Government of the People's Republic of Bangladesh
Ministry of Water Resources

Water Resources Planning Organization

Terms of Reference (ToR)
for

"Participatory Rural Appraisal (PRA) Study"

Under the project

বাংলাদেশের উত্তর-পশ্চিম হাইড্রোলজিক্যাল অঞ্চলের ১৩ টি জেলায় অ্যাকুইফার ম্যাপিং প্রণয়ন এবং পানি সংকটাপন্ন এলাকা নিরুপন

(Aquifer Mapping Preparation and Water Stress Area Assessment in 13 Districts of the North-West Hydrological Regions of Bangladesh)

May, 2025

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Participatory Rural Appraisal (PRA) Study

1. Introduction

Sustainable solutions to water problems require a paradigm shift from compartmental sub-sector-wise development to holistic water governance. Such a paradigm is encapsulated in the Integrated Water Resources Management (IWRM) concept. IWRM challenges conventional, fractional water development and management systems and emphasizes an integrated approach with coordinated decision making across sectors and scales. Furthermore, to face the growing challenges regarding water rights, protection of resources, water use, and water services management, Bangladesh has enacted a comprehensive legal framework called the Bangladesh Water Act, 2013, which received the President's assent on 2nd May 2013. This act outlines a coordinated and comprehensive regime for the development, management, extraction, allocation, use and conservation of water resources.

Therefore, it is necessary to put the Bangladesh Water Act, 2013 and the Bangladesh Water Rules, 2018 into practice in the entire Bangladesh and to understand local economic and social dynamics related to water management in line with IWRM concept. At a local scale, the problems of water scarcity in the critical and vulnerable areas in Bangladesh continue unchecked, existing irrigation and drinking water wells are being abandoned or operate at reduced capacity, the water table continues to fall unsustainably. Awareness of the problems, inside and outside the critical areas, has increased but initiatives to reverse the trends have been piecemeal, uncoordinated and inadequate in scale. Several projects took important steps to correct the problems, but much more is needed to coordinate, implement and facilitate water-saving and water-enhancing actions.

Water Resources Planning Organization (WARPO) is an apex organization under the Ministry of Water Resources (MoWR), dealing with nationwide water resources planning and is designated by the Bangladesh Water Act, 2013 as the nodal agency for coordinating IWRM. WARPO is mandated as the lead agency for implementation of the Act and its Rules and the regulation of water resources development. The National Water Policy (NWPo), 1999 also requires that WARPO will routinely update the water resources assessment of the country and monitor the state of water resources system so that the implementation, performance and the impacts of the National Water Management Plan (NWMP)/the National Water Resources Plan (NWRP) can adequately be addressed. Thus WARPO will implement the proposed project in compliance with the Bangladesh Water Act, 2013 and Bangladesh Water Rules, 2018 to protect the water sources and aquifers, and to develop sustainable water resources management in solving practical problems of water scarcity.

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The problems of water resources in most of the districts of Bangladesh are enormous. This study has been undertaken in 13 districts in the North-West hydrological regions of Bangladesh where complex hydrogeological conditions make water supply difficult. In spite of having large number of natural streams, ponds and decent groundwater storage, the scarcity of potable water is acute. Groundwater of acceptable quality is not available in most parts of these regions due to relatively shallow depths for easy withdrawal by conventional hand pump tube wells which has caused significant negative impacts on agricultural, fish and livestock production. Other problems include drainage congestion, flooding, erosion and sedimentation in rivers etc. The use of easily available waters as source of domestic water supply requires extensive costly treatment which is not a practical proposition for scattered rural population nor affordable in the context of rural economic condition in the study area.

Bangladesh, being an agricultural country, is highly dependent on groundwater irrigation given the fact that the existence of this resource was seen as abundant till recent years. As the surface water supply is decreasing day by day during the dry season, but the demand for irrigation is ever increasing, so the increasing trend in agricultural production is leaving the aquifer in vulnerable brink. Groundwater irrigation drastically increased in Bangladesh since the last three decades. But the source is limited and it is declining day by day due to intensive use of tube wells during dry season. In addition, rapid urbanization and industrialization in the recent years make the situation more critical. According to Bangladesh Water Act, 2013 and its Rules, it is important to identify the water scarce areas and sustainable water resources management. The paradigm shift from 'groundwater development' to 'groundwater management' in Bangladesh as laid out in Bangladesh Water Rules, 2018 through aquifer mapping in different hydro-geological settings require robust groundwater management plans at the appropriate scale to be devised and implemented. As one of the major sources of water for the country as well as an inevitable part of the hydrological system, groundwater resource needs to be seen as limited resource and therefore its management plan should associate the specification of sustainable abstraction limit.

The recent downward trend in groundwater levels in most of the districts of Bangladesh is evidently representing the alarm, coined with the rapid urbanization and industrialization which is persistently decreasing the potential recharge area as well as deteriorating quality of water. The groundwater aquifer is in complex nature, mainly addressed by deep. The scope for groundwater recharge has been reduced drastically due to unplanned paving in most of the areas. On the other hand demand is increasing day by day. As a result, groundwater table in these districts (13 nos) of North-West region is successively falling by years with increasing withdrawal of water for domestic, municipal, industrial and irrigation. Therefore, it is very important to assess the quantity and quality of surface and groundwater resources and their use and demand in the study area. Assessment of surface and

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groundwater resources in these districts within the proposed project will help to address the efficient use of surface and groundwater resources as well as sustainable water resources planning and management for operationalizing the Bangladesh Water Act, 2013 in Bangladesh. To undertake this assessment, services will be required of qualified professional firms/organizations experienced in Participatory Rural Appraisal (PRA) for participatory water resources planning and management.

Participatory Rural Appraisal (PRA) is the process of involving local people in the analysis and interpretation of their own situation of a given rural area. The local people i.e. the participants take a leadership role in collecting, analyzing, interpreting and presenting information and in this process imparts knowledge and development insight to the specialists and extension agents. PRA approach embodies a whole range of techniques which reveals valuable information/data on the resources and skills existing in the village, wealth structure and dynamics of caste and class. For management of water resources, PRA is conducted to establish rapport with the village community as well as to identify and define problems for prioritization in the village itself.

Numerous studies are conducted on groundwater depth fluctuation, recharge potentials and aquifer characteristics for the study area on a broader scale revealing the vulnerability of the aquifer and groundwater resources. However, actual representation of the aquifer system and water budget is required to examine the present and future vulnerability scale. The Bangladesh Water Act, 2013 keeps the provision of determining the lowest safe yield level of aquifer up to Mouza level, and declaration of Water Stress Area for a specific period, which seeks a clear understanding of the state of water resources of the designated area to have proper monitoring of the implementation of the Act and its Rules. Based on the principle of listening and learning, PRA is the technique of immediate analysis and survey of village resources for participatory micro-planning and development. PRA is a way of enabling rural people to analyze their living conditions, share the outcomes and plan their activities. PRA will give a comprehensive overview of the perceptions of the different local interest groups (farmers, labors, fishermen, women, minorities etc.) concerning water in its broadest sense in the project area. It is a way of learning from and with community members to investigate their need assessment, analyze and evaluate constraints and opportunities and find out priorities in the area of agriculture, small scale rural enterprises and any other socio-economic development programs addressed to village development.

2. Project area

The Project will promote and facilitate the operationalizing of the Bangladesh Water Act, 2013 and the Bangladesh Water Rules, 2018. Most of the activities will be targeted at implementation of the Act and its Rules, IWRM interventions and assessment of state of water resources in the administrative limits of 13 districts in the North-West hydrological

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region of Bangladesh (Fig. 1). An active water management area will be precisely aligned during the Inception period to coincide with Mouza boundaries.

The total task of PRA assessment will be conducted through 01 (one) package. Table 1 shows the district names for this hydrological regions.

Table 1: Project Area (13 Districts) within North-West Hydrological region

Sr. No.	Name of Division	Nos. & Names of District	Nos. of Upazilla	Nos. of Union	Nos. of Mouza
1.	Rajshahi	**5** (Bogra, Joypurhat, Natore, Pabna & Sirajganj)	42	348	6,536
2.	Rangpur	**8** (Rangpur, Dinajpur, Gaibandha, Lalmonirhat, Kurigram, Nilphamari, Thakurgaon & Panchagarh)	58	535	6,703
Total		**13**	**100**	**883**	**13,239**

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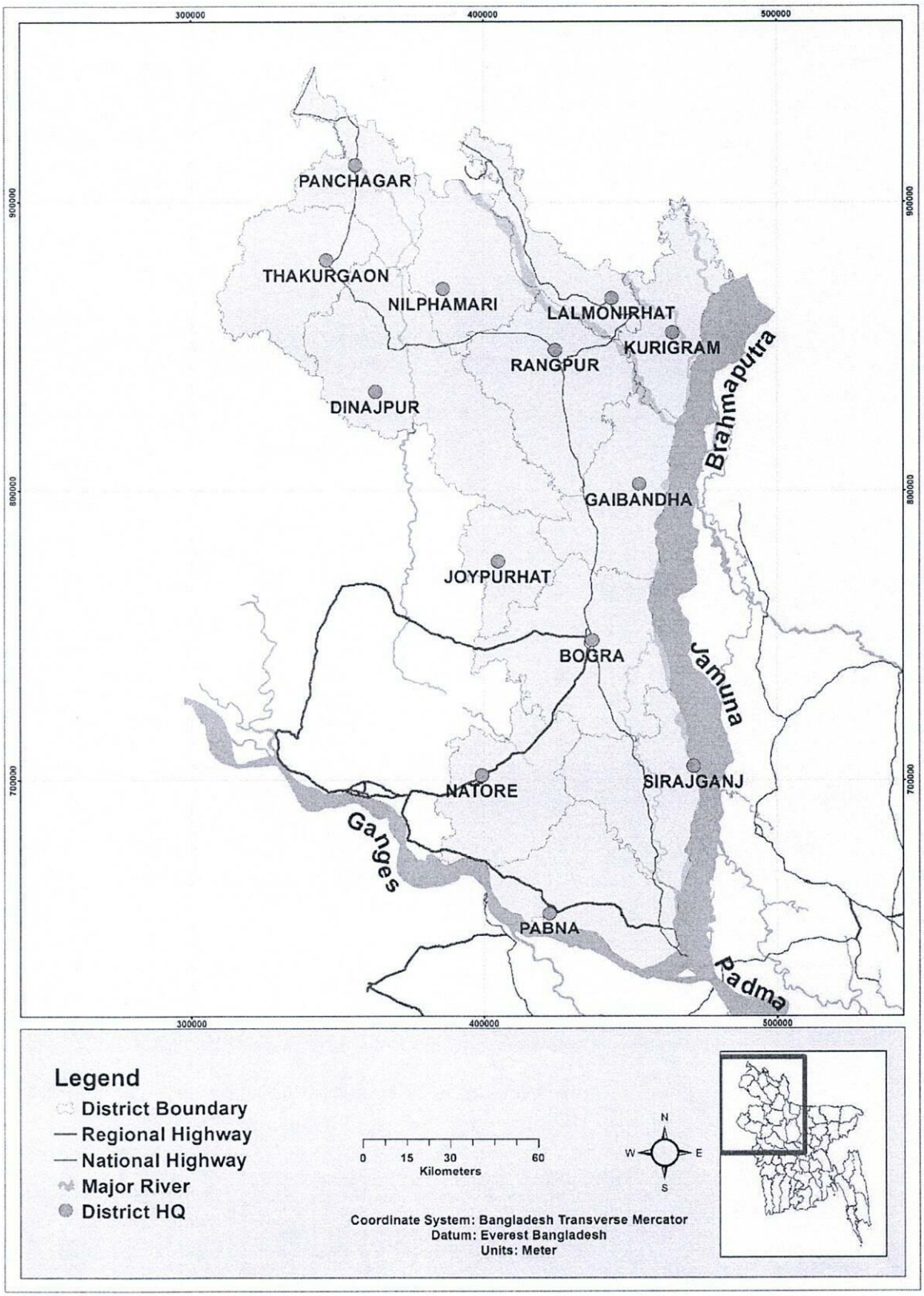

Fig. 1: Project area (13 Districts) within North-West hydrological region of Bangladesh

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3. Objectives

The main objective of this component is to perform baseline study to identify the state of surface and groundwater resources (water availability, demand, quality and use) in the study area up to union/mouza level through Participatory Rural Appraisal (PRA) approach for supporting operationalization of the Bangladesh Water Act, 2013 and Bangladesh Water Rules, 2018.

The specific objectives of PRA are:

(i) to identify the water sources, present water use scenario, sectoral water demand and water quality up to union/mouza level in the study area;

(ii) to prepare detail assessment report of the baseline condition incorporating local people's needs, views and preferences on IWRM; and

(iii) to facilitate monitoring with a view to create improved environment for sustainable water resources planning and management in the study area.

4. Scope of Works

The major scope of work of PRA shall include, but will not necessarily limited to –

(a) an inventory of all local water resources and the way they are presently used;

(b) Assessment of the present status of monitoring wells and the required monitoring wells to be installed for filling up the data gap; and

(c) the perceptions of local interest groups on water related constraints in relation to domestic, agricultural, fisheries, navigational, environmental and other usage

Activities to perform:

- Perform the baseline study, identify the water sources, present water use scenario, water demand, water quality in the study area through PRA process.
- Conduct Focus-Group Discussion (FGD) meetings and Key Informant Interview (KII). At least one-third of the participants will be women in each FGD.
- Identify and mapping the current location and status of observation/monitoring wells and irrigation borehole logs up to union/mouza level in the study area.
- Propose the maximum numbers of necessary monitoring wells that can be installed to fill up the data gap in the study area.

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- Establish baseline condition concerning population, natural resources, land use and farming systems, agricultural practices and their constraints and opportunities.
- Analyse the present surface water and grouewater availability based on secondary data and determine the water scarce zones within the study area.
- Ensure equitable account of views of different socio-economic group; identify special needs and aspirations of specific group like women, marginal farmers, land less group, fishermen and minority groups.
- Prepare a detail PRA report with comprehensive maps for water availability, water quality, water use, water demand, water scarce zones and GIS mapping of existing and required monitoring wells in the study area.

5. Expected Output

The major outputs of the PRA study are as follows:

- A detail PRA report with comprehensive maps for water availability, water quality, water use, water demand, water scarce zones in the study area.
- Base map of the study area using information from PRA process and secondary data analysis showing existing and required monitoring wells, rivers and canals and wetlands.
- Maps showing population, natural resources, all physical features of land use inventory and agricultural practices in the study area.

6. Data Collection and Methodology

The methodology and tools to conduct PRA will be of standard type as in PRAs conducted in other similar projects. However, the approach and method to execute the baseline study through PRA process and collection of hydrological, meteorological, hydro-geological, morphological data, aquifer properties, groundwater level, existing DTWs/STWs and monitoring wells, are to be submitted by the Consultant before commencement of the study.

7. Work Plan and Manning Schedule

The Work Plan and the manning schedule of the study for PRA Personnel are to be submitted by the Consultant before commencement of the study.

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8. Duration of the Contract

The Consultant for PRA study will be procured for a period of **12 (Twelve) months** from the date of commencement according to the Contract.

9. Major Deliverables

- Detail PRA assessment on water availability, water use, water demand, water quality, water scarce zones in the study area.
- Detail assessment with GIS maps on the current location and status of monitoring wells and required monitoring wells to be installed in the study area.

10. Professional input

The total task of PRA assessment will be conducted through one (01) package. The Consultant team will consist of a Water Resources Planner as Team Leader along with Water Management Specialists, Socio-economists, Environmentalists, Agronomists, Fisheries Specialists and GIS Specialists. It is estimated that for carrying out the PRA in 13 districts in the North-West hydrological region including relevant data collection, it will require about **86 man-months** of local Consultants. The professional input for the Consultant team has been shown below:

Sr. No.	Description of the Position	Number of Consultants	Total Man-Months
1.	Water Resources Planner/Team Leader	1	10
2.	Senior Planning and Policy Expert	1	10
3.	Water Management Specialist	2	10
4.	Socio-economist	2	8
5.	Environmentalist	2	8
6.	Agronomist	2	8
7.	Fisheries Specialist	1	4
8.	Gender Specialist	1	4
9.	GIS Specialist	2	8
10.	Field Coordinator	4	16
	Total	**20**	**86**

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11. Qualification and Responsibilities of the Consultants

The educational qualification, required experiences and the tasks and responsibilities of each of the Consultants have been described in details in **Annexure - 1**.

12. PRA Activities

The Consultants have to perform following numbers of Focus-Group Discussion (FGD) meetings and Key Informant Interviews (KII) through PRA in 13 districts within the study area:

Sl. no	Meeting type	Nos. in each District	Total
1	Focus-Group Discussion (FGD)	15	195
2	Key Informant Interviews (KII)	10	130
Total			**325**

13. Reporting Requirements

The following major Reports must be submitted after completion of the PRA study:

- Detail PRA assessment on water availability, water use, water demand, water quality, water scarce areas, water zoning in each of the 13 districts of the study area.
- Detail report with GIS maps on the current location and status of monitoring wells, and further requirement of wells in each of the 13 districts of the study area.

In addition to the above Reports, the following reports need to be submitted time to time:

Sl. No.	Report	Deadline	Copies
1.	Inception Report	end of the 2nd Month	10 Copies
2.	Mid Term Report	end of the 7th Month	10 Copies
3.	Draft Final Report	end of the 11th Month	15 Copies
4.	Final Report	end of the 12th Month	20 Copies

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14. Mode of Payments

All payment of the Consultants will be made through satisfactory completion of the work. All the reports must be approved by the Director General of WARPO before making any of the above payment. As per government rules, VAT and IT will be deducted from all of the payments to the Consultant. The consultant will get the payment as per the following schedule:

Invoice/ Bill No	% of Contract Amount	Against Deliverables
1st Invoice	20%	On submission of Inception Report
2nd Invoice	40%	On submission of Mid Term Report
3rd Invoice	20%	On submission of Draft Final Report
4th Invoice	20%	On submission of Final Report

15. Duties and Responsibilities

15.1 WARPO's Responsibilities

The Project Director (PD) will ensure that the objectives of the study as detailed in the Terms of References (ToR) are achieved within the agreed time schedule. The Project Director will in the context of the ToR direct the study process and supervise the execution of the study and monitor progress according to the said objectives. In particular, the Project Director will take necessary action in good time where such monitoring shows that outputs are not likely to be supplied at the required time. The Deputy Project Director and the specialised professionals of WARPO shall assist the project team as required for the study. The Consultants will be required to reschedule activities by taking consent from the Project Director if this becomes necessary.

The Project Director and the Deputy Project Director will ensure that the Consultants will have regular meetings with them to discuss technical and project management issues. Any unresolved issue should be taken up with the Director General, WARPO for appropriate solution. The Consultants will also report to Director General, WARPO regarding institutional strengthening support and other matters requiring specific guidance.

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WARPO will be responsible for arranging the following facilities:

- All hydrological, hydro-geological, meteorological data from National Water Resources Database (NWRD) free of cost.
- Satellite images and previous reports available with WARPO.
- Provide assistance for arranging collection of data from other agencies, if needed.
- Make available information from other study components.

15.2 Consultant's Responsibilities

The Consultants shall work under the direct supervision of the Project Director (PD) of WARPO. The Consultants shall carry out the services as detailed in the "Scope of Works" and "Responsibilities of the Consultants" in the best interest of the study with reasonable care, skill and diligence with sound engineering, administrative and financial practices and shall be responsible to the executing agency (WARPO) for discharge of responsibilities. The Team Leader will be responsible to the Director General, WARPO for proper and timely execution of all the activities of the study mentioned in the ToR of the project.

The Consultants will be responsible for arranging the following facilities:

- Making necessary arrangements for site visit and primary data collection.
- Discussion with WARPO to avoid any duplication in the data collection.
- Handing over the collected data (primary and secondary) and study results to WARPO for their use and NWRD records.
- Making necessary arrangements for additional hydrological, meteorological, spatial, temporal, satellite images (GIS & remote sensing) and other necessary data collection from secondary source as needed for the study.
- Carrying out activities as per scope of work and delivering the study report.
- Handing over the procured goods and equipment to WARPO after completion of the contract.
- Providing support staff including administrative and financial staff needed for the effective delivery of the services.

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Annexure - 1

Qualification, Experience and Responsibilities of Consultants

'Participatory Rural Appraisal (PRA) Study'

Name of the Position	Nos. of Position	Educational qualification	Experience	Responsibilities
1	2	3	4	5
Water Resources Planner/Team Leader	01	He/she must have a Bachelor's degree, preferably with a Master's/PhD degree, in Civil Engineering/Water Resources Engineering or any other relavant field from a well reputed university.	He/she must be a nationally reputed figure in water sector in Bangladesh and must have minimum 20 years of working experience in water resources planning, IWRM and resource management. He/she must have practical experience of working at field level for PRA assessment in similar water management projects with multi-disciplinary and multi-cultural team.	▪ Overall responsibility for conducting PRA activities of the project. ▪ Full responsibility of all aspects of planning, liaison and reporting for the PRA team. ▪ Study and review of previous water resources development projects in the study area. ▪ Orient the conceptual and strategic work plan to carry out the PRA activities. ▪ Conduct FGD and KII activities ensuring equitable account of views of different socio-economic groups. ▪ Coordinate and supervise the tasks of other specialists in the PRA team. ▪ Supervise for identification of water sources and monitoring wells and borehole logs in the study area. ▪ Prepare the PRA report and validate the report with appropriate authority. ▪ Prepare proceedings of all consultation meetings. ▪ Any activity assigned by the Project Director for the interest of the project.

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Name of the Position	Nos. of Position	Educational qualification	Experience	Responsibilities
1	2	3	4	5
Senior Planning and Policy Expert	01	He/she must have a Bachelor's degree, preferably with a Master's/PhD degree, in Economics/Social Science/Development Studies or any other relavant field from a well reputed university.	He/she must have minimum 20 years of working experience in public sector in project preparation, management, monitoring & evaluation and able to translate and facilitate Government Policy/Strategy into action and to conduct feasibility studies. He/she must have practical experience of working in similar water resources management related activities with multi-disciplinary and multi-cultural team.	▪ Assist the Team Leader to plan, develop and implement project vision, strategy & approach. ▪ Identify projects according to the Government Policies and Strategies in the relavant fields. ▪ Provide guidance in developing and maintaining relationships with GOB stakeholders, including related ministries. ▪ Facilitate the local level institutional development process. ▪ Provide advisory support in developing training curricula for capacity development. ▪ Coordinate implementation of all project activities according to approved work plan & budget (WP&B). ▪ Evaluate inter-agency relationship and gaps in the study area ▪ Provide oversight to organizing workshops, field visits, meetings and consultations. ▪ Assist the Team Leader in planning and preparation of the PRA report. ▪ Maintain close contact with the Project Director for briefing his/her output.

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পানি সম্পদ মন্ত্রণালয়

Md. Al-amin Ka...
Senior Sci...
Executi...
Water Resources ...
Ministry of W...

Kazi Saidur Rahman
Project Director
NWHR 13 Project
Water Resources Planning Organization

Name of the Position	Nos. of Position	Educational qualification	Experience	Responsibilities
1	2	3	4	5
Water Management Specialist	02	He/she must have a Bachelor's degree, preferably with a Master's degree, in Civil Engineering/Water Resources Engineering/ Water Resources Management/Hydrology or any other relavant field from a well reputed university.	He/she must have minimum 20 years of working experience in water resources management and conducting community level consultations. He/she must have practical experience of working in similar water resources management related activities with multi-disciplinary and multi-cultural team.	▪ Assist the Team Leader in planning, liaison and reporting for the PRA activities. ▪ Study and review of previous water resources development projects in the study area. ▪ Arrange extensive FGD nad KII activities at union/mouza level in the study area. ▪ Coordinate the tasks of other specialists in the PRA team. ▪ Supervise data collection for water use, water demand and location and status of monitoring wells and borehole logs in the study area. ▪ Analyze all types of primary and secondary data under guidance from the Team Leader. ▪ Prepare preliminary assessment report of the existing situation and need assessment for the study. ▪ Any activity assigned by the Project Director for the interest of the project. ▪ Maintain close contact with the Project Director for briefing his/her output.

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Md. Al-amin Kabir Bhuyan
Senior Scientific Officer/
Executive Engineer
Water Resources Planning Organization
Ministry of Water Resources

Kazi Saidur Rahman
Project Director
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Water Resources Planning Organization

Name of the Position	Nos. of Position	Educational qualification	Experience	Responsibilities
1	2	3	4	5
Socio-economist	02	He/she must have a Bachelor's degree, preferably with a Master's/M.Phil degree, in Social Science/ Sociology/Economics/ Business Studies/ Development Studies or any other relavant field from a well reputed university.	He/she must have minimum 12 years of working experience in specific social development-focused programs and conducting community level consultations. He/she must have practical experience of working in similar projects at grass root level with multi-disciplinary and multi-cultural team.	▪ Assist the Team Leader in planning, liaison and reporting for the PRA activities. ▪ Study and review of previous water resources development projects in the study area. ▪ Undertake socio-economical assessment through PRA process ensuring equitable account of the views different socio-economic groups. ▪ Assess community, including women's needs and views on existing project objectives and management. ▪ Assess the economic consequences of environmental impacts resulting from previous projects. ▪ Prepare preliminary assessment report of the existing situation and need assessment for the study. ▪ Prepare different reports including people's views and needs regarding water use and water demand ▪ To assist the Team leader in preparation of the PRA report. ▪ Any activity assigned by the Project Director for the interest of the project. ▪ Maintain close contact with the Project Director for briefing his/her output.

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Name of the Position	Nos. of Position	Educational qualification	Experience	Responsibilities
1	2	3	4	5
Environmentalist	02	He/she must have a Bachelor's degree, preferably with a Master's degree, in Civil Engineering/Water Resources Engineering/ Environmental Science/ Geography and Environment/Disaster Management/Forestry or any other relavant field from a well reputed university.	He/she must have minimum 12 years of working experience in impact assessment of environmental changes on ecosystem, biodiversity etc. He/she must have practical experience of working in similar environmental related activities with multi-disciplinary and multi-cultural team.	▪ Study and review of previous water resources development projects in the study area. ▪ Develop methodologies for PRA and participatory planning. ▪ Provide guidelines and technical supports in developing environmental impact assessments. ▪ Analyze all types of primary and secondary data under guidance from the Team Leader. ▪ Assist in identifying changes in life cycle of flora and fauna due to changes in environmental condition as a result of climate change. ▪ Assist in identifying possible impacts of changes in fishery resources, biodiversity and ecosystem in the study area. ▪ Prepare preliminary assessment report of the existing situation and need assessment for the study. ▪ To assist the Team leader in preparation of the PRA report. ▪ Any activity assigned by the Project Director for the interest of the project. ▪ Maintain close contact with the Project Director for briefing his/her output.

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1	2	3	4	5
Agronomist	02	He/she must have a Bachelor's degree, preferably with a Master's degree, in Agriculture/ Agronomy/Agricultural Engineering or any other relavant field from a well reputed university.	He/she must have minimum 8 years of working experience in agriculture related activities and conducting community level consultations. He/she must have practical experience of working in modelling monsoon cropping pattern, land use in similar water resources management projects.	▪ Study and review of previous water resources development projects in the study area. ▪ Undertake agricultural assessment through PRA process ensuring equitable account of the views different socio-economic groups. ▪ Establish baseline condition in respect of land resources and agricultural practices in the study area. ▪ Prepare technically, socially, and environmentally viable production plans for efficient water use. ▪ Advise on appropriate methods and techniques to enable crop diversification for water conservation, and effective water management. ▪ Prepare preliminary assessment report of the existing situation and need assessment for the study. ▪ To assist the Team leader in preparation of the PRA report. ▪ Any activity assigned by the Project Director for the interest of the project. ▪ Maintain close contact with the Project Director for briefing his/her output.

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Name of the Position	Nos. of Position	Educational qualification	Experience	Responsibilities
1	2	3	4	5
Fisheries Specialist	01	He/she must have a Bachelor's degree, preferably with a Master's degree, in Fishery/ Aquaculture/ Environmental science or any other relavant field from a well reputed university.	He/she must have minimum 8 years of working experience in the assessment of fisheries resources and fisheries development/extension and promotion related activities. He/she must have practical experience of working in fishersies ecosystem. fisheries data acquisition and analysis in similar water resources management projects.	▪ Study and review of previous water resources development projects in the study area. ▪ Assess the impact of the change in the flow regime of the main rivers on capturing and culturing fisheries. ▪ Identify suitable aquaculture and fisheries management techniques for existing water bodies. ▪ Assist in identifying changes in life cycle of flora and fauna due to changes in environmental condition and climate change. ▪ Identify possible impacts of changes in fishery resources, biodiversity and ecosystem. ▪ Assess community, including fishermens's needs and views on existing project objectives and management. ▪ Prepare preliminary assessment report of the existing situation and need assessment for the study. ▪ To assist the Team leader in preparation of the PRA report. ▪ Any activity assigned by the Project Director for the interest of the project. ▪ Maintain close contact with the Project Director for briefing his/her output.

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Name of the Position	Nos. of Position	Educational qualification	Experience	Responsibilities
1	2	3	4	5
Gender Specialist	01	He/she must have a Bachelor's degree, preferably with a Master's/M.Phil degree, in Social Science/ Sociology/Social Welfare/ Development Studies or or any other relavant field from a well reputed university.	He/she must have minimum 8 years of working experience in formulating interventions to reduce the gender gaps by conducting community level consultations. He/she must have practical experience of working in similar projects at grass root level with multi-disciplinary and multi-cultural team.	▪ Study and review of previous water resources development projects in the study area. ▪ Conduct socio-economical assessment through PRA process ensuring equitable account of the views different socio-economic groups. ▪ Assess community, including women's needs and views on existing project objectives and management. ▪ Identify the special needs and aspiration of specific group like women, marginal farmers, minority groups etc. ▪ Identify the issues of social conflicts and gender gaps. ▪ Assist to formulate a monitoring plan for women and disadvantaged groups to reduce gender gaps ▪ To assist the Team leader in preparation of the PRA report. ▪ Any activity assigned by the Project Director for the interest of the project. ▪ Maintain close contact with the Project Director for briefing his/her output.

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Name of the Position	Nos. of Position	Educational qualification	Experience	Responsibilities
1	2	3	4	5
GIS Specialist	02	He/she must have a Bachelor's degree, preferably with a Master's degree, in Geography/ Civil Engineering/Water Resources Engineering/ Urban and Rural Planning/Geology/ Environmental Science or any other relavant field from a well reputed university.	He/she must have minimum 8 years of working experience in GIS application, Satellite image processing, GPS survey and ESRI software like ArcGIS, ArcInfo Desktop, ArcSDE, ArcView etc. He/she must have practical experience in similar GIS related activities in producing GIS coverage, contour maps, Digital Elevation Model (DEM) etc.	▪ Prepare plan for GIS application in consultation with other specialists of the PRA team. ▪ Collection of reports/maps/data from different secondary sources. ▪ Develop GIS, RS and Time Series database collected from different primary and secondary sources. ▪ Analyze all types of primary and secondary data under guidance from the Team Leader. ▪ Prepare all physical features of land use inventory using GIS application and satellite image processing. ▪ Prepare maps for water availability, water use, water demand and location and status of monitoring wells and borehole logs in the study area. ▪ Provide guidance to prepare GIS based maps of water stress areas, water zoning, aquifer formation maps. ▪ Any activity assigned by the Project Director for the interest of the project. ▪ Maintain close contact with the Project Director for briefing his/her output.

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1	2	3	4	5
Field Coordinator (Non-Key Professional)	04	He/she must have a Bachelor's degree in any discipline from a well reputed university.	He/she must have minimum 5 years of working experience in fascilitating and arranging field data collection, field visits in similar projects at grass root level with multi-disciplinary and multi-cultural team.	▪ Compile and analyse necessary information related to data collection. ▪ Assist the PRA team for conducting FGD and KII and other field data collection as and when necessary. ▪ Coordinate and planning of all the field visits of the PRA team ▪ Arrange meetings and facilitate the workshop/ seminars in the study region. ▪ To assist the Team leader in coordinating all the field data collection programs. ▪ Any activity assigned by the Project Director for the interest of the project. ▪ Maintain close contact with the Project Director for briefing his/her output.

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25.05.25
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