would identify extent and types of disability disaggregated by sex. Based on the new National Social Security Strategy (NSSS), appropriate social protection measures would be extended and expanded to cover more such persons, especially women. The needs of this group would also be addressed within human development and economic development agenda as well.

Enhance access to and control over productive resources:

Increased access to and control over productive resources enhances women's self-reliance and income. It is important to enhance women's capacity to enter the labour market for income. Three important areas facilitating income are, job creation; connecting with productive jobs being created or get help to create own jobs in self-employment; and increasing women's productivity of the existing jobs.

Short and long-term access to decent and harassment free employment: Implementation of the growth and employment strategy of the Seventh Plan will create new jobs for the growing labour force. The private sector will be regulated and monitored in enforcing equal wage and benefits for women and men as per Labour laws and the ILO Conventions. The implementation of NSSS will be a major step forward to encourage women participation in the formal work force.

Secure employment in public and private sectors –domestic and abroad: Filling up of the existing vacant positions in the public sector will allow additional employment for a large number of women and men where women with right qualifications may be given preference to increase women's share of employment. Improvements in working conditions are needed to attract more women to the civil service. Recruitment of women; timely promotions, especially at senior levels; addressing safety and security concerns at field levels; gender sensitivity and elimination of discriminatory attitudes among management will enhance women's participation. Institutional weaknesses and constraints should be removed through transparent human resource management functions.

Opportunities for higher-value self-employment: Self-employment is often a critical avenue to empower women by ensuring economic self-reliance. The large number of micro-finance users, the unemployed school graduates and dropouts, and the unpaid family labourers are the main groups who will contribute to family and for growth, if they are introduced to simple time saving and green technology, information about markets, source of finance and training. Those opportunities will increase women's participation in nonfarm activities. Ensuring support from private sector, NGOs, business associations and media is also important.

Financial and business development services for entrepreneurship: Women entrepreneurship needs to be supported and entrepreneurs are to be prepared to qualify for institutional finance, i.e. they have to be prepared with required paper work, business planning, financial management and such other. Bangladesh Women Chambers of Commerce and Industry and some others are working to develop business capacity of women entrepreneurs and linking them with the banks and PFIs. All chambers and associations would be encouraged to take similar initiatives for entrepreneurs at the district levels. Business incubator services would be expanded by the chambers and associations. Opportunities to participate in trade fairs and higher levels of the value chains would be created. Scope for women at different levels of the value chain of

different products would be identified, disseminated and supported with technology and inputs. Ethnic crafts would be promoted.

Reduce and prevent violence and sexual harassment in workplaces and public spheres:

Community orientation and motivation by using communication methods and media would be used to create public opinion against VAW in public places. Steps would be taken to enact legislation to address sexual harassment. Full prosecution of VAW committed at public places will be done and results publicized help curb the offense. Emphasis will be given to orientation on the laws and establishing accountability of the members of law enforcing agencies in implementation and enforcement of the legal provisions.

Access to support services: Infrastructure and support services are key to increase women's participation in public spheres. Safe and affordable transport system is necessary to increase women's mobility. The public transport system would be made more frequent, safe and affordable. Public and private transport companies would be encouraged through budgetary incentive to run more buses with reserved seats for women or women only buses during peak period. Employers who employ more women in factories will be provided loan facilities to operate transport services for their women employees. A policy to increase bus services at least for girls' schools and colleges in all cities of the country will be reviewed for implementation. Safety and security (lighting, police patrols, safe toilets, waiting rooms) measures in public transport stations would be a compulsory part of transport management. Road safety would be ensured through enforcement of traffic rules and laws. Cleaning of foot paths, compulsory use of over bridges for road crossing, increased public transports are some other measures to support women's mobility.

Training/orientation on the importance of traffic safety would be provided to both public and private service providers using media and also in schools is necessary. Commuter train services between Dhaka and nearby cities, like Narayanganj, Gazipur, Tongi, and Narshingdi would be introduced/ increased with ladies compartments at peak hours. Similarly, workplace safety and security concerns, child care, housing and toilet facilities, etc. would be addressed by ensuring regulatory provisions with private sectors and also by encouraging private sectors to develop low cost housing and child care facilities.

Access to markets and productive assets (land, seeds, fertilizers and extension services):

The extension services of all the government agencies (livestock, fisheries, agriculture etc.) would take specific measures in reaching women with support for training on technology, market information, production techniques, sources of raw materials, etc. Employing women as extension workers is useful in reaching women and opening new employment opportunities for women. The distribution of seeds and fertilizer through women farmer groups will help grassroots level women who are gradually being responsible for farming. Partnership with NGOs has proven to be effective and should be continued.

Increased ownership of land and productive resources: The current practice of distribution of *khas* land in the name of both spouses would continue. Similarly access to forestry resources through women co-management groups would continue and expand. Micro-finance operations need to combine vocational skills, markets, information. Community orientation on giving women due share of their inherited property is often missing, which would be promoted and enforced. In case of river erosion or such disaster induced migration, women would be considered as a special group for housing or land support.

Access to, and decision-making over, community resources (water body, land, forest):

Women's participation in accessing and taking decisions regarding community resources would be ensured by provisions of women's participation under the Social Forestry Rules, Water Management Policy, Forestry Sector Policy, WATSAN Policy and so on. Similar practice would

be integrated in all relevant sectors. Women's participation in relevant associations and groups would be ensured and monitored.

Access to technology and information (a2i): Access to modern technology related to business and jobs would be expanded at a low cost. Women's access to information related to markets, employment, and production or business opportunities would be increased through using media and ICT. Increased access to mobile phones, internet and radio etc., will help women in accessing information. The a2i to reach young girls should be strengthened and be responsive to the needs of less educated persons.

Access to energy: Women's expanded access to renewable energy would be ensured in both grid and off-grid areas to facilitate their economic gains as well as conservation of resources. The energy policy would consider and enhance women's access to solar power, bio-gas, improve cook-stoves etc. Women's access to rural market corners and such infrastructure have proved to be beneficial and can be expanded in collaboration with the local government institutions (e.g. municipalities, city corporations). Some municipalities have already taken such initiatives in urban areas, and the others should be encouraged.

Increase participation and decision-making:

Participation in national politics and local government: Women's participation in national Parliament and local government has increased but the evidence of women raising their voices on behalf of women rights is limited. Women's political orientation would be enhanced through apprenticeship, training, and campaigns and by establishing support and monitoring mechanisms to increase their participation as contestants in regular seats. Some projects have introduced training of women public representatives and citizens and monitoring of women's role in different committees. Steps should be taken so that these approaches are uniformly practiced. The provisions of RPO 2013 related to women's participation and representation in political parties would be ensured by enforcing it within the registration criteria.

Strengthened knowledge and capability to participate in public sphere: Training, orientation and knowledge development would be provided to all women employed in the public sector. The capacity of the existing training institutions would be increased with experienced faculty and other resources in the area of gender mainstreaming to both women and men. Leadership training and performance monitoring against defined results would be available to women on a priority basis.

Representation/ leadership in public institutions, business and trade: Women's representation together with appropriate training and capacity building support would be institutionalized in public institutions. Private sector institutions and trade bodies would also be instructed to develop their own gender strategies and ensure more women's representation at different levels. It could be considered as criteria for qualifying for different incentives by the private sector. Women's participation in delegations and committees for trade and other important negotiations and development initiatives would be made mandatory and private sector to be encouraged /incentivised to have women on the Boards. Such legislation might also be considered.

Enforcement of targets / quotas for women's representation at all levels: The existing quota provisions for women's representation in different services will be enforced and/or increased by taking specific measures, especially as the availability of qualified women increases with improvements in women's educational attainments. Also, an assessment of the quota provisions for different groups, the performance of these groups and, future possibilities would be considered.

Membership and leadership in associations and decision-making forums: Memberships in different sectoral committees and associations would be enforced, such as in, water management associations, sanitation committees, water supply committees, which are formed as per the

policies/rules for sectoral ministries and agencies. Similar initiatives by other sectors are necessary. This would be supported by clear TOR and orientation and training for women on their roles in such bodies as well as orientation of their male counterparts.

Establish Conducive Legal and Regulatory Environment:

Removal of all discriminatory provisions in all laws and policies: Some laws and policies are yet to incorporate provisions to ensure women's participation and equal rights and these need review and revision. Some of the laws, such as the Citizenship Act 2009 is still to ensure equal rights of both spouses in ensuring citizenship of spouse of foreign nationality and need to be revised. As another example, the Renewable Energy Policy of Bangladesh did not consider participation or benefit of women though women are involved, which would be reviewed to integrate women's perspectives and benefits. Also, punitive and discriminatory laws and policies related to HIV response need to be addressed for an enabling legal environment for access to HIV services. It is essential that all sectoral policies are also reviewed from a gender lens in order to make them more conducive to women's participation and empowerment. MOWCA's capacity would be improved to provide technical support to line ministries in reviewing such laws. Partnership with women groups would be promoted for this.

All laws effectively enforced to uphold rights of women and girls: The enforcement of the legal and policy provisions would be ensured through establishing effective mechanisms and accountability. Some good practice examples are available in other countries, which include, independent Commission on Women, Oversight of Human Rights Commission and Audit Commissions, which may be considered for adaptation. Women's access to the legal system would be ensured through expansion of support from Legal Aid Fund, simplification of legal procedures, removal of discriminatory procedures and retention of legal practitioners to support poor women. Capacity of judiciary and law enforcement agencies to deal with such cases would be strengthened. A separate tribunal for dealing with human trafficking cases would be formed.

Rights of the girl child recognized and upheld in laws and policies: Girls as a distinct group would be recognized and their rights and advancement would be upheld in all relevant policies and laws. All new laws and policies would be reviewed by the Ministry of Women and Children's Affairs (MOWCA) before their approval and enactment. Partnership with child rights groups would be promoted for the purpose.

Accountability of law enforcers: A transparent accountability mechanism for the law enforcing agencies would be in place so that they are accountable to take action fast on offences related to VAW and women's human rights. Additionally, human resources for the agencies would be provided sufficient orientation and training to make them gender sensitive.

Increased Protection and Resilience from Crisis and Shocks:

Social protection addressing gender inequalities and gender dimensions of poverty and shocks: The new NSSS is designed to addressing the specific concerns and vulnerabilities of women at different stages of the life cycle. So, its sound implementation will be an essential complement to addressing gender-specific life cycle risks. The introduction of the proposed social insurance is particularly important mitigation measure for risks faced working women.

Climate change adaptation, resilience, food security and livelihoods: Adaptation capacity against climate change impacts will be augmented amongst community including women by investing in DRR and building resilience. Women equally with men would be oriented in dealing with hazards, including forest conservation to reduce probabilities of landslides and flooding; land use planning to minimize exposure to hazards; early warning systems and livelihood diversification into more resilient and empowering occupations. Resources would be allocated for full implementation of the Climate Change Gender Action Plan of the Government. Women's

capacity to play effective role in DRR related committees should be strengthened. Women's livelihood services would continue to ensure food security (e.g. low gestation and less water intensive crops, food storage and preservation technology, and food preservation during calamities) amongst vulnerable groups, including climate induced migrants to urban areas. Providing women with greater access to employment guarantee schemes, skills development, technology, entrepreneurship support and training would continue.

Mitigation measures of involuntary resettlement, and for preventing environmental degradation:

Women would be given due compensation for loss of livelihoods and assets for involuntary resettlement during land acquisition and construction of infrastructure through resettlement plans. Also, women's engagement in climate change mitigation measures would be increased, such as, knowledge of technology with low carbon emission, such as, forest and bio-diversity conservation, water management, access to renewable energy (solar, wind, bio-gas), and scientific waste management, where women also can become entrepreneurs or workers in these areas.

Information services for livelihood and to strengthen resilience to climate change, calamities and shocks:

Early warning about calamities and information related to services, shelters, livelihood support etc. would be disseminated to women and men through community radio and strengthening community networks. Water, flood refuge and sanitation facilities would be expanded with designs that address women's needs including that for child care, delivery and such other, and address women's safety and security concerns.

Influencing Social Norms and Changing How Women and Girls are Valued:

Portrayal of positive image of girls / women as equal human beings in all media: Portrayal of women's positive image will be promoted. The news/feature contents would advocate against VAW, dowry, child marriage and such evils. Negative projection of women as well as portrayal as commodity would be prevented, and positive portrayal promoted through mass awareness among the media personnel, including for the media owners. Regulatory measures will also be enforced for positive portrayal in promotional for consumer products and establishing ethical values.

Programme for men to change mind-set about men and women's roles: More programmes would include active engagement of men in all spheres to promote women's advancement and curb men's involvement or support of harmful practices. Sharing of unpaid households and care work by men to reduce double or triple burden. Men would be informed and involved in promoting gender equality as they often control or influence social behaviour, women's mobility outside home and access to reproductive health care. It is also important to develop groups of men as advocate to change social behaviour, prevent VAW, share household responsibility, promote gender equality and hold other men accountable for discriminatory behaviour.

Working with children and adolescents to develop norms of more egalitarian relationships: As gender socialization of both boys and girls begins early at home and community, it is important to initiate change processes at a young age to shape attitudes and transform behaviours. Early initiation and continued investment in children and adolescents is critical through education curriculum, sports and culture, social behaviour, media and all other means to promote the culture of equality between girls and boys and their equal human rights is necessary, so that men do not grow up with a discriminatory view towards women.

Establishing clubs for the adolescents all over the country will create awareness to reduce sexual harassment, child marriage, and other gender based violence, i.e. eve teasing. A young population of age group 15 to 24 years comprises nearly nine percent of the country's population,

who can be useful strength Girl-centred programmes equipping adolescent girls with knowledge and skills can build their confidence and contribute to the efforts to end inter-generational poverty, illiteracy, ill health, and gender inequality.

Implementation of Seventh Plan Gender Strategy:

The gender agenda for the Seventh Plan is large and priorities for the next five years will have to be set. Priority areas would be chosen on the basis of contribution towards both economic growth and women's empowerment and actions that can facilitate results in more than one area. The key areas would be to ensure equal benefit from quality formal education; marketable skills to maximize productivity and potential of women; narrowing of wage gap between similarly qualified male and female workers; elimination of all types of biases against female staff at the work place; nutrition and lifelong health care; infrastructure that facilitates women's human development, mobility and economic gains; and actions that enhances positive social norms and reduces VAW and other harmful practices. An assessment of geographic areas that lag behind national average as measured by different gender equality indicators would be prioritized for resource allocation and closing the gender gap in the identified areas. Enforcement of laws and policies and effective monitoring should be ensured for good administration and governance. The available resource envelop for 7th FYP would be reviewed, resource requirements to address gender equality objectives and targets should be estimated and additional resources should be sought, as needed.

Mainstreaming of gender would continue and all macro-economic and sectoral policies would integrate gender as a crosscutting theme. Action plans should be drawn with a view to reduce inequality and promote an equal relationship between sexes. To ensure results from actions related to gender equality all reporting of national progress including those related to Post 2015 agenda would be based on sex disaggregated data to allow a better understanding the progress in the area of gender equality and women's empowerment.

Partnership and cooperation with Civil Society Organizations (CSO) including development and advocacy groups and private sector would be strengthened to promote their role and support in implementation and monitoring of actions and to achieve good results. Development and advocacy initiatives on gender equality issues and to form public opinion against harmful practices would be pursued jointly and they should be partners in better delivery of services, especially in rural and remote areas.

More specifically, the gender implementation arrangements will be strengthened through the following actions:

Effective and strong institutional mechanism: The existing institutional mechanism for women's advancement will be made more effective with accountability, capacity and authority. Regular guidance from NCWCD, functioning of the committees and the WID Focal Point mechanism would be ensured. Capacity of the key institutions like MOWCA including DWA and PLAU, IMED, BBS, OAG and Planning Commission would be strengthened in performing their roles as per mandate in design, review, implementation, and monitoring of gender equality and women's advancement related actions and their results. MOWCA would be geared more towards an oversight role like other regulatory ministries with review of its mandate to promote its roles to monitor gender equality with allocation of adequate resources. The BBS will be tasked with generating gender disaggregated data synchronized with the national and sectoral indicators and the reporting needs for CEDAW, SDG and such others. IMED would have accountability to monitor gender equality results and the Office of the Auditor General (OAG) should be given responsibility of auditing gender budget expenditure. Similarly, Bangladesh Institute of Development Studies (BIDS) can be assigned to necessary gender equality research and BMET strengthened for analysis of labour markets at home and abroad.

Sufficient financial and human resources for gender mainstreaming: Generally, there is a lack of resources for agencies in implementing and monitoring activities for advancing women's rights and gender equality. Similarly, there is a general lack of capacity and allocation of human resources to work in this area. Projects/programmes generally lack resources for the identified gender related actions. Often functions in this area are consultant dependent. It is therefore important to allocate both financial resources as per targets of each agency and projects and human resources in the institution with capacity development support. The National Action Plan would be used as a reference point while allocating resources for women's empowerment and gender equality.

Adequate technical knowledge and support services: It is important to increase the number of technically competent persons who can carry out gender analysis, assessment, planning, implementation and monitoring. Though Dhaka University and some institutions have initiated courses, the education institutions should be encouraged to initiate additional courses to develop technical knowledge on how to address gender in different sectoral operations. The capacity of PLAU and DWA should be enriched so that their staff are able to monitor performance and can guide other agencies and ministries, if needed. Gender analysis training should be part of all staff training.

Transparent monitoring mechanisms established and implemented to measure impact of public policies and programmes: The review of 7th FYP programmes should incorporate monitoring of gender equality results. IMED monitoring should integrate monitoring of progress of women's empowerment and gender equality based on project/ Programme targets. More rigorous monitoring of the gender budget is essential across agencies, sectors and field level. The OAG should be assigned to monitor expenditure and results in the area of gender equality. Transparent procedures at different levels would include holding open meetings, issuing publicly available financial disclosure statements, and conducting budget review.

Capacity to develop, implement, and monitor gender strategies across government and sectors: Building the capacity of women and men in institutions to understand gender issues and developing their motivation to bring about changes within their own domain and act accordingly. Orientation of the policy makers and training and capacity building of existing staff contingent in different institutions has to be continued and expanded. All training programmes of different institutions should integrate gender issues that are relevant to the sectors' or departments' operation with specific actions identified and monitoring of the same. Private sectors should be encouraged to incorporate gender perspectives in their operation and employ gender specialists, if needed.

Defined national and sectoral gender equality results: The indicator of the government's performance on gender will be defined besides measuring growth, investment, deficit etc. A compilation of defined gender equality results with indicators would be integrated in the plan document for all sectors for monitoring purpose. At the national level, a list of gender equality indicators would be identified, agreed and monitored. The poverty assessment and income data would be gender disaggregated in all wealth groups so that women's poverty reduction is effectively measured.

Accountability for gender equality results: Accountability for the achievement of gender equality targets and results must be ensured. The Project/Programme management should ensure utilization of resources for gender equality as stated in the project documents, and be accountable for any failure. Reallocation of resources from gender equality objectives to other action areas should be restricted. Performance assessment criteria of projects/programmes should ensure assessment of gender equality targets and results. At country level accountability means that the Government, private sector, parliaments, local development actors, civil society

including women's organizations, private sector and national women's machineries make transparent and binding commitments and that they all should work for gender equality in their own area and be accountable. The Government would provide guidelines, ensure oversight and establish partnership for ensuring accountability.

Monitoring and evaluation: For establishing good monitoring and evaluation (M&E) mechanism, it is critical to have a list of agreed gender equality indicators at the national level for measuring the progress of gender equality. These may include employment in formal sector, tertiary education, reduction of VAW and child marriage, reduction of maternal mortality and malnutrition, reduction of poverty of female headed households and such other key areas. These should be consistent with the probable indicators of the Sustainable Development Goals (SDG). At the sectoral level, a few key performance indicators (KPI) in each sector would be identified and monitored. The GED of the Planning Commission would finalize the indicators with support from sectoral ministries. All relevant stakeholders working in the sector should be informed of the expected results and indicators so that they are also active in implementing actions and monitoring for those results.

6.5 Final report on Small Scale Water Resources Development Data Collection Survey prepared by JICA:

Many gender and development issues were left unresolved and needed attentions for upcoming projects. These are the following:

- Knowledge of the LGED Gender Equality Strategy and Action Plans are limited mostly to LGED staff at the headquarters, so there is an urgent need to inform staff in field offices of the new approach and what it means for the way they conduct their activities.
- Human resources issues exist at all levels of project organisation, specifically how to and why hire and deploy female staff in ways that will improve gender equality in LGED and in subprojects. All project staffs, male and female, will need careful training to improve sensitivity and skill.
- There is also a need to clarify the extent to which project personnel, other than gender specialists themselves, will take any responsibility for improving the project's gender and development program components.
- New types of training and program development are needed at the subproject level to advance women's strategic needs and to become more involved in local level decision-making about water management and WMCA affairs.
- Monitoring and evaluation needs are not fully covered by the management information system. There is a need for in-depth, qualitative information on processes influencing various gender-related subproject outcomes.
- Follow-up training to improve the quality of the female labour, as well as skill development training for the female LCS members.
- A resting shed, a first aid box, and water facilities (tube well) need to be installed at working places, in addition to a ring-slab latrine.
- Alternative employment opportunities for LCS women need to be created including provision for extra loans.

All in all, these projects found out the following lessons and supporting factors to increase participation of women:

- (1) Women's involvement is important to motivate and mobilize other women.
 - Including women in the PRA teams that make the initial contacts is critical for reaching women and ensuring they are included in the eligibility lists for project benefits.
 - Using female staff from the executing agency on the PRA teams and as local facilitators will also support women's increased participation.
 - Involvement of women members of the UP in WMCA encourages women's involvement.
 - Election of women to WMCA management positions also has a positive influence.
- (2) Awareness of specific benefits to be gained is also a motivator for increased women participation.
 - For both poor women and men, the strongest incentive for joining WMCA was the prospect of earthworks employment.
 - Women who were not poor were less likely to join, but were attracted when they became aware of the opportunities for practical training.
- (3) Difficulty in accessing benefits, such as project employment, can have the opposite effect.
 - Complex procedures for participating in LCS can be barriers for women.
 - Delays in payment are discouraging, as day labourers cannot go several days without pay.
 - Working conditions such as water, rest, and first aid facilities can also be an issue.
- (4) Men's attitudes are important, and it may be necessary to persuade them to support the involvement of their wives and other women.
 - The findings of one survey were that women participated at lower rates in communities in which a significant proportion of men objected to the participation of their wives.
 - Other factors influencing women's engagement in project activities and decisions include:
 - Women members of WMCAs were more likely to be active when they were given responsibilities (e.g., to collect contributions or select groups of trainees).
 - Increased participation of more literate and qualified women is important to increase women's representation and effectiveness as members of WMCA management.

Most importantly, the position of the gender and development officer at the IWRMU Social and Gender Development Section has been proposed but remained vacant since the establishment of the IWRMU in early 2003. This poses serious doubt to LGED's commitment into gender equality in water sector. Gender equality can only be achieved by all project staff involved and assigning the responsible gender officer to monitor high-level field activities is very important at the starting point. There has been an urgent need to deploy him/her to the future projects.

6.6 Gender Equity Strategy and Action Plan of LGED:

As one of the most important department of the Government of Bangladesh Local Government Engineering Department (LGED) already been adopted its strategy for women empowerment and equality through implementation of different development projects and regular activities.

6.7 Gender Equity Strategy of LGED

The National Women Development Policy is basic foundation of LGED's Gender Equity Strategy. The principle objective of this Strategy is to develop women and to create women-friendly ambience at all levels of LGED activities in consonance with the incorporation of the National Women Development Policy 2011. LGED in accordance with this Gender Equity Strategy, ensures that all its infrastructures are made women-friendly, creates employment opportunities for the women in its different activities increasingly establishes a process decision making in each and every work through the participation both men and women. The deprived women should as such be empowered gradually through this process. LGED's Gender Equity Strategy has been formulated primarily to attain the very objective of transforming LGED into an example among the public-sector organizations towards promoting gender values.

Strategic Issues

1. Policy Adoption:

The Gender Equity Strategy of LGED shall be devised and updated in conformity with National Women Development Policy. On the basis this strategy, LGED's different sectors, units, projects shall prepare their individual "Gender Action Plan (GAP)" and "Implementation Guidelines", which shall be reviewed by the Gender and Development Forum and any refinements/ amendments may subsequently come thereof.

2. Institutional Arrangements:

The Gender and Development Forum is the main executive body for implementation of the Gender Equity Strategy, which shall be institutionalized in due course. As a matter of good governance, the Gender and Development Forum shall have written constitution and an operational manual. Every unit and project of LGED shall prepare of its own Action Plan wherein necessary advices and guidance of the Gender and Development Forum are contained, shall review and coordinate all gender related issues and activities and shall make necessary communication as well.

3. Data/Information Collection, Monitoring and Evaluation:

Collection of data/information, irrespective of their sources shall be gender disaggregated in all spheres and activities. In the case, formats prescribed by the Gender and Development Forum containing key indicators shall be used. To meet the project requirements, any other formats with different indicators can also be used. Collected data/information shall be sent to the Gender and Development Forum bi-annually and Forum in turn shall develop a Database, which shall be used in monitoring and evaluation of all gender related matters. The annual or any other reports shall be prepared and published and relevant action plan shall also be simultaneously developed utilizing the available data. Special attention has to be paid for optimal use of the Information Technology.

4. Infrastructure development:

Infrastructure to be built by LGED shall be made women-friendly. In this end, provisions for essential facilities exclusives for women are to be kept in the plans, designs and drawings for all infrastructures to be prepared and their proper implementation is to be assured. The Planning and Design Unit of LGED shall take all necessary measures in this regard.

5. Employment and Working Environment:

a) Employment

An Action Plan shall be prepared for future manpower engagement in LGED with a view to remedy its prevailing gender discrimination at work place. To meet this end, positions most suitable for the women are to be kept reserved for them by LGED at higher ratio. Similar approaches may also be followed in the case of employment opportunities to be created under the development programs. At the same time increased need-based training and other allied supports shall be extended and necessary measures have to be taken for fixing up equal wages and paying the women for similar work.

b) Working Environment

Measures have to be taken to improve working environment for women in LGED in related areas, on ascertaining the actual success gained towards achieving the set targets in this respect.

One "Internal Review and Resolving Committee (IRRC)", under the supervision of Gender and Development Forum, shall closely monitor the issues involving corporal punishment, mental and sexual harassment of personnel and the beneficiary women at their work places. Any such occurrences shall be reviewed and analysed by the committee on the basis of the complaint of aggrieved person and the committee shall extend all possible cooperation to him/her in receiving proper legal support under the laws of the land.

6. Training:

Work extension areas for the women are to be explored and identified and the women shall be provided with appropriate trainings. Gender sensitive training needs shall be assessed in conformity with the LGED activities and highly skilled human resources will be developed by imparting trainings by expert trainers on gender including management and capacity building.

7. Participation:

Active participation of women shall be ensured in all fields. Gender and Development Forum shall play the lead role in ensuring women's increased active participation by establishing a congenial working atmosphere and providing strategic guidance.

8. Empowerment:

Areas for women empowerment at all levels of LGED (e.g. training, information and technology, income, inheritance, right or full control on acquired assets) shall be identified and measures shall be taken to ascertain their ratio of inclusion based upon proper analysis and competency. At the same time, priority shall be given to the nomination/posting of women at a considerate rate towards ensuring active and effective presentation in decision making process at all levels in organizations/committees/groups in particular. Such incorporations may be clearly made in the project documents, if applicable. Matters related to provide necessary support facilities, scope creation, provisions for equal wages, security at criteria shall be taken in to consideration and be ensured by using appropriate criteria and necessary criteria shall be used in applicable cases in order to all project contract agreements or tender documents.

9. Financing:

The Planning and Administration Unit of LGED shall take all steps to ensure regular fund transfer flow from the Government and the Development Partners to preparing a gender sensitive budget

and its implementation, identify fund allocation/areas, fund for implementation and institutionalization of Gender Equity Strategy.

For development of gender sensitive human resources in all activities of LGED, budget in the Annual Development Program (ADP) from the allocated funds shall be distributed proportionately for gender related trainings through the LGED training Unit.

While formulating a project provisions shall be earmarked for undertaking gender related activities. Project shall have to be developed with cooperation of the Government and the Development Partners keeping budget provision in favour of the Gender and Development Forum and for conducting studies/evaluations as well.

7. THE GOALS, OBJECTIVES and IMPLEMENTATION STRATEGIES OF SMALL SCALE WATER RESOURCES DEVELOPMENT PROJECT PHASE-II (JICA-2) IN THE CONTEXT OF GENDER

7.1 Goals and Objectives:

A. Goals

To Decentralization of ruling system and establishment of institutions with administrative & economic power for the implementation of the project activities with the participation of the male and female.

B. Objectives

To establish the rights of the people of community population for the sake of community development, to be integrated with the national and international commitments for the proper implementation with the objective of eliminating discrimination among male and female;

Considering the commitments of the Government and Partners in preparation, implementation and monitoring of gender responsive plan and budget for all the activities under project.

The specific objectives of the GAP are:

- To advance women's equitable participation with men as decision makers in subproject implementation process and WMCA activities;
- To mainstream a gender perspective in all activities under the project and WMCA through the formation of Gender Development Sub Committee; and
- To reduce gender inequalities in access to and control over the resources and benefits of development in the areas pertinent to the work of the subprojects.

7.2 Gender Topic in Development Project Proposal (DPP) of SSWRDP, Phase-2 (JICA-2)

Outcomes:

- Enhance Income Generation Activities like seed storing, sewing embroidery, live-stock and poultry farming etc.
- Promote gender equality and empowerment of women through their involvement in project activities; (15.2, page 13)

Outputs:

- Supplied equipment for women empowerment (sewing machine, food processing equipment, etc.)
- Empowered women
- Main streaming gender (15.3, page 14)

Sex Disaggregated Data for Target Population and Constraints Faced by Women:

- Capability of contribution to the socioeconomic development are often overlooked of about 50% women in 29 districts of the Project area
- In considering the entire working sector women are only about 25%.
- Women and girls who are disproportionately affected by poverty and discrimination
- Women and girls are not allowed to make decisions about their household's income, or tradition and culture forbid them to leave in their homes; means a great resource goes untapped
- Women are an important part of the solutions needed to truly overcome poverty
- Limited access to land is still a major constraint to women's full participation in rural development
- Insecure rights to landownership and use are a crucial, gender-based barrier to enhancing women's agricultural productivity and income
- Share of women employed in the non-agricultural sector was 20% (baseline FY2010), target FY (2015) was 50% but achieved about 32% (page-652 in 7th five-year plan).
- Female get less (57%) of the male wages for equal works-it is the main problem in the grass root level.
- Working environment is not favourable for women like separate latrine; drinking water facility etc.
- Thus, one of the significant features of the Project's is:
- Confirming women participation at all stages of the subproject implementation process ensuring environmental safety for the women workers (15.5, page 15).

Gender, Women, Children, Person with Disability/Excluded Group's Needs, Employments, Poverty Situation:

- Employment opportunity with preference to the poor and destitute women in making the LCS.
- Lot of training on Income Generating Activities (IGA)
- long term employment opportunity for women in tree plantation along embankments
- Women can also find scope of work in fisheries development activities in potential subprojects
- Promoting activities of women leadership ensuring the participation of women at every stage of the subproject implementation process
- Provision of training on Primary Health Care is exist in the project activity which will contribute in improving children health care.
- At least 33% female members are obligatory in the Management Committees of WMCAs
- Training on Micro-credit and IGA will also generate business/job opportunity to the rural poor.
- Project will provide a number of training on microcredit and income generating activities to increase income of rural poor with an emphasis to the household women (24.4,24.5, 24.6, page 20, 21).

Linkage with 7th Five Year Plan (2016-2020)

- Ensuring participation, social inclusion and women empowerment. (26.0, page 24).

Linkage to Sustainable Development Goals (SDGs):

SDG 5: Achieve Gender Equality and Empower All Women and Girls:

A pre-requisite of empowerment of women is involving them in decision making, income generating activities. The project will support developing WMCAs which comprises of all the stakeholders of water resources project/sub-project of which one third are women. In this way empowerment of women can be achieved. So, the project will contribute towards attainment of the SDG # 5 (page 25).

Relation with the Allocation of Business of the Sponsoring Ministry/Division:

- Creation of employment opportunity for women and their empowerment
- Appointment of women labourers for construction and maintenance work (27.1, page 26).

JICA's Policy on Involuntary Resettlement:

- Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the poverty line, landless, elderly, women and children, ethnic minorities etc. (2.2, page 123).

Scope of Consulting Service

- Gender & Development Specialist (Chapter 3, page 59)

8. GENDER ACTION PLAN (GAP) SMALL SCALE WATER RESOURCE DEVELOPMENT PROJECT, PHASE-2

8.1 Gender Action Plan (GAP):

The LGED stressed to prepare the GAP for each LGED's project in accordance with the LGED's Gender Equity Strategy and the related sector wise action plans. Therefore, the GAP under the SSWRDP, Phase-2 prepared in line with LGED's Gender Equity Strategy and modified Gender Equity Action Plan for water sector.

The GAP prepared for the Phase-2 of Small Scale Water Resources Development Project, (JICA-2) covering nine (9) issues as laid down in the LGED's Gender Equity Strategy. The GAP aimed the issue of equal contribution of male and female at every stage of the subproject implementation process (pre-construction, construction and operation & maintenance stage) under the projects.

Also, the GAP primed in order to enhance and promote gender equality and empowerment of women through their involvement in project activities as well as main streaming of gender as defined in Development Project Proposal (DPP) of Small Scale Water Resources Development Phase-2 as acknowledged in 7.2.

Moreover, as being the second phase of the project, it is also very important to analyse final report of data collection survey team and the lesson learnt from the experience of previous phase. So, the action plan supposed to be having the initiative to incorporate the recommendations received from the assessment and study, as well as initiatives to overcome the limitations identified in the previous phase, and improve the activities for gender mainstreaming.

The GAP consists of the activities under each issue of the gender strategy, indicators against each activity, timeframe (tentative) for implementation of the activity and section/unit, PC and other concerned responsible for implementation of the activities in two (2) parts: 1) the Gender Strategy; and 2) the Gender Action Plan.

8.2 Lesson Learned from Previous Phase:

Lessons learned from LGED's Small Scale Water Resources Development Sector projects including JICA-1 are well documented. A number of gender and development issues remained unresolved and require attention in the future.

- In project documents/DPP of SSWRDP-JICA (phase-1) ensured 33% quota of women members in WMCA Management Committee (MC) only, but for other cases including subcommittee and general members were not specified or targeted.
- Gender Equity Strategy and Action Plans for water sector/ project were not followed properly by the sector/project authority.
- Some of the members of project consultant team were not that gender sensitive and enthusiast.
- Message about scope of women participation were not conveyed properly during initial stage of sub-project (mainly they receive the project gender views during gender & development training when membership already fulfil), so it requires to be informed at the beginning of the project activity.
- Gender issues were not included in basic training courses under the project such as WMCA Management Committee.
- Knowledge of the Gender Equity Strategy and Action Plans was limited mostly to project authority/ staffs at head quarter level.
- There was no such training or programs especially for improving the leadership or empowerment of women to make them more involved in local level decision-making about water management and WMCA affairs.

8.3 Issues have been considered to formulate GAP:

The following have been measured in preparation of Gender Action Plan (GAP) of the Small Scale Water Resource Development Project, Phase 2 attaining equal participation of male and female both in quality and quantity.

- In DPP it is obligatory for Management Committee (MC) to have at least 33% (have been achieved in phase-1) of women members and initiatives needed to be taken to increase up to 50% gradually in MC with the provision for important/key position for women including Chairperson or Secretary in By-Law. Following are given as reference:
 - i. Cooperative Rule 2004, Clause 8: Preparation of Byelaw, bb) Any issues determined by the Registrar, 2) All cooperative society as per their nature can include additional issues in accordance with cooperative Act and Rules.
 - ii. Local Govt. of Bangladesh the post of the commissioner in the union council, pourashava, and city corporations are reserved for the women.
 - iii. One third of the total number of wards been preserved for the women through the pourashava ordinance in the year 1998. In city corporations one third of the wards were been preserved for the women from the beginning. Seats for the women have been preserved for the women in upazila parishad act- 1998. At present the female are

participating in general seat along with the reserved seats in all the election of local Government. But the features of the number of elected female in the general seats along with the preserved seat are not satisfactory.

- iv. According to the Constitution of People Republic of Bangladesh, all citizens are equal before the law and are entitled to equal protection of law (Article 27). Article 28(1) states the principle of non-discrimination: "The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex or place of birth". Women's human rights and basic freedoms are incorporated in Article 28 (2): "Women shall have equal rights with men in all spheres of the state and of public life". Article 29 (1) requires that "there shall be equality of opportunity for all citizens in respect of employment or office in the service of the Republic". The principle of non-discrimination with regard to employment is stated in Article 29(2). The Constitution makes clear that the principle of affirmative action for the advancement of women and other sections of the citizenry who are deprived is not contradictory to the principle of equality. In Article 29 (4) it is stated, "Nothing in this article shall prevent the State from making special provision in favour of women or for the advancement of any backward section of citizens".
- The number of women participation to be encouraged targeting 33% and gradually increase up to 50% including membership (though it was achieved up to 26% in phase-1 without targeting), sub-committees, and keeping key position in various committees.
 - Project authority will have to monitor the proper implementation of the GAP on regular basis from the very beginning of the project.
 - Donor agency will also follow up the progress of Gender Activities like other areas of the project.
 - Gender sensitivity and enthusiasm have to be considered as requirement for recruitment of project staffs at all level including project consultant.
 - Ensure discussion/inclusion on "Gender Activities" of the project from the beginning of the SP selection as described in stage 1, i.e.;
 - Awareness campaign;
 - SP proposal meeting with UP at Union Parishad (UP),
 - Reconnaissance Survey,
 - Feasibility Study,
 - Detail Design,
 - Site validation,
 - Draft and final detailed feasibility report,
 - Inclusion in SP approval conditions etc.Ensure presents adequate number of women and their active participation in all/relevant above levels.
 - Gender trainings to be included in basic training courses for WMCA MC Members for understanding their roles to expedite the gender activities under the project and WMCA.
 - Initiative including training or workshop to be taken to dissemination of Gender Equity Strategy and Action Plans for all level of staffs at PMU and PIU level.
 - Prepare yearly gender action plan and update/ revise as per the requirement or necessity.
 - Necessary clarification/instruction to be encouraged to endorsement in by-laws of WMCA to ensure equal opportunity including preservation important position in all committees of decision making process in sub-project implementation';

- Activities to be taken specially on entrepreneur, agriculture, various processing oriented for poverty reduction and income generation for both male and female;
- Both female and male to be selected from WMCA members in all trainings under the project reasonably as much as possible/ feasible (50:50).
- Separate platform or committee or sub-committee for women development at field / WMCA level to be formed;
- Provide microcredit ensuring **One-third** women and gradually increase up to 50% with special attention on poor and vulnerable women for financial empowerment of women and to commence Income Generating Activities (IGA) to improve their economic condition.
- WMCAs should strive for more active roles of women in the Association and sub-committees;
- Meetings of WMCA will be conducted regularly ensuring active women participation.
- Strong monitoring system to be ensured and continued even after handover the SP not for only gender perspective also for accelerate WMCA activities.
- Employment of women in construction/ reconstruction work, tree plantation and caretaking (at reasonable number/ 20% by the contractor in construction works, **one-third** in earth works by LCS & 100 % in tree plantation and caretaking to be ensured.
- Environmental management plan (EMP) should be gender sensitive.
- For Land acquisition and settlement plan special provision for the women headed families and poor-vulnerable women to be included.
- Ensure participation of potential female members/GDSC during WMCA establishment and preparation of the following development plans to make the plans gender sensitive:
 - O&M plan
 - Agricultural development plan
 - Fishery development plan
 - Gender development plan
 - Micro-Credit development plan
 - Agri-Business plan (for flagship development Sub-Project)
- Performance monitoring with special emphasis on gender issues.
- Environmental impact monitoring with attention on women and child health.
- Follow up support & training including women.
- Arrange half yearly meeting with the participation of the representatives of the concern line departments for necessary revision and follow up MoU & field level activities as well.

Gender and development activities for Small Scale Water Resource Project (SSWRDP) Phase-2 are showed in **Table-6** in consistence with LGED gender equity strategy and **Table-7** in accordance with the stages of the project.

Table7: Gender Activity in LGED Gender Equity Strategy Element

Strategy	Gender Activity
1. Policy Adoption:	1.1 Formulate Gender Action Plan (GAP) for Small Scale Water Resource Development Project (SSWRDP) Phase-2 in consistence with LGED gender equity strategy & Gender Action Plan for Water Sector and lesson learned from previous phase. 1.2 Formulate of operational guideline for the implementation of the gender action plan.

Strategy	Gender Activity
	1.3 Review and evaluate Gender Equity Action Plan and implementation guideline. 1.4 Updating of Gender Equity Action Plan and implementation guideline.
2. Institutional Arrangements:	2.1 Formation a Working Group (WG) in IWRMU specifying the responsibility and gender trainings to all. 2.2 Enrolment adequate number or as much as possible of female staff targeting 50:50 at various level including Sociologist, facilitators (agriculture development, fishery development and in charge of general affairs in each upazila). And provide gender trainings to all staff. 2.3 Select gender focal point (GFP) for project/PMU at HQ and at division, district and Upazila level. 2.4 Every PRA & FS team should recruit women staff.
3. Data collection, Monitoring and Evaluation:	3.1 Collection of gender segregated data/Information through the format as prepared by the project as well as by Gender and Development Forum (GDF). 3.2 Routine data collection, generate and updating data base on gender indicators: quantitative, qualitative (for all related information; such as: number of male and female in OC, FMC and WMCA and member, committee/ sub-committee member, number & quantity of share/savings, micro credit, self-employment, employment in LCS and construction works, training, etc.). 3.3 Analyzing and review collected gender disaggregated and gender sensitive data/information; prepare reports on them and send to all concern. 3.4 Analytical reports (annual/ongoing): <ul style="list-style-type: none"> - Effect Monitoring and Evaluation (EME) - Gender component and recommendations 3.5 Review progress of gender activities in Monthly Progress Review Meeting. 3.6 Include progress of gender activities in monthly progress report. 3.7 Review progress of gender activities in quarterly meeting of working group and gender focal point. 3.8 Recommend to PMU based on results of quarterly meeting by working group. 3.9 Arrange half yearly meeting with the participation of the representatives of the concern line departments for necessary revision up MoU and follow up of field level activities.
4. Infrastructure Development:	4.1 Implement programs/structure taking into account the need for women-friendly facilities or most essential support facilities for women and children including separate sitting arrangements/ rooms, toilets & water supplying system, first aid services, and child care etc. or any other facilities as necessary/stipulated by the potential women members/GDSC.
5. Employment Opportunity and Working Environment:	5.1 Ensure Employment of women in construction/ reconstruction work, tree plantation and caretaking: <ul style="list-style-type: none"> ➤ at reasonable number/ targeting 20% by the contractor in construction works ➤ 33% in earth works by LCS aiming to achieve 50:50 and ➤ 100% in tree plantation and caretaking. 5.2 Include the gender sensitive clause on women employment in the tender document for contractor to ensure effective implementation and discuss the issue in pre-bid meeting to make sure women employment and women friendly working environment for women. 5.3 Ensure implementation of the women friendly facilities both in contractors and LCS work.

Strategy	Gender Activity
	<p>5.4 Ensure proper operation and maintenance to keep the facilities usable around the year</p> <p>5.5 Provide equal pay for equal work.</p> <p>5.6 Identify appropriate income generating activities and include women in those to increase employment for women.</p> <p>5.7 Ensure participation of potential female members/GDSC during preparation of the following development plans to make the plans gender sensitive.</p> <ul style="list-style-type: none"> - O&M plan - Agricultural development plan - Fishery development plan - Gender development plan - Micro-Credit development plan - Agri-Business plan (for flagship development SP) <p>5.8 Concerned SC will implement above gender sensitive development plan.</p>
6. Training:	<p>6.1 Gender Issues to be included in basic training courses for WMCA MC Members for understanding their roles to expedite the gender activities under the project and WMCA.</p> <p>6.2 Gender Issues to be included in the contractors training courses. Specially responsibilities of the contractors in implementing gender related activities including women employment and women friendly working environment in construction work.</p> <p>6.3 Both female and male to be selected from WMCA members in all trainings under the project reasonably as much as possible/ feasible (50:50).</p> <p>6.4 Training needs assessment for identify women friendly work.</p> <p>6.5 Conduct special training to orient Project staff and beneficiaries on gender issues.</p> <p>6.6 Include gender awareness/sensitivity training modules for both men and women (on such topics as human rights of women, women & child laws and women & child health issues) in the training activities.</p> <p>6.7 Increase women participation in management and skill development training.</p> <p>6.8 Keeping provision & providing of income generation training for women (fish cultivation, tree plantation, rearing livestock, poultry & vaccination, mushroom cultivation, preparing organic/compost fertilizer, engraving, tailoring etc.) & establishing communication with the concerned line department under the project (such as Agricultural Extension, Fisheries, Livestock and Women Affairs) as per their need.</p>
7. Participation:	<p>7.1 Motivate and involve women from the beginning of subproject development process: i.e., awareness campaign, subproject proposal meeting at Union Parishad, Reconnaissance Survey, Detail Feasibility Study, Detailed Design Study and etc.</p> <p>7.2 Ensure effective participation of men and women in all stages of the Project implementation cycle: i.e., Planning, Implementation, and O&M</p>
8. Empowerment:	<p>8.1 Increase effective participation of men and women in all stages of the Project implementation cycle: i.e., Pre-construction, Construction, and O&M.</p> <p>8.2 Encourage to inclusion following provisions in WMCA by-laws to ensure qualitative and quantities women participation:</p> <ul style="list-style-type: none"> ➤ Ensuring one-third women in MC of WMCA and in all sub-committees.

Strategy	Gender Activity
	<ul style="list-style-type: none"> ➤ Increase women in MC of WMCA up to 50% with the important/key positions including Chairperson or Secretary to ensure women's participation in decision making process. ➤ Ensure one-third of female membership in WMCA and try to achieve up to 50%). <p>8.3 Ensure recruitment of potential female as Accountant or Cashier of WMCA.</p> <p>8.4 Formation separate platform or committee or gender development sub-committee for development female members.</p> <p>8.5 Provide microcredit ensuring One-third women and gradually increase up to 50% with special attention on poor and vulnerable women for financial empowerment of women.</p>
Financing:	Ensure budget allocation of all training and activities under the project for gender related aspects.

Table 8: Gender Activities in accordance with the Stages of the Project

Sub-project Development Process	Gender Activities
Stage 1: Pre-Construction (Step-1-12)	1. Formulation of yearly Gender Equity Action Plan. 2. Review and evaluate Gender Equity Action Plan. 3. Updating of Gender Equity Action Plan.
	4. Recruitment adequate number or staff as much as possible of female targeting to 50:50 at PMU and PIU level.
	5. Formation a Working Group (WG) in IWRMU specifying the responsibility and gender trainings to all includes orientation on gender.
	6. Training or workshop to be initiated to disseminate GAP (2017-21) for all level of staffs not only HQ but also field levels at the beginning of the Project.
	7. "Gender Issues" of the project will have to discuss/include from the beginning of the SP development process i.e.; <ul style="list-style-type: none"> ➤ Awareness campaign; ➤ SP proposal meeting with UP at Union Parishad (UP), ➤ Reconnaissance Survey, ➤ Detail Feasibility Study, ➤ Detail Design, ➤ Site validation, ➤ Draft and final detailed feasibility report, ➤ Inclusion in SP approval conditions
	8. Provide Gender Awareness Training and Role of Gender in Water Management for UP Chairman and Members.
	9. Provide Training/Orientation for FS Teams.
	10. Arrange separate meetings with male and female at village level during work and data collection.
	11. Collection of gender disaggregated data by the FS team.
	12. In proposing mitigation measures (to assist persons negatively affected by subprojects), information on different impacts on men and women should be collected and recorded.

Sub-project Development Process	Gender Activities
	<p>13. Women and men both to be treated in the same way while implementing mitigation/ compensation measures, affected; i.e., both should get similar access to alternative livelihood opportunities or other mitigation arrangements.</p> <p>14. Preparing beneficiary lists, female-headed households should be listed separately.</p> <p>15. Formation of WMCA OC/ FMC ensuring one-third female members with one female in vital position, ie; Chairperson or secretary and they will be trained.</p> <p>16. Encourage beneficiaries/FMC for keeping provision in by-laws of WMCA for ensuring adequate/equal opportunity between male and female including preservation important position in all committees of decision making process in sub-project as described below-</p> <ul style="list-style-type: none"> ➤ Provision of one- third female member at all committees (MC and SC's) and membership level from all social categories. ➤ Provision to increase up to 50% gradually in MC of WMCA with the provision for important/key position for women as Chairperson or Secretary. ➤ Provision for important/key position for women as Chairperson or Secretary. <p>17. Registration of by-laws WMCA ensuring the provisions regarding the percentage and key position of women in various areas.</p> <p>18. Dissemination of by-laws regarding gender issues among the stakeholders including beneficiaries properly.</p> <p>19. Ensure recruitment potential women as Accountant of Cashier of WMCA.</p> <p>20. Arrange meeting with the potential women to identify the women-friendly facilities or most essential support facilities for women and children.</p> <p>21. Preparation detail design considering women-friendly facilities or most essential support facilities for women and children needed in related areas including separate sitting arrangements/ rooms, toilets & water supplying system, first aid services, and child care etc. or any other facilities as necessary/stipulated by the women members.</p> <p>22. Include the gender sensitive clause on women employment (reasonable ratio/ 20%) in the tender document for contractor to ensure effective implementation and discuss the issue in pre-bid meeting to make sure women employment and women friendly working environment for women.</p> <p>23. Arrange training 'Concept on Gender for LGED, PMU, and PC.</p> <p>24. Provide 'Orientation on gender activities in Water Management for Partner Agencies (DWA, DOF, DOC, DAE, DOL (HQ Dist. and UZ).</p> <p>25. Arrange necessary ToT for all relevant staff for providing training on gender and other related issues under the project.</p>
<p>Stage 2: Construction (Step 13-16)</p>	<p>1. Formation of LCS ensuring-33% women member including women in key position ie; chairperson or secretary and gender issues included in LCS training.</p> <p>2. Formation of separate male and female LCS in possible area.</p> <p>3. Ensure reasonable number/ 20% women employment in construction/ Contractors' work.</p> <p>4. Ensure one-third women employment in earth works by LCS.</p> <p>5. Safeguard equal wage for equal work</p> <p>6. Ensure implementation of the women-friendly facilities or essential support facilities including separate sitting arrangements/ rooms, toilets & water supplying system, first aid services, and child care etc. or as proposed/identified by the potential women/GDSC.</p>

Sub-project Development Process	Gender Activities
	7. Keep the constructed facilities functional around the year.
	8. Both female and male to be selected from WMCA members to conduct and attend in trainings under the project reasonably as much as possible (50:50).
	9. Arrange training/dissemination on gender awareness, woman empowerment, leadership and role in decision making in WMCA's for: <ul style="list-style-type: none"> ➤ WMCA committee/ members & field staff (CO, GF). ➤ WMCA member's family/SP beneficiary's layer.
	10. 'Refresher Training on Gender Awareness' for WMCA Members for Additional Development and Flagship Development
	11. Ensure formation of sub-committees (O&M, Agriculture, Fishery, Micro-Credit, Agri-Business for flagship development SP) with one-third female members.
	12. Formation separate platform or committee or gender development sub-committee (GDSC) for women development.
	13. Preparation of Gender Development Plan by GDSC with assistance of PIU/ Sociologist, GF, CO, DWA, PMU, Sociologist-gender & Inst. PC/ GDS, IDS/SIDS through development planning workshop.
	14. Ensure participation of potential female members/GDSC during preparation of the following development plans to make the plans gender sensitive. <ol style="list-style-type: none"> a. O&M plan b. Agricultural development plan c. Fishery development plan d. Gender development plan e. Micro-Credit development plan f. Business plan (for Flagship Development)
	15. Concerned SC will implement above gender sensitive development plan.
	16. Preparation of Microcredit Program/plan with the provision of One-third women and try to achieve up to 50% with special attention on poor and vulnerable women.
	17. Provide microcredit ensuring One-third women and try to achieve up to 50% with special attention on poor and vulnerable women for financial empowerment of women.
	18. Need assessment for identifying the necessary equipment for women.
	19. Procurement of Equipment taking into account appropriate/identified equipment for women.
	20. Training needs assessment for identify female friendly work.
	21. Training on appropriate/identified Income Generating Activities (IGA) for women members of WMCA.
	22. Dissemination Training on income generating activities for the male-female beneficiaries.
	23. Routine data collection, generate and updating data base on gender indicators: quantitative, qualitative (for all related information; such as: number of male and female in WMCA member, committee/ sub-committee member, number & quantity of share/savings, micro credit, self-employment, employment in LCS and construction works, training, etc.).
	24. Analyzing and review collected gender disaggregated and gender sensitive data/information.
	25. Prepare analytical reports on them (annual/ongoing) and send to all concern:

Sub-project Development Process	Gender Activities
	<ul style="list-style-type: none"> - Effect Monitoring and Evaluation (EME) - Gender component and recommendations <p>26. Review progress of gender activities in Monthly Progress Review Meeting by PMU and PIU.</p> <p>27. Include progress of gender activities in monthly progress report PMU and PIU.</p> <p>28. The MIS will document gender-sensitive data for all activities under project.</p> <p>29. The MIS will document details of the first year's O&M (annual plan preparation, follow-up for year-round work) in a way that demonstrates the levels of participation of both women and men.</p>
<p>Stage 3: First Year Joint O&M (Step 17-20)</p>	<ol style="list-style-type: none"> 1. One-third of O&M Committee members and those who plan O&M activities are women. 2. O&M SC will carry out maintenance work of women-friendly facilities where applicable. 3. Include progress of gender activities in completion report.

9. GENDER RESPONSIVE PLANNING OF THE PROJECT

9.1 Steps and Particulars of the Preparation of the Gender Sensitive Planning



9.3 Description of the Steps of Preparation of Plan

9.3.1 Specifying the Duties and Responsibilities of the Organization

The duties and responsibilities of the organization need to be specified for preparation of the plan. As the plan is prepared for a specific time frame, so it is required to specify the schedule of works which will be performed in which time. If the priorities of the works have been prepared at the initial level of planning, it ensures a special benefit in implementation of that plan.

9.3.2 Specifying the Participants

After specification of the duties and responsibilities, it requires to consider and specify who will implement that, which is through whom this will be implemented or the participation of whom is necessary for the implementation of the plan. For example, in case of union parishad, one road will have to construct. So, in this case will have to specify the required stakeholders to be participating for the construction of the road, so that the union parishad can ensure their cooperation and participation while construction.

9.3.3 Problems Identification

Problems identification is a most important step of planning, because, there are continual problems in every area. Many of the problems have to face at a time. So, if the problems are properly identified and time is been fixed for solving specific problems, so that the initiatives can be thoughtful and the outcomes can evaluate and monitored properly.

9.3.4 Prioritization of the Problems

Will have to fix up the priority of the problems on which the works will be operated for solving the problem. As because all the problems cannot be solved within the time frame of the plan, so the problems which was been prioritized in the previous session of planning, some of the problems will have to prioritized in this level for taking initiatives to solve that.

9.3.5 Specifying the Expected Change

It is very important to specify the expected change through the planning. Sometimes it is found that, the changes cannot be found after completing the implementation of the plan. If the expected changes can be specified earlier, brings special benefit. As when the works will be implemented, this expectation will be under consideration, and during evaluation and monitoring it will bring special benefit. So, it is very important to specify the changes earlier expected from the planning.

9.3.6 Specifying the Resources

The specialist thinks that planning is mainly required for the limited resources. The resources of the project are limited. Plan is usually made to specify how the plan will be implemented through utilizing that limited resources. So, the required or available resources will have to specify previously for the expected changes. So, in this step of planning it requires to specify the required or available resources. The resource does not mean only cash fund; all the available resources are under this. Such as- social capital is considered as very important resources.

9.5 Sectors of Preparing Gender Sensitive and Pro-People Budget

9.5.1 Income Generating Sources

- More allotment for the women in income generating activities for reducing the discrimination among the men and women;
- Allotment for the women to reduce the discrimination in expert manpower;
- Allotment for creating awareness to bring the women in existing income generating professions;
- Allotment for the skill development training of the women to be involved in income generating activities;
- Special allotment for the assistance in marketing of the products produced by the women;
- Allotment for the women entrepreneurs;
- Allotment for the basic facilities for the women in common and working places like- toilets, rest room, child care center, etc. or any other facilities as necessary/stipulated by the women members.

9.5.2 Service Sector

- Special allotment for creating cooperative environment for the female in the health centers;
- Special allotment for ensuring primary health care for mother and child.

9.5.3 Social Sectors

- Special initiatives and allotment for creating awareness against violence against women;
- Allotment in the budget for inspiring in education, resisting sexual harassment, etc.
- Arrangement of training and allotment for that.

9.6 Issues to be Considered for Ensuring Gender Equality in Implementation of the Plan:

9.6.1 Different Committees of the Sub-Project/ WMCA

Ensure that, there are male and female representatives in prescribed ratio of the GAP in different activities, committees, training under the project and WMCA.

9.6.2 Different Meetings, General Meetings and Special Meeting of the Sub-Project/ WMCA

Ensure the participation of male and female in different meetings, general meetings and special meeting of project and providing importance to the opinion of all the participants.

9.6.3 Services of the Project

Consider in the services provided by the project, so that, both the male and female gets equal services for there.

9.6.4 Sub-Project Commencement and Implementation

Receive opinion of male and female in sub-project initiation and implementation, so that, both male and female can be involved with the planning. As, if one portion of the community become detached from the planning it will not ensure the benefit of the project to all the people.

9.6.6 Conducting Judgments

At present male are getting more benefit than female in conducting local judgments. But it is necessary to include women in operation of judgments along with men, so that, both the male and female can participate in operation of local judgments.

9.6.7 Committee/ Cell for Gender Development

Ensure the participations of women along with male in the committee for gender development, so that, the victim women and children can get all out support from there.

9.6.8 Gender and Development Subcommittee (GDSC)

The Gender and Development Sub-committee shall be formed by WMCA MC from the potential members to boost up the gender development activities. The subcommittee will be accountable to the WMCA MC for gender activities, increase number of women in all possible activities, training under the project and WMCA. The responsibilities/TOR of GDSC will include:

1. Receive training on gender & development,
2. Prepare annual Gender Development Plan with assistance of Sociologist, General Facilitator/PIU and DWA,
3. Assist WMCA in collection of vulnerable women for LCS formation,
4. Assist WMCA in formation of separate female LCS in possible area,
5. Negotiate to increase women participation in all possible area/activities/training under the project and WMCA i.e.,
 - to increase at least **one-third** women members in enrolment of membership,
 - for important/key position for women as Chairperson or Secretary in MC,
 - to increase up to 50% women gradually in MC,
 - to increase/include **one-third** women members at all sub committees,
 - to inclusion at least **one-third** women in LCS,
 - to inclusion of women as workers as much as possible in construction work,
 - to provide microcredit to at least **one-third** women and gradually increase up to 50% with special attention on poor and vulnerable women,
 - to ensure equal payment for equal work in LCS and construction work
6. Follow up, monitor, review and report to MC about the construction of women-friendly facilities or essential support facilities in LCS, Construction, WMCA office and other possible area, with assistance of Sociologist, General Facilitator/PIU,
7. Selection of appropriate women participants/family for gender awareness, women human rights and legal suspects, women's leadership and empowerment, and their Roles in Decision Making, agriculture, fisheries, IGA, LCS and other trainings under the project,
8. Assessment of training needs to identify appropriate income generating activities with assistance of Sociologist, PIU
9. Prepare proposal on identified training and send to PIU and PMU through WMCA,
10. Assist Microcredit Subcommittees for selection of suitable women for providing microcredit and repayment procedures,
11. Assist O&M subcommittee in collection of O&M fees from women farmers (if any),
12. Assist MC in organizing training at WMCA level,

13. Conduct training for the members and family layer on gender awareness, women human rights and legal suspects, IGA etc.
14. Participate/ attend any meeting/training/workshop arranged by WMCA or project
15. Holding Meeting quarterly to review progress of gender activities, ratio of women participation in activities/training under the project and WMCA,
16. Prepare of report on progress of gender activities, ratio of women participation in activities/training under the project and WMCA,
17. Other activities that will be given by the MC and project.

Table 9: Implementation Procedures of gender activities for LGED/ Local Government layer

Major Activities	Specific Activities	Responsibility
1. Formulate Gender Action Plan (GAP)	<ul style="list-style-type: none"> ▪ Preparation of GAP 2017-2024 ▪ Submission to PD, PMU, GDF ▪ Review and evaluate ▪ Updating/revision ▪ Approval by ▪ Implementation by all stakeholder 	PMU, SAPI Team SAPI Team PD, PMU, GDF, IWRM unit SAPI Team PD, PMU IWRMU, PMU, PC, PIU, WMCA and other concerned
2. Formulate Operation Guidelines	<ul style="list-style-type: none"> ▪ Preparation of Operation Guideline for proper implementation of GAP ▪ Submission to PD, PMU ▪ Review and evaluate ▪ Updating/revision ▪ Approval ▪ Implementation by all stakeholder 	PMU, SAPI Team SAPI Team PD, PMU, GDF, IWRM unit SAPI Team PD, PMU IWRMU, PMU, PC, PIU, WMCA and other concerned
3. Preparation of Yearly Gender Action Plan (GAP)	<ul style="list-style-type: none"> ▪ Preparation of yearly GAP (each year) ▪ Review and evaluate ▪ Updating/revision ▪ Approval by PD ▪ Implementation by all stakeholder 	PMU and PC PMU PD, PMU IWRMU, PMU, PC, PIU, WMCA and other concerned
4. Recruiting staff and selecting gender focal points	<ul style="list-style-type: none"> ▪ Recruitment of female staff as much as possible targeting 50:50 ▪ Recruitment of female staff as much as possible targeting 50:50 at PIU Level ▪ Formation of Working Group (WG) at IWRM unit ▪ Holding quarterly meeting of Gender Focal Point and Working Group ▪ Recruit/select gender focal point at project HQ level ▪ Select gender focal point at region/D-PIU, U-PIU 	SE Admin, PD- PMU, Firm/ NGO IWRMU, PMU, PIU SE-O&M, IWRMU, SE-O&M, IWRMU, WG, GFP, GDS PD, PMU SE, Region, District XEN, Upazila Engineer, Sociologist-gender (PMU)
5. Training or workshop on GAP (2017-24) for HQ level	<ul style="list-style-type: none"> ▪ Organize and preparation training or workshop at HQ level for proper dissemination of GAP ▪ Approval of training or workshop ▪ Conduct training or workshop 	PMU, PC/GDS, SIDS PD-PMU PMU, PC/GDS, SIDS, GDF
6. Training or workshop on GAP for PIU level	<ul style="list-style-type: none"> ▪ Organizing and preparation ▪ Review & Approval ▪ Conduct training/workshop 	PMU, PC, PIU PD-PMU PMU, PC, PIU
7. Dissemination of knowledge on Gender activities at the beginning of the SP development process	<ul style="list-style-type: none"> ▪ Include gender activities/women participation in leaflets, posters for awareness campaign. ▪ Discuss gender activities in SP proposal meeting with UP ▪ Discuss gender activities during Reconnaissance Survey, FS-DD 	PMU D-PIU, U-PIU PMU, PIU, PC

Major Activities	Specific Activities	Responsibility
	<ul style="list-style-type: none"> ▪ Inclusion the proportionate rate/adequate number of women's participation in points for SP approval conditions ▪ Arrange separate meetings with men and women at village level during feasibility study, data collection, site validation by FS-DD team etc. 	PMU, PIU PRA, FS team, D/D, UP
8. Gender Awareness Training UP Chairman and Members	<ul style="list-style-type: none"> ▪ Preparation/ modification of module ▪ Review and Approval ▪ Organize and preparation training ▪ Conduct training 	PMU, SAPI Team/PC PD, PMU PMU, PIU, PC PMU, PIU, PC
9. Training/Orientation for FS Teams:	<ul style="list-style-type: none"> ▪ Preparation/ modification of module ▪ Review and Approval by ▪ Organize and preparation training ▪ Conduct training by PMU, PC 	PMU, SAPI Team/PC PD, PMU PMU, PC PMU, PC
10. Detail Feasibility Study	<ul style="list-style-type: none"> ▪ Arrange separate meetings with male and female at village level during feasibility study and data collection. ▪ Collection of gender disaggregated data by the FS team ▪ Preparation of separate beneficiary lists for female-headed households ▪ Proposed mitigation plans are prepared with specific data on both affected male and female ▪ Preparation of Final report as recommended by GDS/GDF/WG. 	FS Team, PIU PIU, PMU,PC,WG
11. Formation of Organizing Committee (OC):	<ul style="list-style-type: none"> ▪ Discuss gender activities in open public meeting to potential for OC formation ▪ Formation of OC ensuring minimum one-third female members with one female in vital position, i.e.; Convener/ Chairperson or secretary ▪ Approval of OC 	D-PIU, U-PIU PIU, DOC, OC selection committee Beneficiaries/DOC
12. Formation/Election of First Management Committee (FMC):	<ul style="list-style-type: none"> ▪ Discuss gender activities/scope of women participation in JICA-2 in General Meeting to potential beneficiaries called for election of FMC. ▪ Encourage EC, potential beneficiaries for ensuring at least one-third (33%) female members with one female in vital position, i.e.; Chairperson or secretary. 	PIU and election committee (EC)/OC, DOC PIU/GF/CO to EC, potential beneficiaries
13. Enrollment of Membership:	<ul style="list-style-type: none"> ▪ Assist in preparation separate list for male-female headed households during preparation of beneficiary list. ▪ Support in enrollment of potential beneficiaries to WMCA members with a focus to enroll of one-third women members targeting to achieve up to 50%. 	PIU/GF/CO to Task force/FMC PIU/GF/CO to Task force/FMC
14. Preparation of By-laws	<ul style="list-style-type: none"> ▪ Encourage beneficiaries/FMC keeping the following provision in by-laws of WMCA for ensuring equal opportunity between men and women including preservation important position in all committees of decision making process in sub-project: <ul style="list-style-type: none"> ➤ Provision of one- third women members at all committees and membership level from all social categories, 	PIU/Sociologist, GF, CO

Major Activities	Specific Activities	Responsibility
	<ul style="list-style-type: none"> ➤ Provision to Increase up to 50% gradually in MC of WMCA and other committees, ➤ Provision for important/key position for women as Chairperson or Secretary ▪ Pursue by in DOC for Registration of laws ensuring the provisions regarding the percentage and key position of women in various areas ▪ Assist FMC/WMCA in dissemination of by-laws regarding gender issues among the stakeholders including beneficiaries properly. 	<p>PIU/Sociologist, GF, CO</p> <p>PIU/Sociologist, GF, CO</p>
15. Preparation of Detail Design:	<ul style="list-style-type: none"> ▪ Arrange meeting with the potential women beneficiaries/GDS to identify the women-friendly facilities ▪ Preparation of detail design considering special issues/facilities (as necessary/stipulated by the women members/ GDS) needed in related areas for the women and children ▪ Propose mitigation measures on different impacts (negatively affected) for men and women ▪ Review and Approval ▪ Implementation of women-friendly facilities 	<p>PIU, NGO/Firm</p> <p>NGO/Firm, PIU, PMU, PC</p> <p>FS/NGO/Firm, PIU, PMU</p> <p>PD, PMU</p> <p>PMU, PIU, Contractor, LCS</p>
16. Construction and LCS Work:	<ul style="list-style-type: none"> ▪ Modification of LCS Guidelines (if necessary) ▪ Approval of LCS ▪ Formation of LCS ensuring-33% women member including women in key position ie; chairperson or secretary ▪ Formation of separate male and female LCS in possible areas ▪ Review and Approval by PMU ▪ Include the gender sensitive clause about women employment (reasonable ratio/ 20%) and women friendly working environment in the tender document for contractor to ensure effective implementation and discuss the issue in pre-bid meeting to make sure women employment and women friendly working environment for women. ▪ Ensure reasonable number/ 20% women employment in construction/Contractors' work. ▪ Ensure one-third women employment in earth works by LCS. ▪ Ensure construction of women-friendly facilities or essential support facilities (separate sitting arrangements/ rooms, toilets & water supplying system, first aid services, and child care etc.) in LCS, Construction, WMCA office and other possible area ▪ Safeguard equal wage for equal work. 	<p>PMU, PC</p> <p>PD, PMU</p> <p>PIU, WMCA</p> <p>PIU, WMCA</p> <p>PD, PMU</p> <p>PMU/PIU</p> <p>PMU, PIU, PC, Contractor</p> <p>PMU, PIU, PC, LCS</p> <p>PMU, PIU, PC, WMCA, Contactor, LCS</p> <p>Contactor, LCS, PMU, PIU, PC</p>
17. Revision of Basic training module including gender issue	<ul style="list-style-type: none"> ▪ Modification (inclusion of gender issue) of module ▪ Review and Approval ▪ Organize and preparation training ▪ Conduct training 	<p>PMU, PC/GDS, IDS/SIDS</p> <p>PD, PMU,</p> <p>PMU, DOC</p> <p>PIU, DOC, DWA</p>
18. Concept on Gender for PMU, PIU and PC	<ul style="list-style-type: none"> ▪ Modification of Training Module on the basis GAP 2017-2024 ▪ Review and Approval ▪ Organize and preparation training ▪ Conduct training 	<p>PMU, SAPI team/PC</p> <p>PD, PMU</p> <p>PMU, PC</p> <p>PMU, PC, GDF, DWA, Specialized NGO</p>

Major Activities	Specific Activities	Responsibility
19. TOT on Gender for all relevant staff	<ul style="list-style-type: none"> ▪ Modification of Training module on gender ▪ Review and Approval ▪ Organize and preparation training ▪ Issuance of letter to all concern ▪ Allocating budget ▪ Conduct training 	PMU, SAPI team/PC PD, PMU PMU, PC, SE- region, PIU, or selected Suitable GO/NGO (Will depend on the availability of venue) PD, PMU PD, PMU to D-PIU/ other organization (depends availability of venue) PMU, PC, SE- region, PIU, or selected Suitable GO/NGO
20. TOT on Women Human Rights, Legal Aspects and woman Empowerment	<ul style="list-style-type: none"> ▪ Preparation of Training module ▪ Review and Approval ▪ Issuance of letter to all concern ▪ Allocating budget to D-PIU to D-PIU/ other organization ▪ Organize and preparation training ▪ Conduct training 	Third party expert/ selected Suitable GO/NGO PD, PMU, third party expert/ selected Suitable GO/NGO PD, PMU PD, PMU PMU, PC, SE- region, PIU, Third party expert or selected Suitable GO/NGO Third party expert/ selected Suitable GO/NGO
21. Orientation on JICA-2 Gender Activities in Water Management for Partner Agencies	<ul style="list-style-type: none"> ▪ Modification of Training module on gender ▪ Review and Approval ▪ Issuance of letter to all concern by PD, PMU ▪ Allocating budget by PD, PMU ▪ Organize and preparation training ▪ Conduct training 	PMU, SAPI team/PC PD, PMU PD, PMU PD, PMU PMU, PC, SE-Region, PIU, or selected Suitable PMU, PC, SE- region, PIU, DWA
22. Training on Gender Equity and Women's Empowerment, and Orientation on JICA-2 Gender Activities in Water Management for FS Team	<ul style="list-style-type: none"> ▪ Modification of Training module ▪ Review and Approval ▪ Issuance of letter to all concern ▪ Allocating budget ▪ Organize and preparation training ▪ Conduct training 	PMU, SAPI team/PC PD, PMU PD, PMU PD, PMU PMU, PC PMU, PC, GDF, DWA
23. Gender Awareness Training and Role of Gender in Water Management for UP Chairman and Members	<ul style="list-style-type: none"> ▪ Modification of Training module ▪ Review and Approval ▪ Issuance of letter to all concern ▪ Allocating budget ▪ Organize and preparation training ▪ Conduct training 	PMU, SAPI team/PC PD, PMU PD, PMU PD, PMU PMU, PC, SE-Region/PIU PMU, PC, SE-Region/PIU, DWA, DCO/UCO
24. Gender Awareness Training and Role of Gender in Water Management for the Field Staff and WMCA MC	<ul style="list-style-type: none"> ▪ Modification of Training Module in line with the GAP ▪ Review and Approval ▪ Issuance of letter to all concern ▪ Issuance of letter to U-PIU ▪ Allocating budget to D-PIU ▪ Organize and preparation training ▪ Conduct training 	PMU, SAPI team/PC PD, PMU PD, PMU District Executive Engineer PD-PMU PIU, WMCA D-PIU, U-PIU, PC, DWA, DOC
25. Gender Awareness Training and Role of Gender in	<ul style="list-style-type: none"> ▪ Modification of training module ▪ Review and Approval ▪ Issuance of letter of instruction to all concern ▪ Issuance of letter to U-PIU 	PMU, PC PD-PMU PD-PMU District Executive Engineer

Major Activities	Specific Activities	Responsibility
Water Management for the WMCA members	<ul style="list-style-type: none"> ▪ Allocating budget to D-PIU ▪ Organize and preparation training ▪ Conduct training 	PD-PMU PIU/ WC, Members/GDSC PIU, DWA, UCO WMCA MC, Trained Members/GDSC
26. Gender Awareness Training and Role of Gender in Water Management for the Family Layer of the WMCA Members	<ul style="list-style-type: none"> ▪ Preparation of training material ▪ Issuance of letter of instruction to all concern ▪ Issuance of letter to U-PIU ▪ Allocating budget to D-PIU ▪ Organize and preparation training ▪ Conduct training 	PIU, Trained Members/GDSC PD-PMU District Executive Engineer PD-PMU PIU/ WC, Members/GDSC PIU, DWA, UCO WMCA MC, Trained Members/GDSC
27. Gender Awareness Dissemination Training for SP Beneficiaries	<ul style="list-style-type: none"> ▪ Preparation of training material ▪ Issuance of letter of instruction to all concern ▪ Issuance of letter to U-PIU ▪ Allocating budget to D-PIU ▪ Organize and preparation training ▪ Conduct training 	PIU, Trained Members/GDSC PD-PMU District Executive Engineer PD-PMU PIU/ WC, Members/GDSC PIU, DWA, UCO WMCA MC, Trained Members/GDSC
28. Training on Women Human Rights, Legal Aspects for Field Staff, WMCA MC and selected members	<ul style="list-style-type: none"> ▪ Preparation of training module ▪ Review and Approval ▪ Issuance of letter to D-PIU ▪ Issuance of letter to U-PIU ▪ Allocating budget to D-PIU ▪ Organize and preparation training ▪ Conduct training 	PMU/Trained staffs/PC PD, PMU PD, PMU District Executive Engineer PD, PMU PIU/ WMCA MC, Members/GDSC PMU/PIU, Trained Staff/PC, DWA
29. Dissemination Training on Women Human Rights, Legal Aspects for SP Beneficiaries	<ul style="list-style-type: none"> ▪ Preparation of training material ▪ Issuance of letter of instruction to all concern ▪ Issuance of letter to U-PIU ▪ Allocating budget to D-PIU ▪ Organize and preparation training ▪ Conduct training 	PMU/Trained staffs/PC/PIU PD, PMU District Executive Engineer PD, PMU PIU/ WMCA MC, Members/GDSC PIU/DWA, Trained staffs/ PC/Trained Members/GDSC
30. Training on Women's Leadership and Empowerment, and their Roles in Decision Making in WMCAs for WMCA MC and selected Members	<ul style="list-style-type: none"> ▪ Preparation of Training Module ▪ Review and Approval ▪ Issuance of letter to all concern ▪ Issuance of letter to U-PIU ▪ Allocating budget to D-PIU ▪ Organize and preparation training ▪ Conduct training 	PMU/Trained staffs/PC/PIU PD, PMU PD, PMU District Executive Engineer PD-PMU PIU, WMCA MC/GDSC PMU/PIU, PC, DWA, Trained staffs
31. Dissemination Training on Women's Leadership and Empowerment, and their Roles in Decision Making in WMCAs for SP Beneficiaries	<ul style="list-style-type: none"> ▪ Preparation of training material ▪ Review and Approval ▪ Issuance of letter of instruction to all concern ▪ Issuance of letter to U-PIU ▪ Allocating budget to D-PIU ▪ Organize and preparation training ▪ Conduct training 	PMU/Trained staffs/PC/PIU PD, PMU/PIU PD, PMU District Executive Engineer PD-PMU PIU/ WMCA MC, Members/GDSC PIU/DWA, Trained staffs/ PC/Trained Members/GDSC
32. Refresher Training on Gender	<ul style="list-style-type: none"> ▪ Training module of # 22/23 ▪ Review and Approval of training ▪ Issuance of letter to D-PIU 	PD, PMU PD, PMU

Major Activities	Specific Activities	Responsibility
Awareness for WMCA Members of Additional Development and Flagship Development Sub-Project	<ul style="list-style-type: none"> ▪ Issuance of letter to U-PIU ▪ Allocating budget to D-PIU 	D-PIU/District Executive Engineer PD, PMU
33. Formation of different Sub-committees:	<ul style="list-style-type: none"> ▪ Assist FMC/WMCA for ensuring one-third women members during formation of various subcommittees. ▪ Agriculture, Fishery, Micro-Credit, Agri-Business for flagship development SP etc.) ▪ Assist FMC/WMCA in formation of Gender Development Subcommittee (GDSC). ▪ Assist GDSC in preparation of Gender Development Plan through gender development planning workshop. 	PIU/Sociologist, GF, CO PIU/Sociologist, GF, CO, DWA, IDS, GDS. DWA, GDS, IDS, Sociologist at D-PIU and GF, CO at U-PIU
34. Preparation of Development Plans	<ul style="list-style-type: none"> ▪ Assist WMCA MC and SC in preparation of following development plans ensuring participation of potential female members/GDSC: <ul style="list-style-type: none"> ➢ O&M plan ➢ Agricultural development plan ➢ Fishery development plan ➢ Gender development plan ➢ Micro-Credit development plan ➢ Business plan (for Flagship Development) 	PIU/Sociologist, GF, CO, DWA/ concern line departments, GDS, IDS/SIDS
35. Procurement of Equipment (For Flagship Development):	<ul style="list-style-type: none"> ▪ Issuance letter of instruction for need assessment along with need assessment form. ▪ Need assessment for identifying the necessary equipment for women. ▪ Procurement of Equipment taking into account appropriate/identified equipment for women. 	PD, PMU to D-PIU D/U-PIU, WMCA MC PD, PMU to D-PIU
36. Training (Income generating/ skill development)	<ul style="list-style-type: none"> ▪ Preparation of training need assessment form ▪ Issuance letter of instruction for need assessment along with need assessment form to D-PIU, ▪ Issuance letter of instruction by XEN to U-PIU, WMCA in accordance with instruction from PD ▪ Issuance letter of instruction by to D-PIU and other concern for selection of participants ▪ Preparation/modification of module on IGA i.e; <ul style="list-style-type: none"> ➢ Livestock, poultry & Duck Farming, Fish cultivation and Homestead Gardening, Vaccination for livestock, (according the experiences of JICA-1) ➢ Bee Keeping and Honey Cultivation ➢ Mushroom Cultivation ➢ Tailoring/ Embroidery/Block & Batik ➢ Vermin Culture/ Preparing Organic & Compost Fertilizer ➢ Mobile & Motor Cycle Repairing ➢ Food Processing /Snacks Corner Management ➢ Pearl Cultivation ➢ Beauty Parlor Work ➢ Basic Computer ➢ Others as per need assessment 	PMU, PC PD, PMU PD, PMU, PIU PD, PMU PMU, PC/SAPI Team Concern line department/ NGO/other organization Concern line department/ NGO/other organization DWA/ Suitable NGO RDA/BARD/RDRS/ Other suitable NGOs DWA/ Suitable NGO DWA/ Suitable NGO BFRI/ other suitable Organization DWA/ Suitable NGO DWA/ Suitable NGO/LGED

Major Activities	Specific Activities	Responsibility
	<ul style="list-style-type: none"> ▪ Review and Approval ▪ Issuance letter of instruction to PIU and other concern, ▪ Allocating necessary budget for implementation of the trainings to D-PIU/concern line department/ NGO/organization (depends type of training), ▪ Organize and preparation training ▪ Execution of training 	<p>Concern line department/ DWA/ Suitable NGO (will depend on type of training need) PD, PMU/ by Concern line department/ NGO/ organization (depends type of training) PD, PMO PD, PMU</p> <p>PD, PMU</p> <p>PMU/ PIU/Concern line department/ NGO/organization (depends type of training)</p> <p>PMU, PC/ Concern line department/ NGO/organization (depends type of training)</p>
36.1 Dissemination Training on income generating activities for the male-female beneficiaries:	<ul style="list-style-type: none"> ▪ Issuance letter of instruction to D-PIU and other concern ▪ Issuance letter of instruction to U-PIU, WMCA and other concern ▪ Allocating budget to D-PIU/U-PIU/WMCA 	<p>PD, PMO</p> <p>District XEN</p> <p>PD-PMU</p>
36.2 Reflection of IGA training	<ul style="list-style-type: none"> ▪ Feedback Assessment of training ▪ Follow up of IGA 	<p>PIU/GF, CO, WMCA MC, GDSC PIU/ GF, CO, WMCA MC, GDSC, Training Recipients</p>
37. Data collection	<ul style="list-style-type: none"> ▪ Preparation of gender disaggregated data collection form by ▪ Routine data collection ▪ Data compilation and synchronization (generate and updating data base on gender indicators: quantitative, qualitative) 	<p>PMU, PC, GDF, GFP-IWRMU/ project D-PIU, U-PIU/ GF, CO IWRMU, PMU, GFP- IWRMU/ project, PC, MIS</p>
38. Preparation of Report	<ul style="list-style-type: none"> ▪ Review gender disaggregated and gender sensitive data/information ▪ Prepare various reports on them ▪ Review/recommendations ▪ Approval of Reports 	<p>PMU, PC, Sociologist-gender</p> <p>PMU, PC, Sociologist-gender PMU, IWRMU, GDF, GFP, PC, Donor agency PD, PMU</p>

Table 10: Implementation Procedures of gender activities for WMCA- MC/ Members/ Family layer

Major Activities	Specific Activities	Responsibility
1. Formation of Organizing Committee (OC):	<ul style="list-style-type: none"> ▪ Discuss gender activities/scope of women participation in JICA-2 in General Meeting to potential beneficiaries called for formation of OC ▪ Formation of OC ensuring minimum one-third (33%) female members with one female in vital position, i.e.; Chairperson or secretary 	<p>UP, D-PIU, U-PIU</p> <p>Potential beneficiaries, UP, PIU</p>
2. Awareness campaign	<ul style="list-style-type: none"> ▪ Conducting of awareness campaign including gender activities/scope of women participation in JICA-2 	<p>Organizing Committee (OC) with assistance of UP, General Facilitator (GF), Sociologist/PIU</p>
3. Formation/Election of First Management Committee (FMC):	<ul style="list-style-type: none"> ▪ Discuss gender activities/scope of women participation in JICA-2 in General Meeting 	<p>OC and PIU</p>

Major Activities	Specific Activities	Responsibility
	<p>to potential beneficiaries called for election of FMC</p> <ul style="list-style-type: none"> ▪ Election of FMC MC ensuring minimum one-third (33%) female members with one female in vital position, i.e.; Chairperson or secretary ▪ Approval of FMC 	<p>Election committee/ potential beneficiaries</p> <p>DOC/ potential beneficiaries</p>
4. Enrollment of Membership	<ul style="list-style-type: none"> ▪ Prepare separate list for male-female headed households during preparation of beneficiary list ▪ Enrollment of potential beneficiaries to WMCA members with a focus on at least one- third women members 	<p>Task force/FMC, with assistance of PIU/G F,</p> <p>Task force/ FMC</p>
5. Preparation of By-laws	<ul style="list-style-type: none"> ▪ Include following issues during preparation of draft by-laws: <ul style="list-style-type: none"> ➢ With the provision of one- third women members at all committees and membership level from all social categories, ➢ Provision to Increase up to 50% gradually in MC of WMCA ➢ Provision for important/key position for women as Chairperson or Secretary ▪ Review and approval/Registration of by-laws ensuring the provisions regarding the percentage and key position of women in various areas ▪ Dissemination of by-laws regarding gender issues among the stakeholders including beneficiaries properly ▪ Implementation of by-laws 	<p>FMC with assistance with PIU, DOC</p> <p>DOC</p> <p>FMC/WMCA/PIU</p> <p>MC, FMC/WMCA, Sub-committees, PIU</p>
6. Detail Feasibility Study	<ul style="list-style-type: none"> ▪ Assist FS team for arranging separate meetings with male and female ▪ Assist in collection of gender disaggregated data ▪ Assist in preparation gender sensitive mitigation plan 	<p>OC, UP, Women beneficiaries, FS team, GF, CO, Sociologist</p>
7. Preparation of Detail Design	<ul style="list-style-type: none"> ▪ Assist DD firm for arranging meeting with potential women to identify women friendly facilities ▪ Participate in planning meeting to identify special issues needed in related areas for the women and children ▪ Propose mitigation measures on different impacts (negatively affected) for men and women. 	
8. LCS Work	<ul style="list-style-type: none"> ▪ Formation of LCS ensuring-33% women member including women in key position ie; chairperson or secretary ▪ Formation of separate women LCS in suitable areas ▪ Approval of LCS ▪ Organize LCS training ▪ Formation of subcommittee for supervision and monitoring of LCS work 	<p>WMCA, GDSC, PIU</p> <p>WMCA, GDS, PIU</p> <p>PD, PMU</p> <p>WMCA, GF, PIU</p> <p>PIU, MC, FMC/WMCA</p>
9. Formation of different Sub-committees	<ul style="list-style-type: none"> ▪ Ensure one- third women members during formation of various subcommittee subcommittees (O&M, Agriculture, 	<p>FMC/WMCA</p>

Major Activities	Specific Activities	Responsibility
	<p>Fishery, Micro-Credit, Agri-Business for flagship development SP etc.)</p> <ul style="list-style-type: none"> ▪ Formation Gender Development Subcommittee (GDSC) by FMC/WMCA ▪ Preparation of Gender Development Plan considering following issues: <ul style="list-style-type: none"> ➢ Negotiate to increase women participation in all possible area/activities/training under the project and WMCA, ➢ Selection of suitable women participants for trainings under the project, ➢ Assist in collection of vulnerable women for LCS formation, ➢ Conducting of training etc. ▪ Review and Approval of Gender Development Plan ▪ Training need assessment to identify appropriate income generating activities ▪ Sending proposal on identified training 	<p>GDSC with assistance of DWA, local consultant (institutional development expert), GDSC at Divisional office, Sociologist at D-PIU and GF at U-PIU</p> <p>MC, FMC/WMCA</p> <p>GDSC with assistance of Sociologist, PIU GDSC to PIU and PMU via WMCA</p>
10. Preparation of Development Plans	<ul style="list-style-type: none"> ▪ Preparation of following development plans ensuring participation of potential female members/GDSC: <ul style="list-style-type: none"> ➢ O&M plan ➢ Agricultural development plan ➢ Fishery development plan ➢ Gender development plan ➢ Micro-Credit development plan ➢ Business plan (for Flagship Development). ▪ Preparation of Gender Development Plan ▪ Review and Approval of Plan 	<p>WMCA MC and concern SC with assistance of DWA/concern department, local consultant (institutional development expert), GDS at Divisional office, Sociologist at D-PIU and GF</p> <p>GDSC with assistance of DWA, local consultant (institutional development expert), GDS at Divisional office, Sociologist at D-PIU and GF WMCA MC</p>
11. Procurement of Equipment (For Flagship Development)	<ul style="list-style-type: none"> ▪ Assist PIU in need assessment for identifying the necessary equipment for women ▪ Monitoring of equipment procurement as identified appropriate equipment for women 	WMCA MC
12. Orientation and Training (compulsory) 12.1 Gender training for the WMCA members	<ul style="list-style-type: none"> ▪ Select potential male-female (50:50) members and issuance invitation letter to them upon receiving instruction letter from PD,PMU to D-PIU/U-PIU ▪ Allocating necessary budget for implementation of the trainings to D-PIU/PIU/WMCA ▪ Organize training ▪ Conduct training 	<p>GDS with assistance of PIU/GF</p> <p>PD, PMU</p> <p>WMCA MC, GDSC PIU, Sociologist/DWA/ DOC/PC</p>
12.2 Gender Awareness Training for the Family Layer	<ul style="list-style-type: none"> ▪ Selection of potential family among the WMCA members and issuance invitation 	WMCA MC, GDSC with assistance of PIU/GF

Major Activities	Specific Activities	Responsibility
	<p>letter to them upon receiving instruction letter from PD,PMU to D-PIU/U-PIU</p> <ul style="list-style-type: none"> ▪ Allocating necessary budget by PD, PMU for implementation of the trainings to D-PIU/PIU/WMCA ▪ Organize training ▪ Conduct training 	<p>WMCA MC, GDSC WMCA MC/ GDSC/ general members (who received the training), PIU, Sociologist/DWA/ PC</p>
<p>12.3 Dissemination Training on Gender Awareness for SP Beneficiaries</p>	<ul style="list-style-type: none"> ▪ Preparation of Module/materials ▪ Review and Approval ▪ Selection of male-female (50:50) participants among the beneficiaries (yet not the enrolled as member of WMCA) and issuance invitation letter to them ▪ Allocating necessary budget for implementation of the trainings to D-PIU/PIU/WMCA ▪ Organize training ▪ Conduct training 	<p>GDSC/WMCA MC with assistance of PIU/GF, Sociologist PD, PMU/ XEN, PIU GDSC/WMCA MC, upon receiving instruction letter from U-PIU</p> <p>PD, PMU</p> <p>WMCA MC/ GDSC, general members GDSC/WMCA MC, general members (who received the training),GF Sociologist/DWA</p>
<p>12.4 Training on Women Human Rights, Legal Aspects and Woman Empowerment for Field Staff, WMCA MC and selected members</p>	<ul style="list-style-type: none"> ▪ Select potential male-female (50:50) upon receiving instruction letter from PD, PMU to D-PIU/U-PIU ▪ Allocating necessary budget to D-PIU ▪ Organize training ▪ Conduct training 	<p>GDSC/WMCA MC with assistance of PIU/GF</p> <p>PD, PMU MC, GDSC PIU, Sociologist/DWA/ DOC/PC</p>
<p>12.5 Dissemination Training on Women Human Rights, Legal Aspects and Woman Empowerment for SP Beneficiaries</p>	<ul style="list-style-type: none"> ▪ Preparation of training module/ materials ▪ Review and Approval ▪ Select male-female (50:50) participants among the beneficiaries (yet not the member of WMCA) and issuance invitation letter to them upon receiving instruction letter from PD, PMU to D-PIU/U-PIU ▪ Allocating necessary budget for implementation of the trainings to D-PIU/PIU/WMCA ▪ Organize training ▪ Conduct training 	<p>GDSC/ MC with assistance of PIU/GF, Sociologist, Trained Staff PD, PMU/D-PIU GDSC/WMCA MC</p> <p>PD, PMU</p> <p>GDS/MC/ general members GDS/WMCA MC, general members (who received the training), PIU, Trained Staff/ DWA</p>
<p>12.6 Training on Woman Empowerment, Leadership and Role in Decision Making in WMCA's for WMCA MC and selected Members</p>	<ul style="list-style-type: none"> ▪ Selection of male-female (50:50) participants among the WMCA members upon receiving instruction letter from PD, PMU to D-PIU/U-PIU ▪ Allocating necessary budget for implementation of the trainings to D-PIU/PIU/WMCA ▪ Organize training ▪ Conduct training 	<p>GDSC/ WMCA MC</p> <p>PD, PMU</p> <p>GDS/WMCA MC PIU, Trained Staff, DWA</p>
<p>12.7 Dissemination Training on Woman Empowerment, Leadership and Role in</p>	<ul style="list-style-type: none"> ▪ Selection of male-female (50:50) participants among the beneficiaries (yet 	<p>GDSC/ WMCA MC</p>

Major Activities	Specific Activities	Responsibility
Decision Making in WMCA's for SP Beneficiaries	<ul style="list-style-type: none"> not the member of WMCA) and issuance invitation letter to them ▪ Allocating necessary budget for implementation of the trainings to D-PIU/PIU/WMCA ▪ Organize training ▪ Conduct training 	<p>PD, PMU</p> <p>GDS/MC/ general members GDS/WMCA MC, general members (who received the training), PIU, Trained Staff/ DWA</p>
12.8 Refresher Training on Gender Awareness for WMCA Members of Additional Development and Flagship Development Sub-Project.	<ul style="list-style-type: none"> ▪ Select potential male-female (50:50) members and issuance invitation letter to them upon receiving instruction letter from PD,PMU to D-PIU/U-PIU ▪ Allocating necessary budget for implementation of the trainings to D-PIU/PIU/WMCA ▪ Organize training ▪ Conduct training 	<p>WMCA MC/GDSC with assistance of PIU/GF</p> <p>PD, PMU</p> <p>WMCA MC/GDSC PIU, Sociologist/DWA/ DOC/PC</p>
13. Training (Income generating activities/ skill development)	<ul style="list-style-type: none"> ▪ GDSC are meant about training need assessment forms through discussion ▪ Carry out training need assessment by GDS using the form received from PMU/PIU ▪ Sending proposal on identified training to PIU and PMU through WMCA MC ▪ Selection of appropriate participants by GDSC & sending it to PIU and PMU through WMCA guided by sociologist, CO upon receiving instruction letter from U-PIU/WMCA ▪ Sending the list of appropriate participants 	<p>sociologist, GF/PIU</p> <p>GDS using the form received from PMU/PIU guided by sociologist, GF/PIU GDSC/MC</p> <p>GDSC guided by sociologist, CO</p> <p>GDSC to PIU and PMU through WMCA</p>
13.1 Dissemination Training on income generating activities for the male-female beneficiaries	<ul style="list-style-type: none"> ▪ Organize and preparation training upon receiving instruction letter from U-PIU/WMCA MC ▪ conduct training 	<p>GDSC/WMCA- MC</p> <p>Training recipients/GDS in assistance of PIU, DWA</p>
13.2 Reflection of IGA training	<ul style="list-style-type: none"> ▪ Feedback assessment of training ▪ Income Generating Activities started ▪ Regular follow up 	<p>GDSC, WMCA, with assistance of Sociologist, PIU, PMU, PC</p> <p>Training recipients GDSC, MC, PIU, PMU and PC</p>
14. Data collection	<ul style="list-style-type: none"> ▪ Collection of necessary data information as per their plan and requested by PIU, PMU, PC and others ▪ Providing necessary data/information as requested by PIU, PMU,PC and others 	<p>All committees/general members</p> <p>All committees/general members</p>
15. Preparation of Report	<ul style="list-style-type: none"> ▪ Preparation of report according the plan ▪ Review and Approval of report ▪ Sending report to concern as per plan 	<p>All committees/ members WMCA MC GDSC/WMCA- MC, Other Subcommittees</p>

10. MONITORING AND EVALUATION OF PROJECT ACTIVITIES IN PERCEPTION OF GENDER

10.1 Consideration for Monitoring:

- 1) Ensure the participation of women as the head of the committee along with the male in different committees of the project;

- 2) Ensure the participation of male and female in the meetings and providing importance to the opinion of all;
- 3) Receiving opinion of male and female in sub-project initiation and implementation and make the both involved with planning;
- 4) Ensuring equal services for male and female from the services as the outcome of the project;
- 5) At present male are getting more benefit than female in conducting local judgments. But it is necessary to include women in operation of judgments along with men, so that, both the male and female can participate in operation of local judgments.
- 6) Ensure the equal service and benefit from the project for both male and female;
- 7) Preservation of the information regarding achievement of the activities operated with the objective of equality among the male and female, and to ensure the distribution of that information to all from there;
- 8) Review and monitoring progress or proper implementation of gender activities in regular basis.

10.2 Strategies of Evaluation:

- 1) Positive outlook in establishing equality;
- 2) Open discussion on gender among the male and female beneficiaries;
- 3) Clear concept and commitment on gender;
- 4) Practice among the workforce of the project to change the existing beliefs, rituals, behavior, attitude etc.
- 5) Communication with other organizations working on gender issue;
- 6) Importance of the opinion of the women in decision making;
- 7) The employees of the organization think that the organization is gender sensitive;
- 8) The employees can freely discuss and communicate with the superior officers of the organization;
- 9) Equal participation of male and female both in quality and quantity;
- 10) Ensure the active participation of the women in all committees;
- 11) Quantitative equality in employment, especially in the LCS;
- 12) Incorporating the contemporary issues like- resisting violence against women, maternity health service, leadership, etc. in the programs;
- 13) There is a working environment equal to all male and female, religion, and other ethnic groups.
- 14) Presentation of reports based on the information arranged with gender divergence;
- 15) Proper application of gender based allotted budget;
- 16) The goals and objectives of the project have been prepared with the consideration of existing discrimination among male and female in the society.

10.3 Gender in Project Monitoring and Evaluation (M&E)

Effective M&E mechanisms will have to be established for the entire project cycle. A participatory and gender-sensitive M&E approach should be adopted so that the women and men of the target

group can fully express their opinions and participate in the process. It is important to address gender issues by collecting and reporting data disaggregated by sex in the project cycle. There are three main levels of results in M&E: outputs, outcomes and impact. The first and second levels relate to project implementation and correspond to different spheres of responsibility and influence.

- The first level focuses on project outputs and allows for measurement of project efficiency (sphere of direct responsibility, what a project has to guarantee).
- The second level measures the results obtained against project objectives. The outcomes provide information about the effectiveness, relevance and sustainability of a project (its domain of influence, partnerships, and expectations).

The four key factors-**Efficiency, Effectiveness, Relevance and Sustainability** should take full account of gender issues during the M&E process to ensure a balanced and successful project.

10.3.1 Efficiency

Efficiency is a measure of how economically resources/inputs (financial, human, time, material resources required for project implementation, etc.) are converted into outputs. At this level, the focus is on the project's deliverables, i.e. goods or services, in numbers and other quantitative measurements, generated by the activities.

To integrate gender concerns at this level, check if:

- The selection criteria for sub-project include gender criteria, and if sub-projects are gender-sensitive and gender-competent or are willing to learn.
- Gender training and specific action to mainstream gender (e.g. in institutions, procedures) have been planned where necessary.
- The gender approach has been integrated into all activities and all tools used.
- Operational objectives address women's and men's practical and strategic needs.
- Activities are planned and resources are used to respond equally to women's and men's expressed needs.
- Expected results focus on the roles, resources and needs prioritized by beneficiary women and men.
- Women and men have equal access to project resources and benefit equally from the project.
- The workload related to the project activities is shared equally by women and men. At this level, the project should support women not only in reaching the expected results in terms of practical needs (as it is often the case), but also in benefiting from it to meet their strategic needs.

10.3.2 Effectiveness

Effectiveness is defined as the extent to which the project's objectives were achieved. At this level, how successful the outputs have been in producing the desired outcome is assessed by reviewing immediate or mid-term observable effects and results. Generally, several outputs are necessary to attain an outcome. The quality of partnerships, and the contribution and commitment of the

main stakeholders are crucial, in particular, to promoting gender in projects. Key points to be checked are if:

- Gender responsive and/or gender-competent staff are involved in planning activities or at other key stages of the project.
- All stakeholders agree with the set objectives and participate in their formulation.
- Cooperation and collaboration on gender issues lead to changes in practices, behaviour and power relations between women and men in the partner organizations supported by the project.
- Mutual gender expectations are met.
- Project objectives address/reflect the needs of both men and women; specific objectives that address women's and men's needs separately may be required.

10.3.3 Relevance

This is the extent to which the goal or development objective(s) of the project is consistent with women's and men's practical/strategic needs, country needs and global priorities. At this level, comprehensive information about project impact is necessary. This should cover the positive and negative, intended and unintended, long-term changes/effects for women and men. To integrate gender at this level of analysis, check if:

- Project results have been gender-disaggregated to allow relevance to be assessed.
- The results are relevant to the beneficiaries and readily comprehensible to them.
- All identified women's and men's needs/problems are reflected in the development objective, together with their strengths and potential.
- The sub-projects are coherent with the countries and project's gender policies and priorities.
- The project promotes greater equality between women and men, and girls and boys, and does not reinforce or reproduce inequalities. Opportunities and life chances become/remain equal.
- The project has no negative effects on women and men.
- Whenever possible, the project is involved in policy dialogue concerning gender issues or supports local organizations working in this field, in order to create favourable conditions and change towards gender equality.

10.3.4 Sustainability

The effectiveness, relevance and sustainability of a project are strongly linked. Experience has shown that integrating gender and reducing inequality between women and men contribute to sustainable development. It is important to raise awareness of this link among the relevant project focal points. Here too, project stakeholders should be familiar with basic approaches to sustainability and how to integrate gender into this area. The discussion is especially important concerning the effectiveness of a programme/project, within the sphere of influence of the programme/project and the partner institutions on a medium-term time horizon. Project results and benefits should guarantee sustainable gender impact, i.e. that impact continues to be felt after the conclusion of the programme/project.

Check if:

- Women's and men's differing circumstances have been taken into account.
- The project focuses on the main interests of women and men (ownership).
- Members of the target group – both women and men – benefit equally from the project and have greater access to resources (income, education, health services).
- The project considers equitable benefits for women and men as a key criterion.
- The effects of the project are relevant and easily comprehensible to women and men.
- The ecological effects on women and men have been considered, as well as the ecological context (e.g. desertification context).
- Partner organizations are learning-oriented and are willing to bring gender issues into the mainstream (gender institutionalization). Organizations follow gender-balanced practices.

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Annex 1. Memorandum of Understanding between Department of Women Affairs and LGED

(TRANSLATED FROM BANGLA)

Background:

Local Government Engineering Department (LGED) in addition to building rural infrastructure is also involved in the implementation of a number of development projects. LGED during implementation of the projects gives importance to participation of local stakeholders from planning to implementation activities including operation and maintenance of the projects. LGED implements different sector projects such as rural development, urban development and water resources development infrastructures. In every sector LGED lays emphasis on improving socio-economic condition of beneficiaries in addition to construction of infrastructures.

LGED gives emphasis in involving women in all spheres of activities. In order to discriminate the relation between women and men LGED has taken active steps. In the meantime, LGED has created a new forum with the participation of senior men and women officials in the name of "LGED Gender Development Forum". From forum a "Policy Guideline" has been prepared. As an output recently "LGED Gender Equity Strategy" and "Gender work programme 2002-2007" has been formulated. The work programme has been prepared separately for three sectors such as "Rural Development", "Urban Development: and "Water Resources Development Sector". Based on these sub-sector projects will prepare their "Gender Development Plan" and will take active interest in its implementation.

LGED gives proper consideration to the facts that women worker can get adequate wages for their works. Adequate steps are taken to increase the facilities of women workers. As example separate toilets facilities, separate place for prayer and vehicles for attending offices are provided. LGED is interested to create a woman friendly atmosphere in the office. It is for this reason LGED is interested to sign MOU with Department of Women Affairs. Second Small Scale Water Resources Development Sector Project is especially looking for involving participation of women in every phase of activities. Water Management Co-operative Association (WMCA) is formed in grass root level with the participation of beneficiaries involving both men and women. This committee keeps active role starting from planning to implementation and simultaneously becomes ready to take the responsibility of operation and maintenance.

A total of 280 subprojects have been implemented in the first phase of Small Scale Water Resources Development Sector Project, where the issue/matter of women development has got due importance. Strategic issues, alongside the production oriented activities, such as, ensuring women participation in the decision-making process and 30% membership in the WMCA First Managing Committee has been mandatorily reserved for women members. Furthermore, provision for female members in the Operation and Maintenance Committee has been made. The women members have been provided with numbers of skill development trainings on different project related issues and more trainings have been further planned. In the training programs, the district and upazila level officers of Department of Women Affairs have taken part as resource persons in some places. But many of the DWA & LGED officers have considered it to be a hindrance to act as resource persons as there was no understanding between the two departments although the result of this venture was very encouraging. Considering such aspects necessity of signing a "Memorandum of Understanding" (MOU) between the two departments have been felt to ensure active and effective women participation in the 300 subprojects of Second Small Scale Water Development Sector Project.

Memorandum of Understanding

This Memorandum of Understanding entered into this day of **22 July 2003** by and between the two understated departments:

The Department of Women Affairs (hereinafter referred to as DWA), a line agency/department of the Government of Bangladesh and represented by Mr. Dulal Abdul Hafiz.

And

The Local Government Engineering Department (hereinafter referred to as LGED), a department of the Government of Bangladesh, that is engaged in Rural and Urban Infrastructure Development, Flood Management, Drainage Improvement and Irrigation facilities development through Water Resource Development and represented in this document by its Chief Engineer. Md. Shahidul Hasan.

WITNESSETH THAT

Whereas

The DWA is responsible for planning, formulation of strategy, implementation of different projects for women development with a view to poverty reduction and employment generation through adoption of different strategy.

LGED is responsible for promoting communication development activity through improving rural road communication, enhancing rural infrastructure development to improve marketing facilities through developing growth centers and rural markets and attaining sustainable agriculture and fisheries development and generating employment opportunity through water resource development and management.

Therefore, DWA and LGED, having a common interest in the development arena, are jointly interested in the development of women, half of the population of the country. Both the organization shall co-operate each other organizing training and skill development activities during implementation of projects and subprojects of LGED and DWA.

Now therefore, in consideration of the aforesaid premises the DWA and LGED mutually agreed to cooperate the following areas:

1. Scope of Operation

The program of technical collaboration between the DWA and LGED will include the following:

- a. Exchange of information and publications
- b. Organize training programs relating to women development.
- c. Provide technical advice and assistance as required by LGED which fall within the objectives and scope of the project.

2. Term

The term of this understanding shall be valid until it is not declared void by either of the party. Either party may terminate this Memorandum of Understanding by written notice to the other party. This Memorandum of Understanding, however, will remain effective for 180 days from the date of issue of such notice.

3. Responsibility of LGED

- a. LGED and its employees, having complied with pertinent rules and regulations, shall extend necessary cooperation to DWA.

- b. LGED Shall review progress relating to women development training program, workshops and extension programs, planning and programs and exchange information that relates to the matter.
- c. LGED shall make necessary arrangement for women development training programs in the project and subproject area during project implementation.
- d. LGED shall provide necessary information relating to project and subproject to DWA.
- e. LGED, through close and effective coordination with DWA, shall take necessary steps to establish and institutionalize activities relating to women development.

4. Responsibility of DWA

- a. DWA, through its district and upazila level staffs, where its office exists, shall carryout necessary survey work and need assessment of the project and subproject beneficiaries with a view to generate employment for women and women development of LGED's project and subproject area, shall provide necessary assistance to prepare development plan and in implementation for women development and shall give the project and subproject beneficiaries priority in the programs of its own.
- b. DWA shall provide necessary technical assistance in the income generating program management and activities based on the availability of raw materials in LGED's project and subproject area for women development.
- c. The district and upazila level staffs of DWA shall provide WMCA female members, particularly destitute women, with training and provide assistance and advice as resource person in the training programs arranged by the project.
- d. The DWA staffs shall assist in awareness raising of the local people for women development in the project and subproject area.
- e. The DWA staffs shall provide training and advice to the LGED, project and subproject or concerned staffs in the district and upazila level, on the implementation of gender related strategy papers such as: National Gender Development Policy, National Action Plan on Gender Development and LGED Gender Equality Strategy etc.
- f. The upazila level officers of DWA shall submit/discuss the activities/report relating to woman development in the Upazila Development Co-ordination Committee and forward the report to the DG, DWA and Chief Engineer, LGED.
- g. DWA, with assistance of the manpower engaged in the project and following the project implementation guidelines, shall provide the WMCA with necessary assistance to prepare women development plan and assist in its implementation in the field level as well as assist in selection of important subproject.

Now therefore, DWA and LGED are hereby agreed to affix their signature on the date first written to the 4 main copies and to send 1 copy each to their respective ministry.

SIGNATURE

SIGNATURE

Md. Dulal Abdul Hafiz
DIRECTOR GENERAL
DEPARTMENT OF WOMEN AFFAIRS

MD. SHAHIDUL HASAN
CHIEF ENGINEER
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

Annex 2. Terms of Reference for Women WMCA MC Members

The Responsibilities and Duties of Women Members of the WMCA Management Committee

1. Regular and active participation in all meetings of WMCA committees.
2. Active participation in the WMCA committee's annual/other development planning process.
3. Helping GDSC in preparing annual gender development plan.
4. Giving an opinion when the association is making decisions: for example, selecting the weekly or monthly contributions or shares required by the WMCA.
5. Helping to increase the number of women members: for example, motivate women/family of the area to join the association by informing them of the benefits can be found by the association.
6. Giving an opinion for selection of suitable women for providing microcredit and repayment procedures.
7. Increase consciousness of WMCA members through general meetings and any other meetings. For example, increase their own capital by contributing regular shares and savings, and begin to use the WMCA capital for income-generating activities.
8. Take initiative to give opportunities to of appropriate women members at the times selection of participants/family for gender awareness, women human rights and legal suspects, agriculture, fisheries, IGA, LCS and other trainings under the project.
9. Assist in selection of male-female (50:50) participants from WMCA members for trainings under the project.
10. Motivate other members of the committee to give importance to women's involvement.
11. Participate in any and all operation and maintenance or women-/gender-related meetings, trainings, workshops, and so on, arranged by the WMCA or the Project.
12. Assist in collection of vulnerable women for LCS formation,
13. Assist in formation of separate female LCS in possible area,
14. Negotiate to increase women participation in all possible area/activities/training under the project and WMCA i.e.
 - to increase at least **one- third** women members in enrolment of membership,
 - for important/key position for women as Chairperson or Secretary in MC,
 - to increase up to 50% women gradually in MC,
 - to increase/include **one- third** women members at all sub committees,
 - to inclusion at least **one- third** women in LCS,
 - to inclusion of women as workers as much as possible in construction work,
 - to provide microcredit to at least **one-third** women and gradually increase up to 50% with special attention on poor and vulnerable women,
 - to ensure equal payment for equal work in LCS and construction work
15. Follow up, monitor, review and report to concerned officials and in MC meeting about the construction of women-friendly facilities or essential support facilities in LCS, Construction, WMCA office and other possible areas.
16. Assist in collection of O&M fees from women farmers and other.
17. Assist GDSC in training needs assessment to identify appropriate income generating activities.
18. Conduct training for the members and family layer on gender awareness, women human rights and legal suspects, IGA etc.
19. Assist GDSC in preparation of report on progress of gender activities, ratio of women participation in activities/training under the project and WMCA,
20. Other activities that will be given by the MC and project.

2.3 Summary of Beneficiary House Hold/Occupation by Sex:

Number of Beneficiary House Hold:			
Male Headed:	Female Headed:	Total:	% of Women
Number of Male & Female Beneficiaries:			
Male:	Female:	Total:	% of Women
Number of Farmers Family:			
Number of Farmers:			
Male:	Female:	Total:	% of Women
Number of Fish Farming Family:			
Number of Fisherman/involved with Fish Farming			
Male:	Female:	Total:	% of Women
Number of vulnerable people			
Male:	Female:	Total:	% of Women

Signed by _____ **Community Organizer** _____ **General Facilitator** _____ **WMCA Chairperson** _____ **Chairperson of GDSC**

Annex 4. ANNUAL GENDER AND DEVELOPMENT PLAN FROM OF WMCA

Sub-Project Basic Information:

Location	District:	Upazila:	Union:
Subproject Number:	Name and Type:		Benefit area (ha/acre):

Beneficiary Information:

Number of Beneficiary House Hold:			
Male Headed:	Female Headed:	Total:	% of Women
Number of Male & Female Beneficiaries:			
Male:	Female:	Total:	% of Women
Number of Farmers Family:			
Number of Farmers:			
Male:	Female:	Total:	% of Women
Number of Fish Farming Family:			
Number of Fisherman/involved with Fish Farming			
Male:	Female:	Total:	% of Women
Number of vulnerable people			
Male:	Female:	Total:	% of Women

Activities:

1. Workshop and committee formation:

Name and participants of workshop

No	Name:	Male:	Female:	Total:
1				
2				
3				
4				
5				

Committee and members:

No	Name:	Male:	Female:	Total:
1				
2				
3				
4				
5				

2. Awareness campaign:

No	Name	Male	Female	Total
1				
2				
3				
4				
5				

3. Training (compulsory) and Participants

No	Title	Male	Female	Total	Feedback
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					

4. Training (Income generating/ skill development) and Participants:

No	Name of Training	Male	Female	Total	Feedback
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

5. Other Training (agriculture, fisheries, LCS etc.) and participants:

No	Name of Training	Male	Female	Total	Feedback
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

6. LCS formation and members

No	Name of LCS	Male	Female	Total	Percentage	
					Male	Female
1						
2						
3						
4						
5						

7. WMCA Management Committee (MC) Member (target to increase up to 50%)

Male	Female	Total	Percentage (%)	
			Present	Target

8. Position in Management Committee

No	Name of Position	Name of Person	Male	Female
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

9. Enrolment of Membership (target to increase at least one- third)

No	Name of committee	Male	Female	Total	Percentage	
					Male	Female
1						
2						
3						
4						
5						

10. Monitoring the formation of different Sub-committees (target at least one- third (33%) in each)

No	Name of committee	Male	Female	Total	Percentage	
					Male	Female
1.						
2.						
3.						
4.						
5.						

11. Microcredit Distribution:

No	Particulars	Male	Female	Total	Percentage	
					Male	Female
1.	Number of borrower					
2.	Rate of distribution (Taka)					
3.	Activities (using the micro credit):					
3.1	By Male:					
3.2	By Female:					

12. Follow up & monitor of construction of women-friendly facilities:

No	Name of work/structure, LCS etc.	Name & No of women-friendly facilities to be provided	Name of women-friendly facilities provided
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

13. Meetings and participants

No	Name of meeting	Male	Female	Total
1				
2				

No	Name of meeting	Male	Female	Total
3				
4				
5				

14. Other tasks assigned by the WMCA or Project

No	Tasks	Progress	Remarks
1.			
2.			
3.			
4.			

15. Evaluation

Tasks	Progress	Remarks

16. Comments and recommendations on gender and development sub-committee

Position	Comments	Recommendations
Upazila Women welfare officer		
General Facilitator		
WMCA Chairperson		

Signed by Upazila Women Affairs officer General Facilitator WMCA Chairperson Chairperson of GDSC

Annex 5. Conditions of Selection or Ranking of Interested Members for IGA Training:

1. The person interested in training should be a regular member of the WMCA,
2. Be arbitrated as a regular and updated savings provider member,
3. Must be between 18 to 45 years of age,
4. Educational qualification should be in such a way that can be read and write smoothly and can be recorded of necessary topic/aspect of the training,
5. Person/member need to be engaged with the subject / work (though in small range) that is interested in training,
6. Required fund to be arranged (by herself or with the assistance of WMCA) to operate the income-generating activities after training,
7. After training, those activities will continue according to the knowledge of the training,
8. The concerned authorities, management committees and the Gender Development sub-committee will conduct regular supervision of the activities carried out by the member,
9. Knowledge of training to be promoted to encourage and help the neighbors, members of the WMCA and others, along with financial and other improvements of own.
10. To be act as a trainer in the training arranged for the members of the WMCA, their family and beneficiary members.

Annex 6. Income Generating Activities (IGA) Training Need Assessment Form (English)

Objectives:

- To know the current status of IGA that is being saturated by the women members of WMCA/area,
- Find out any other way of income generating activity that is suitable for them.
- Sort out future planning outline for skills development training,

Name & Type of Sub Project:	Upazila :	District:	Number of Member		
			Male	Female	Total

SI	Name & No. of Member/ Father/Husband Name	Village	Age	Level of Education	What kind of work is currently doing? (Detail on activities)	What else scope to do in the area?	Whether received any training on that's she working?	If any, Name of training &Organizatio n	Is there any need of training? What kind?	Have the necessary funds? Source?	Have the scope of marketing? Where?	Remarks
1	2	3	4	5	6	7	8	9	10	11		12

Signed by: _____ Sociologist

_____ General
Facilitator

_____ Community
Organizer

_____ WMCA
Chairperson

_____ Chairperson of
GDSC

Annex 8. Training on Gender and Development for JICA-2

Number	Participants	Type of Training	Name of Training Course	No. of Training course	No. of total Participants	Duration (day)	Venue	Possible Trainer/ Resource Person/ Organization
Overall Management								
1.	PMU and District XEN, LGED/PC	Orientation	Concept on Gender and why gender matters in water management	2*30	60	1	LGED HQ/ Region/RTC	PMU, PC, GDF, DWA, Specialized NGO
2.	PMU, PIU, LGED/PC	Orientation	Training or workshop on Gender Action Plan (GAP) 2017-2021	5*30	150	1	LGED HQ/ Region/RTC	PMU, PC
3.	UE, AE(Water), SAE (Water), Sociologist, Facilitator	TOT	TOT on Gender Concept and Role of Gender in Water Management for Field Staff	20*30	600	3	LGED HQ/Regional Selected Venue (GO/NGO)	PMU, PC, SE-region, PIU, or selected Suitable GO/NGO
4.	UE, AE(Water), SAE(Water), Sociologist, Facilitator	TOT	TOT on Women Human Rights, Legal Aspects and woman empowerment	8*30	240	3	LGED HQ/ RTC/ Dist/Other Suitable GOs/NGOs	Third party expert/ selected Suitable GO/NGO
5.	DWA, DoF, DoC, DAE, DLS, DYD (HQ Dist. and UZ)	Orientation	Orientation on JICA-2 Gender Activities in Water Management for Partner Agencies	48*35	1648	1	LGED HQ/ RTC/ Region/District	PMU, Sociologist-Gender, D-PIU, PC/GDS, Gender Development Forum, DWA
6.	FS Team	Awareness and Orientation on JICA-2 Gender Activities	Gender equity and orientation on gender activities in water management for FS Team	4*20	80	1	LGED HQ/ RTC/ Region/District	PMU, PC, DWA, GDF
7.	UP Chairman and Members (Chairman-1, Female Member-1 and Male Member-1)	Awareness and role of UP	Gender Awareness Training and Role of Gender in Water Management for UP Chairman and Members	30*30	900	1	LGED HQ/ RTC/ Region/District	D-PIU, U-PIU, PC, DWA, DCO/UCO
8.	CO, GF, WMCA MC Members	Awareness and role of MC	Gender Awareness Training and Role of Gender in Water Management for Field Staff and WMCA Management Committee	70*30	2100	1	SP Area/ WMCA Office	D-PIU, U-PIU, PC, DWA, DCO/UCO

Number	Participants	Type of Training	Name of Training Course	No. of Training course	No. of total Participants	Duration (day)	Venue	Possible Trainer/ Resource Person/ Organization
WMCA Members (male-female), Family and Beneficiaries Layer								
9.	Selected WMCA Members (Male and Female 50:50)	Awareness to increase active participation	Gender Awareness Training and Role of Gender in Water Management for WMCA Members (30 person*145 SP)	145*30	4350	1	SP Area/ WMCA Office	DWA, Sociologist/ PC/PMU/ PIU
10.	Selected Family of WMCA Members (Male and Female 50:50)	Awareness to increase active participation	Gender Awareness Training for the Family Layer of the WMCA Members	145*30	4350	1	SP Area/ WMCA Office	DWA, Sociologist/ PC/PMU/ PIU
11.	Selected SP Beneficiaries ((Male and Female 50:50)	Awareness	Gender Awareness Dissemination Training for SP Beneficiaries (100 person*145 SP)	484*30	14500	1	SP Area/ WMCA Office	DWA, Sociologist/ WMCA MC/ Potential Trained WMCA Member/GDSC
12.	WMCA MC, CO, GF and selected Members (Male and Female 50:50)	Awareness	Training on Women Human Rights and Legal Aspects for WMCA Members (30person*244 SP)	244*30	7320	1	SP Area/ WMCA Office	DWA, Sociologist/ PC/PMU/ PIU, DCO/UCO
13.	Selected SP Beneficiaries ((Male and Female 50:50)	Awareness	Dissemination Training on Human Rights of Women, Legal Aspects and Women's Empowerment for SP Beneficiaries (100 person*244 SP)	814*30	24400	1	SP Area/ WMCA Office	DWA, Sociologist/ WMCA MC/ Potential Trained WMCA Member/GDSC
14.	WMCA MC and selected Members (Male and Female 50:50)	Awareness and Empowerment of women	Training on Women's Leadership and Empowerment, and their Roles in Decision Making in WMCAs (30 person*244 SP)	244*30	7320	1	SP Area/ WMCA Office	DWA, Sociologist/ PC/PMU/ PIU
15.	Selected SP Beneficiaries ((Male and Female 50:50)	Awareness and Empowerment of women	Dissemination Training on Women's Leadership and Empowerment, and their Roles in Decision Making in WMCAs for SP Beneficiaries (100 person*244 SP)	814*30	24400	1	SP Area/ WMCA Office	DWA, NGO/ Sociologist/ WMCA MC/ Potential WMCA Member

Number	Participants	Type of Training	Name of Training Course	No. of Training course	No. of total Participants	Duration (day)	Venue	Possible Trainer/ Resource Person/ Organization
16.	WMCA Members (MC, Male and Female) of Additional Development and Flagship Development (Male and Female 50:50)	Follow Up/ Refresher	Refresher Training on Gender Awareness for WMCA Members of Rehabilitate Project (30 person*99 SP)	99*30 (90+9)	2970	1	SP Area/ WMCA Office	D-PIU, U-PIU, PC, DWA, DCO/UCO
17.	Selected Women Members of WMCA	Income Generating and Skill Development	Training on Income Generating Activities (Ideas and Suggestions) :					
i.	(Repetition of participant should be avoided)		Livestock, poultry & Duck Farming, Fish cultivation and Homestead Gardening, Vaccination for livestock	110*30	3300	3	RDA/NAPE/ BAPARD/CZI/ BFRI/FRI/ DYD (Dept of Youth Dev.)/RDRS/ Selected NGO	DWA, Dist./Up. Ag. Officer, Dist./Up. Livestock Officer, Dist./Up. Fisheries Officer, SAAO, Sociologist/ PC/PMU/ PIU/ Expert of concern venue
i.			Bee Keeping and Honey Cultivation				Concern GO/NGO	Concern line department/ NGO/other organization
ii.			Mushroom Cultivation				Concern GO/NGO	Concern line department/ NGO/other organization
iii.			Tailoring/ Embroidery/Block & Batik	45-50*15	675-100	25	SP Area/ WMCA Office	DWA/ Suitable NGO
iv.			Vermin Culture/ Preparing Organic & Compost Fertilizer.	5*30	150	3	RDA/BARD/RDRS/ Other suitable venue	RDA/BARD/RDR S/ Other suitable NGOs

Number	Participants	Type of Training	Name of Training Course	No. of Training course	No. of total Participants	Duration (day)	Venue	Possible Trainer/ Resource Person/ Organization
v.			Mobile & Motor Cycle Repairing	5*15	75	30	DWA/ Selected NGO	DWA Training centre/ Selected NGO/Other suitable venue
vi.			Food Processing /Snacks Corner Management	5*20	100	30	DWA/ Selected NGO	DWA Training centre/ Trainer of selected NGO/Other suitable venue
vii.			Pearl Cultivation	5*20	100	3	BFRI/ Other suitable Org.	Trainer of BFRI/ Other suitable Organization
viii.			Beauty Parlor Work	5*15	75	15	DWA/ Selected NGO	DWA Training centre/ Selected NGO/Other suitable venue
ix.			Basic Computer	5*15	75	15	LGED HQ/ RTC/ Region/District	DWA/ Suitable NGO/LGED
x.			Others as per need assessment				Depends on type of training	Depends on type of training
xi.			Dissemination of IGA for the male-female beneficiaries	145*30	4350	1	SP Area/ WMCA Office	Training Recipients/GDSC in assistance of PIU, DWA

References:

Guidelines on Gender in Employment Policies, Information Resource Book, ILO, 2009
Gender and Development: Concepts and Definitions, BRIDGE, Report-55, February 2000
Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)
The Beijing Platform for Action, 1995
Gender Equality and Women's Empowerment: JICA Strategies and Actions
JICA Guideline on Gender (2009)
The Constitution of the People's Republic of Bangladesh.
National Women Development Policy, 2011
Seventh Plan FY 2016 – FY 2020 (Gender Strategy for the Seventh Plan FY 2016 – FY 2020)
National Water Policy-1999, Ministry of Water Resources
National Water Management Plan (NWMP) 2004, Ministry of Water Resources
National Agriculture Policy 2013, Ministry of Agriculture
Local Government Division (Web Site)
Gender Equity Strategy of LGED
Development Project Proposal (DPP) of SSWRDP, Phase-2 (JICA-2)
Gender Action Plan of Water Sector Revised on December 2017
GAD Guidelines and Action Plan, JICA-1
Final report on Small Scale Water Resources Development Data Collection Survey prepared by JICA
Capacity Development Plan of Small Scale Water Resources Development Project Phase-2

Attachment III-22
Guidelines for Project
Monitoring

**GUIDELINES FOR PROJECT MONITORING
(MONTHLY PROGRESS REPORT, SP COMPLETION REPORT, SUSTAINABILITY PLAN)**

Objectives

These guidelines are intended to provide common format of documents and reports required by the PMU, PIU, the Local Consultant (ID Expert), Divisional Office and WMCA to facilitate monitoring and analysis of SP implementation and performance, and, planning for sustainability or expansion of implemented SPs and WMCA activities during and after JICA-2.

Scope

The topics covered by these guidelines are as follows:

1. Guideline in the Preparation of Monthly Progress Report for Institutional Development Action Plan (ID-AP)
2. Guideline in the Preparation of Subproject Completion Report (SPCR)
3. Guideline in the Preparation of Sustainability Plan

1. GUIDELINE ON PREPARATION OF MONTHLY PROGRESS REPORT FOR ID-AP

The progress of JICA-2 institutional development is monitored through the Monthly Progress Report (refer to Form II-30). This report shall serve as the main instrument of PIU in closely monitoring, assessing and guiding implementation of the approved/confirmed ID-AP. This activity shall form part of the agenda during the conduct of monthly coordination meeting by PIU.

This report preparation is by CO and GF, U-PIU in coordination with the Local Consultant (ID Expert), Divisional Office and WMCA chairperson. The report forms contain identical columns/parts as follows:

- 1) Month for which the report is rendered;
- 2) Name of WMCA;
- 3) SP Development Type;
- 4) Full Address of WMCA;
- 5) Targets for the Month in terms of:
 - a) Activities - target activities during the month as indicated in the JICA-2 ID-AP time frame; and
 - b) Expected Output - concrete output expected as a result of executing the target activities above. Usually expressed in measurable terms, this is covered under the "Target" column of the ID-AP.
- 6) Accomplishment with such details as:
 - a) Implementer - member who undertook/led in undertaking any particular target activity;
 - b) Activity Output/Result - actual output resulting from undertaking the target activity expressed in measurable terms; and
 - c) Deviation from the targets - any gap between Expected Output and Activity Output/Result. Deviations could either be positive or negative.
- 7) Reasons for Deviation: Explanations why deviation occurred.
- 8) Next Month's Activity/ Remarks: Description of planned activities during the next month after this month's progress is taken into account; also, other relevant observations relating to ID-AP implementation.

2. GUIDELINE ON PREPARATION OF SPCR

The progress of each JICA-2 SP is monitored through the SPCR (refer to Form II-37). This report shall serve as the main instrument of PIU and PMU in giving an account of the project implementation, funds and funds utilization and the outcome of the project or activity. This activity shall form part of the agenda during the conduct of monthly coordination meeting by PIU and semi-annual progress review and planning conference by PMU.

This report is prepared by WMCA chairperson, endorsed by D-PIU and approved by PMU. The report forms contain identical columns/parts as follows:

- 1) Description – SP name, its location, SSWRD types;
- 2) Purpose – statement of the reason or motivation for implementing the SP;
- 3) Objectives – provide the specific targets of the SP construction, equipment (for additional and flagship SPs) and facility (for flagship SPs)
- 4) Name of Staff – personnel in charge of SP implementation;
- 5) Mode of Implementation – discuss the processes or manner the SP was implemented including the implementation, construction, lease, etc.
- 6) Result – statement of achievement of the SP beneficiary area (ha) (persons) against targets;
- 7) Sustainability –statement of available resources in particular finance and personnel to sustain WMCA activities;
- 8) Project Insight – testimony of implementers and participants about their experiences, lessons learned suggestions, etc.
- 9) Issues and Recommendations – important issues and problems encountered in the implementation of the project and proposed solutions to these problems.

3. GUIDELINE ON PREPARATION OF SUSTAINABILITY PLAN

This guideline is formulated to assist the WMCA in the preparation of Sustainability Plan (refer to Form II-35). The Plan is necessary to ensure the continuation and/ or expansion of the WMCA activities after the phase out of JICA-2. This activity shall form part of the agenda during the conduct of monthly coordination meeting by PIU and semi-annual progress review and planning conference by PMU.

This report is prepared by WMCA chairperson, endorsed by D-PIU and approved by PMU.

Activities for Sustainability

The activities to be done before the phase out of JICA-2 to enhance sustainability of WMCA activities are:

- a. Sustainability Planning, and
- b. Investors Meeting and Pledging of Support

a. Sustainability Planning Workshop

The Sustainability Plan shall outline the actual condition of the implemented SPs or WMCA activities including analysis of the achievements, problems and prospects of these projects. The subject cooperative or federation shall indicate in the Plan the proposed management action on the projects, the required assistance to carry out the action and projected results of such management actions.

b. Investors' Meeting and Pledging of Support

1) Purpose of the Meeting:

Immediately after the Sustainability Planning Workshop, the WMCA MC shall organize a meeting with the investors or supporters to allow the subject cooperative or federation to present the projects, the achievement, future outlook of the project, objectives, action plan and required assistance. The purpose of the meeting is to convince the investors to fund the projects.

2) Participants:

The meeting shall be attended by the local consultant (ID Expert) at Divisional/Regional Office, Sociologist, AF and FF at D-PIU, CO and GF at U-PIU, UCO, UAO, ULO, UFO, UWAO and UEO. The resource institutions, NGOs, financial institutions and other business partners may be requested to attend the meeting according to the resources or assistance required from them.

3) Pledging of Support

The WMCA shall ask each investor the kind and amount of assistance or investment to be provided to the projects. At the end of the meeting the WMCA and other investors will sign a Pledge of Support. The Pledge of Support will be a basis for the preparation of Memorandum of Agreement or new business contract.